



**AN INVESTIGATION INTO THE DIFFERENTIAL EFFECTS  
OF VARIETIES OF PRAISE**

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## TABLE OF CONTENTS

Table of Contents.....	ii
List of Tables .....	xi
List of Figures.....	xx
Abstract.....	xxi
Author's Statement.....	xxii
Acknowledgements.....	xxiii
Preface.....	xxiv
<b>CHAPTER 1</b> .....	<b>1</b>
1.1 The Effects of Praise and "Social Reinforcement" - A Brief Overview .....	1
1.2 Praise and "Social Reinforcement" - Definitions and Conceptual Models.....	5
1.3 Praise and Social Reinforcement - Control versus Informational Dimensions.....	12
<b>CHAPTER 2</b> .....	<b>19</b>
2.1 Attribution of a Characteristic and "Labelling" - Effects and Possible Mechanisms.....	19
2.1.1 "Labelling": Behavioural Evidence and the Foot-in-the-Door Phenomenon.....	25
2.1.2 Negative Evidence and Negative Labels .....	27
2.1.3 Behavioural Measures and Self-Rating Measures.....	29
2.1.4 "Labelling": Concluding Comments.....	29
2.2 Expectancy Effects and the Self-Fulfilling Prophecy: Introductory Remarks.....	29
2.2.1 The Effects of the Communication of a Specific Expectation for Behaviour .....	30
2.2.2 The Self-Fulfilling Prophecy: Behavioural Confirmation versus Self-Verification .....	32
2.2.3 Final Remarks .....	33
<b>CHAPTER 3</b> .....	<b>35</b>
3.1 The "Self-Concept": What is it? (1) Issues.....	36
3.1.1 Structure or Process .....	36
3.1.2 One Self or Many.....	37
3.1.3 In or Out of Awareness.....	38
3.1.4 The Spontaneous Self-Concept.....	40
3.1.5 Can there be a Concept of Self?.....	41
3.2 The "Self-Concept": What is it? (2) The Cognitive Approach.....	42
3.2.1 Schemata and Self-Schemas: Where do they fit in?.....	45
3.2.1.1 Schemata: Definitions.....	45
3.2.1.2 Self-Schemas: An Extension of the General Concept of "Schemata".....	47
3.3 The Self-Concept: How does it Develop and Change? How is it Maintained? .....	49
3.3.1 The Self-Concept: Consistency, and Attribution-Behaviour Relationships.....	52
3.3.1.1 Evidence from Applied Psychology .....	56
3.3.2 Self-Enhancement and Self-Presentation.....	58
3.4 Measuring the Self-Concept.....	60
3.5 The Thesis.....	62
<b>CHAPTER 4 - INDIVIDUAL DIFFERENCES AND MODERATING VARIABLES</b> .....	<b>63</b>
4.1 Reinforcement History .....	63
4.2 Attributional Style .....	65
4.3 Self-Variables (1) .....	71
4.3.1 Self-Consciousness Theory.....	71
4.3.2 Self-Monitoring Theory.....	74
4.4 Self-Variables (2): Being Self-Schematic, Importance and Schematism.....	76
4.5 Situational and Task Variables.....	78
4.6 The Nature of the Attributed Characteristic .....	81
4.7 Other Variables.....	87

CHAPTER 5 - STUDY 1.....	91
5.1 Introduction .....	91
5.1.1 The Experiment.....	92
5.1.2 The Questionnaires .....	93
5.2 Method.....	96
5.2.1 Subjects .....	96
5.2.2 Operational Definition .....	96
5.2.3 Procedure .....	96
5.3 Results and Discussion .....	98
5.3.1 Measures Obtained.....	98
5.3.2 Analyses.....	100
5.3.3 Attribution Group: Questionnaire Data .....	108
5.4 General Discussion.....	112
CHAPTER 6 - EXPERIMENT 2.....	115
6.1 Introduction .....	115
6.1.1 Description of Experiment.....	117
6.2 Method.....	118
6.2.1 Subjects.....	118
6.2.2 Procedure .....	118
6.3 Results and Discussion.....	120
6.3.1 Main Comparison: Comparison of Groups on Time Spent on Game 3 (Word Search) .....	121
6.3.2 Comparison of Groups on Time Spent on Game 2 (Maze) .....	122
6.3.3 Comparison of Groups on Time Spent on Game 4 (Zombies).....	122
6.3.4 Comparison of Groups on Time Spent on Game 1 (Alien Blaster).....	123
6.3.5 Comparison of Groups on Time Spent on Game 3 with Time Spent on Game 1 as a Covariate .....	123
6.3.6 Comparison of Groups on Time Spent on Game 3 with Time 2 as a Covariate.....	123
6.3.7 Overall Comparison of the Games.....	124
6.3.8 Comparison of Groups on Ratings of Game 3.....	124
6.3.9 Comparison of Groups on Ratings of Game 2.....	128
6.3.10 Comparison of Groups on Ratings of Game 4.....	129
6.3.11 Comparison of Groups on Ratings of Game 1.....	133
6.4 General Discussion.....	135
CHAPTER 7 - PART 1 - EXPERIMENT 4.....	139
7.1.1 Introduction.....	139
7.1.1.1 Description of Experiment and Preliminary Work.....	141
7.1.2 Method.....	145
7.1.2.1 Subjects.....	145
7.1.2.2 Procedure .....	145
7.1.2.3 Wording of Manipulations.....	146
7.1.3 Results .....	147
7.1.3.1. Comparison of Groups on Artistic Judgment Scores, Intelligence Scores and Temperament Scores .....	147
7.1.3.2 Comparison of Groups on Confidence in Artistic Talent, Intelligence and Temperament Judgments.....	148
7.1.3.3 Comparison of Groups on Self-Rating Variables.....	148
7.1.3.4 Comparison of Groups on Self-Construction and Schematism Scores.....	149
7.1.3.5 Correlational Analyses.....	150
7.1.3.6 Comparison of Groups on Score, and Confidence, for Single Item Artistic Talent Judgment .....	152
7.1.3.7 Comparison of Subjects Below and Above the Mean on Self- Construction and Schematism on Coming to the Experiment.....	152
7.1.3.8 Comparison of Subjects Below and Above the Mean on Self- Construction and Schematism on Number of Judgments made in Each Category.....	153

7.1.3.9 Comparison of Subjects Below and Above the Mean on Self-Construction and Schematism on Overall Confidence.....	153
7.1.4 Discussion.....	154
CHAPTER 7 - PART 2 - EXPERIMENT 8.....	156
7.2.1 Introduction .....	156
7.2.2.1 Description of Experiment.....	156
7.2.2 Method.....	157
7.2.2.1 Subjects.....	157
7.2.2.2 Procedure .....	157
7.2.3 Results .....	159
7.2.3.1 Comparison of Groups on "Good" Judgments Made in Initial Phases.....	159
7.2.3.2 Comparison of Groups on Main Dependent Measure .....	159
7.2.3.3 Planned Comparisons of Groups on Confidence Ratings.....	159
7.2.4 Further Analysis of Experiment 4: Planned Comparisons of Confidence Ratings.....	162
7.2.4.1 Planned Comparisons of Groups on Confidence in Artistic Talent Judgments .....	162
7.2.4.2 Planned Comparisons of Groups on Confidence in Intelligence Judgments.....	162
7.2.4.3 Planned Comparisons of Groups on Confidence in Temperament Judgments .....	163
7.2.4.4 Planned Comparisons of Groups on Confidence in All Judgments .....	163
7.2.5 Discussion.....	164
CHAPTER 8 - PART 1 - EXPERIMENT 6.....	166
8.1.1 Introduction .....	166
8.1.1.1 Description of Experiment and Predictions.....	166
8.1.2 Method.....	168
8.1.2.1 Subjects.....	168
8.1.2.2 Procedure .....	168
8.1.2.3 Wording of Messages .....	169
8.1.3 Results .....	169
8.1.3.1 Return Rate .....	169
8.1.3.2 Results: Section 1 (Phase 1).....	169
8.1.3.2.1 Comparison of Creativity and Persistence Task Groups on Number of Interpretations Produced.....	169
8.1.3.2.2 Comparison of Creativity and Persistence Task Groups on Difficulty Ratings.....	170
8.1.3.2.3 Comparison of Creativity and Persistence Task Groups on Estimate of Time Spent on Task.....	170
8.1.3.2.4 Correlational Analysis .....	171
8.1.3.3 Results: Section 2 (Phase 2).....	171
8.1.3.3.1 Comparison of Groups on Number of Consequences Produced .....	171
8.1.3.3.2 Comparison of Groups on Consequences Task Ratings.....	171
8.1.3.3.3 Comparison of Groups on Consequences Task Ratings: Equalized Group Numbers.....	175
8.1.3.3.4 Comparison of Groups on Estimated Time Spent on Consequences Task.....	177
8.1.3.3.5 Comparison of Groups on Number of Returns.....	177
8.1.3.3.6 Correlational Analysis - Consequences Task .....	177
8.1.3.3.7 Factor Analysis of Task Rating Variables .....	178
8.1.4 Discussion.....	179
CHAPTER 8 - PART 2 - BEHAVIOUR RATING QUESTIONNAIRE STUDY .....	182
8.2.1 Introduction .....	182
8.2.2 Respondents and Procedure.....	182

8.2.3 Results .....	183
8.2.3.1 Item-by-Item Means and Standard Deviations .....	183
8.2.3.2 Comparison of Ability Items with Behavioural Propensity Items, and Health Items with Non-Health Items .....	184
8.2.3.3 Comparisons between Individual Items.....	185
8.2.4 Discussion.....	186
<b>CHAPTER 8 - PART 3 - CHARACTERISTICS RATING QUESTIONNAIRE STUDY .....</b>	<b>188</b>
8.3.1 Introduction .....	188
8.3.1.1 The Questionnaire.....	188
8.3.2 Respondents and Procedure.....	188
8.3.3 Results .....	189
8.3.3.1 Comparison of "Persistent" and "Creative" .....	189
8.3.3.2 Comparison of "Good at making first impression judgments about another person's artistic abilities" and "Looks for the good characteristics in another person" .....	190
8.3.3.3 Comparison of "Perceptive" and "Looks for the good characteristics in another person" .....	191
8.3.3.4 Intercorrelations between Dimensions on Remaining Characteristics.....	192
8.3.3.5 Intercorrelation of Means of the Rating Dimensions, including Choosability, and Factor Analysis of Rating Dimensions .....	193
8.3.3.6 Comparison of Ability and Behavioural Propensity (Low- and High-Choosability) Characteristics on "Trying to Affect Behaviour" .....	194
8.3.4 Discussion.....	195
<b>CHAPTER 9 - PART 1 - EXPERIMENT 3 .....</b>	<b>197</b>
9.1.1 Introduction .....	197
9.1.1.1 Description of Experiment.....	198
9.1.2 Method.....	199
9.1.2.1 Subjects .....	199
9.1.2.2 Procedure .....	199
9.1.3 Results .....	200
9.1.3.1 Comparison of Experimental and Control Groups on Time 3 (Time Spent on "Word Search").....	200
9.1.3.2 Comparison of Groups on Time 2 (Time Spent on "Maze").....	200
9.1.3.3 Comparison of Groups on Times 1 ("Alien Blaster") and 4 ("Zombies").....	201
9.1.3.4 Comparison of Experimental and Control Groups on their Ratings of the Games .....	201
9.1.3.5 Within Experimental Group Comparisons.....	204
9.1.3.6 Correlational Analysis of Times and the Ratings of the Games (Experimental and Control Groups Combined).....	205
9.1.3.7 Comparison of Schematics and Aschematics on their Ratings of the Games .....	207
9.1.3.8 Relationships between Schematism/Self-Construction and the Experimental Variables.....	209
9.1.3.9 Regression Analyses .....	211
9.1.3.10 Self-Consciousness Scoring.....	214
9.1.4 Discussion.....	214
<b>CHAPTER 9 - PART 2 - EXPERIMENT 7 .....</b>	<b>216</b>
9.2.1 Introduction .....	216
9.2.1.1 Description of Experiment.....	216
9.2.2 Method.....	218
9.2.2.1 Subjects .....	218
9.2.2.2 Procedure .....	218
9.2.3 Results .....	219
9.2.3.1 Numbers in Groups.....	219

9.2.3.2 Relationships between Self-Construction Score and Experimental Variables.....	220
9.2.3.3 Relationship Between Prior Self-Concept of Persistence and Persistence Behaviour.....	220
9.2.3.4 Comparison of Groups on Time Spent on Task 2.....	221
9.2.3.5 Comparison of Groups on Time Spent on Task 3.....	221
9.2.3.6 Comparison of Groups on Time Spent on Task 4.....	222
9.2.3.7 Comparison of Groups on Task Ratings.....	223
9.2.4 Discussion.....	255
<b>CHAPTER 10 - PART 1 - DEVELOPMENT OF THE SELF-CONSTRUCTION QUESTIONNAIRE .....</b>	<b>257</b>
10.1.1 General Introduction.....	257
10.1.2 Development of Questionnaire: Stage 1 .....	259
10.1.2.1 Introductory Remarks .....	259
10.1.2.2 Analysis of the Self-Concept Questionnaire.....	259
10.1.3 Development of Questionnaire: Stage 2.....	263
10.1.3.1 Introductory Remarks .....	263
10.1.3.2 The Questionnaire.....	264
10.1.3.3 Analyses of Self-Concept Questionnaire (Version 2).....	265
10.1.4 Development of Questionnaire: Stage 3.....	276
10.1.4.1 Introductory Remarks .....	276
10.1.4.2 Self-Construction Scores .....	277
10.1.4.3 Factor Analysis of "Self-Description" Variables.....	277
10.1.4.4 Interpretation of Factor Analyses.....	281
10.1.5 Acquiescence or Response Set .....	281
10.1.6 Discussion.....	282
<b>CHAPTER 10 - PART 2 - EXPERIMENT 5 .....</b>	<b>285</b>
10.2.1 Introduction .....	285
10.2.2 Method.....	288
10.2.2.1 Subjects.....	288
10.2.2.2 Statements.....	288
10.2.2.3 Procedure .....	289
10.2.3 Results .....	289
10.2.3.1 Relationship between Self-Construction (Schematism) and Reaction Times .....	289
10.2.3.2 Correlations After Removal of Extreme Scores .....	292
10.2.3.3 Social Desirability Responding.....	292
10.2.3.4 Comparison of Average Time To Decide "True" or "False" .....	293
10.2.3.5 Comparison of Average Reaction Times to Various Items and Item Categories .....	293
10.2.3.6 Correlations With Experimental Variables (Person Perception Study).....	295
10.2.3.7 Factor Analysis of Items.....	295
10.2.4 Discussion .....	296
<b>CHAPTER 11 - PART 1 - DEVELOPMENT OF A PRAISE CLASSIFICATION SYSTEM AND QUESTIONNAIRE .....</b>	<b>301</b>
11.1.1 Aim of study.....	301
11.1.2 Respondents and Procedure.....	301
11.1.3 The Preliminary Questionnaire.....	301
11.1.4 Results .....	301
11.1.4.1 Content-Analysis of Questionnaires .....	302
11.1.4.2 Praise for Behaviours.....	304
11.1.4.3 Varieties of Praise.....	304
11.1.4.4 Further Analysis of Preliminary Data.....	305
11.1.4.5 Further Preliminary Work.....	306
11.1.4.6 The Parent Praise Questionnaire.....	307
<b>CHAPTER 11 - PART 2 - PARENT-CHILD PRAISE STUDY .....</b>	<b>308</b>
11.2.1 Aims of study.....	308
11.2.2 Design of Study .....	308
11.2.3 The Piers-Harris Children's Self-Concept Scale.....	308

11.2.4 Procedure.....	310
11.2.4.1 Sampling .....	310
11.2.5 Results and Discussion.....	311
11.2.5.1 Description of Sample.....	311
11.2.5.2 Main Comparison: Situations and Locutions.....	311
11.2.5.2.1 Comparison of Means of Individual Praise Types and Total Praise Scores by Situation and Year.....	312
11.2.5.3 Correlational Analysis: Praising Locutions and Self- Concept Scores.....	316
11.2.5.4 Correlational Analysis: Likelihood of Behaviour and Specific Locutions (Within Situation) .....	319
11.2.5.5 Correlational Analyses: Agreement between Parents and Children.....	321
11.2.5.6 Correlational Analysis: Year 3 and Year 7 Likelihood Ratings .....	322
11.2.5.7 Comparison of Parents' and Children's Likelihood Ratings .....	323
11.2.5.8 Gender Comparisons.....	325
11.2.5.9 Comparison of Years 3 and 7: Likelihood of Behaviour.....	325
11.2.5.10 Comparison of Years 3 and 7: Time Spent with Children.....	325
11.2.5.11 Correlation of Time Spent with Children and Use of Praise.....	325
11.2.5.12 Praise Patterns .....	326
11.2.5.13 Additional Praising Locutions .....	327
11.2.6 A Parent Praise Questionnaire/Reinforcement History Questionnaire Study.....	327
<b>CHAPTER 11 - PART 3 - PARENT-CHILD FOLLOW-UP STUDY .....</b>	<b>329</b>
11.3.1 Introduction .....	329
11.3.2 Procedure.....	331
11.3.3 Results and Discussion.....	331
11.3.3.1 Reliability of Parent Praise Questionnaire.....	331
11.3.3.2 Means and Standard Deviations of MPAS Variables.....	331
11.3.3.3 Correlation between Use of Specific Types of Praise and MPAS Variables .....	332
11.3.3.4 Correlations between Total Praise Score at Time 1 and Total Praise Score at Time 2 and MPAS Variables.....	334
11.3.3.5 Correlations between Total Praise by Situation and MPAS Variables at Times 1 and 2.....	334
11.3.3.6 Correlations between Self-Concept Variables and MPAS Variables .....	335
<b>CHAPTER 11 - PART 4 - PRAISE PREFERENCE STUDY .....</b>	<b>336</b>
11.4.1 Introduction .....	336
11.4.2 Instrument.....	337
11.4.3 Procedure.....	337
11.4.4 Results .....	337
11.4.4.1 Description of Sample.....	337
11.4.4.2 Overall Comparison of Situations and Locutions.....	338
11.4.4.3 Analyses of Locutions.....	339
11.4.4.4 Oneway Analyses of Locutions .....	340
11.4.4.5 Comparison of Males and Females.....	343
11.4.4.6 Comparison of Relative Likelihood of Use of Praising Locutions and Relative Liking for Them.....	343
11.4.4.7 Comparison of the Highest Ranking Locutions in Each Group .....	344
11.4.5 General Discussion.....	345
<b>CHAPTER 12 .....</b>	<b>349</b>
12.1 Summary of Results: Preliminary Remarks .....	349
12.1.1 Summary of Studies by Initial Hypotheses.....	349
12.1.2 Additional Results.....	354
12.2 Conceptual and Methodological Issues.....	355
12.2.1 Introductory Remarks .....	355

12.2.2 Experimental Design and Strategy.....	356
12.2.2.1 Nature of Tasks.....	357
12.2.2.2 Number of Deliveries of the Manipulation.....	357
12.2.2.3 Written versus Verbal Praise.....	358
12.2.2.4 Equating Locutions.....	358
12.2.2.4.1 Attributional Praise - Should it be a Trait?.....	359
12.2.2.5 Activation of the "Causal Self" by Specific Locutions.....	360
12.2.2.5.1 Attitude-to-Behaviour Process Model.....	361
12.2.2.6 Availability of Subjects with Specific Characteristics.....	362
12.2.2.7 What to Measure (1).....	362
12.2.2.8 What to Measure (2).....	363
12.2.3 Measuring Schemas.....	364
12.2.3.1 Is there a Schema "Theory"?.....	365
12.2.4 Implications of "Schematism"/"Self-Construction".....	366
12.2.5 The Role of Affect - a Neglected Issue.....	367
12.2.5.1 Can Cognitive and Motivational Theories of Self-Agency be Reconciled?.....	370
12.3 Future directions: Extension of Empirical Work.....	375
APPENDICES.....	378
APPENDIX 1 (Study 1).....	379
Appendix 1.1	
Experimental Tasks for Study 1.....	379
Appendix 1.2	
Instructions to Judges.....	381
Appendix 1.3	
Adapted Reinforcement History Questionnaire.....	382
Appendix 1.4	
Causal Dimension Scale.....	389
Appendix 1.5	
Correlations between Experimental Variables and Questionnaire Variables.....	392
Appendix 1.6	
Causal Dimension Scale Variables Correlated with Reinforcement History Questionnaire Variables.....	395
APPENDIX 2 (Experiments 2 and 3).....	396
Appendix 2.1	
Questionnaire on Attitude to Computers.....	396
Appendix 2.2	
Experiments 2 and 3 - General Instructions.....	397
Appendix 2.3	
Cloze Task Story.....	398
Appendix 2.4	
Games' Rating Scales.....	398
APPENDIX 3.1 (Experiment 4).....	400
Appendix 3.1.1	
Preliminary Questionnaire.....	400
Appendix 3.1.2	
Person Perception Questionnaire (1).....	401
Appendix 3.1.3	
Person Perception Questionnaire (2).....	403
Appendix 3.1.4	
Judgment Task for Selection of Statements.....	405
Appendix 3.1.5	
Experiment 4 - General Instructions.....	406
Appendix 3.1.6.1	
Intelligence Ranking Task.....	407
Appendix 3.1.6.2	
Artistic Talent Ranking Task.....	407
Appendix 3.1.7	
Person Judgment Task.....	408



Appendix 3.1.8	
Self-Rating Task .....	410
APPENDIX 3.2 (Experiment 8) .....	411
Appendix 3.2.1	
Judges' Tasks.....	411
Appendix 3.2.2	
Person Perception Study - General Instructions .....	413
Appendix 3.2.3	
Task for First Two Phases.....	414
Appendix 3.2.4	
Person Judgment Task .....	415
APPENDIX 4.1 (Experiment 6) .....	417
Appendix 4.1.1	
Initial Letter (Creativity) to Potential Subjects (Including Experimental Tasks).....	417
Appendix 4.1.2	
Subsequent Letter (Creativity) to Subjects (Including Experimental Tasks).....	419
Appendix 4.1.3	
Initial Letter (Persistence) to Potential Subjects.....	420
Appendix 4.1.4	
Subsequent Letter (Persistence) to Subjects.....	421
APPENDIX 4.2 (Behaviour Rating Study) .....	423
Appendix 4.2	
Behaviour Rating Questionnaire.....	423
APPENDIX 4.3 (Characteristics Rating Study) .....	426
Appendix 4.3	
Characteristics Rating Questionnaire.....	426
APPENDIX 5 (Experiment 7) .....	430
Appendix 5.1	
General Instructions - Cognitive Style Study .....	430
Appendix 5.2	
Bogus Cognitive Style Questionnaire.....	432
Appendix 5.3	
Task Rating Scales.....	435
APPENDIX 6 (Self-Concept Studies) .....	436
Appendix 6.1	
Self-Concept Questionnaire (preliminary version).....	436
Appendix 6.2	
Self-Concept Questionnaire (Version 2).....	438
Appendix 6.3	
Self-Construction Questionnaire (third version of Self-Concept Questionnaire).....	440
Appendix 6.4	
Self-Consciousness Scale.....	442
Appendix 6.5	
Self-Monitoring Scale.....	443
APPENDIX 7 (Parent-Child Studies).....	445
Appendix 7.1	
Free-Response Praise Questionnaire for Parents.....	445
Appendix 7.2	
Content Analysis - Specific Behaviour.....	445
Appendix 7.3	
Preliminary Questionnaire Analysis - Significant Relationships.....	446
Appendix 7.4	
Second Preliminary Questionnaire .....	449
Appendix 7.5	
Parent Praise Questionnaire.....	450
Appendix 7.6	
Child Version of Parent Praise Questionnaire .....	456

Appendix 7.7	Results of McQuitty Linkage Analyses.....	460
Appendix 7.8	Instructions for Parent Praise Questionnaire, Retrospective Version for Tertiary Students .....	461
Appendix 7.9	Parent Praise Questionnaire/ Reinforcement History Questionnaire Study.....	462
Appendix 7.10	Development of Maryland Parent Attitude Survey - Description of Parent "Types" .....	462
Appendix 7.11	Praise Preference Questionnaire .....	463
Appendix 7.12	Means and Standard Deviations of Scores on the MPAS - Pumroy's Results.....	466
Appendix 7.13	Results of Multi-factor Analyses to Determine Age and Gender Effects of Preference Ratings - Locution by Locution Analyses and Tables of Means.....	466
REFERENCES .....		475

## LIST OF TABLES

Table 5.1: Results of analysis of variance comparing groups on average of time spent on Consequences and Matrix tasks .....	100
Table 5.2: Means and standard deviations, by group, of the average of the time spent on Consequences and Matrix task.....	100
Table 5.3: Results of analysis of variance comparing groups on time spent on Consequences task.....	101
Table 5.4: Means and standard deviations, by group, of time spent on Consequences task.....	101
Table 5.5: Results of analysis of variance comparing groups on time spent on Matrix task.....	102
Table 5.6: Means and standard deviations, by group, of time spent on Matrix task .....	102
Table 5.7: Means and standard deviations, by group, of number of consequences produced .....	103
Table 5.8: Means and standard deviations, by group, of number of matrices attempted .....	103
Table 5.9: Average number of correct matrix solutions, by group.....	104
Table 5.10: Results of analysis of variance comparing groups on their ratings of the experimenter's judgment of their persistence .....	105
Table 5.11: Means and standard deviations, by group, of subjects' ratings of their perception of the experimenter's judgment of their persistence.....	105
Table 5.12: Proportions, by group, of subjects who felt unable to make a rating of their perception of the experimenter's judgment of their persistence.....	106
Table 5.13: Means and standard deviations, by group, of subjects' rated judgment of whether the experimenter expected them to do well.....	106
Table 5.14: Proportions, by group, of subjects who felt unable to make a rating about the experimenter's expectations.....	107
Table 5.15: Means and standard deviations, by group, of self-ratings of persistence.....	107
Table 5.16: Causal Dimension Scale - Means and standard deviations of good and bad outcomes by situation type .....	112
Table 6.1: Means and standard deviations, by group, of time spent playing Game 3 (Word Search).....	121
Table 6.2: Results of analysis of variance comparing groups on time spent playing Game 3 (Word Search).....	122
Table 6.3: Means and standard deviations, by group, of time spent playing Game 2 (Maze).....	122
Table 6.4: Means and standard deviations, by group, of time spent playing Game 4 (Zombies).....	123
Table 6.5: Means and standard deviations, by group, of time spent on Game 1 (Alien Blaster) .....	123
Table 6.6: Results of repeated measures analysis of variance - games effect .....	124
Table 6.7: Results of repeated measures analysis of variance - rating scales effect.....	124
Table 6.8: Results of repeated measures analysis of variance - interaction between games and rating scales .....	124
Table 6.9: Results of analysis of variance comparing groups on ratings of Game 3 (Word Search) "I felt tense while playing this game" .....	125
Table 6.10: Results of analysis of variance comparing groups on ratings of Game 3 (Word Search) "Other students would try hard while playing this game".....	125
Table 6.11: Results of analysis of variance comparing groups on ratings of Game 3 (Word Search) "It would take most students a little while to work out the best way of playing this game".....	126
Table 6.12: Means and standard deviations, by group, of ratings of Game 3 (Word Search) "It would take most students a little while to work out the best way of playing this game" .....	127
Table 6.13: Results of analysis of variance comparing groups on their ratings of Game 3 (Word Search) "It took me a little while to work out the best way of playing this game" .....	127

Table 6.14: Means and standard deviations, by group, of ratings of Game 3 (Word Search) "It took me a little while to work out the best way of playing this game" .....	127
Table 6.15: Results of analysis of variance comparing groups on their ratings of Game 2 (Maze) "I felt tense while playing this game" .....	128
Table 6.16: Means and standard deviations, by group, of ratings of Game 2 (Maze) "I felt tense while playing this game" .....	128
Table 6.17: Results of analysis of variance comparing groups on their ratings of Game 2 (Maze) "I enjoyed playing this game" .....	130
Table 6.18: Means and standard deviations, by group, of ratings of Game 2 (Maze) "I enjoyed playing this game" .....	130
Table 6.19: Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I thought I would do well while playing this game" .....	131
Table 6.20: Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I felt tense while playing this game" .....	131
Table 6.21: Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I would like to play this game for recreation" .....	133
Table 6.22: Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I played this game well" .....	134
Table 6.23: Means and standard deviations, by group, of ratings of Game 4 (Zombies) "I played this game well" .....	134
Table 6.24: Results of analysis of variance comparing groups on their ratings of Game 1 (Alien Blaster) "I wanted to keep playing this game" .....	134
Table 6.25: Means and standard deviations, by group, of ratings of Game 1 (Alien Blaster) "I wanted to keep playing this game" .....	135
Table 6.26: Results of analysis of variance comparing groups on their ratings of Game 1 (Alien Blaster) "I only felt like playing this game for a short time" .....	135
Table 6.27: Means and standard deviations, by group, of ratings of Game 1 (Alien Blaster) "I only felt like playing this game for a short time" .....	135
Table 6.28: Results of analysis of variance comparing groups on their ratings of Game 1 (Alien Blaster) "Other students would try hard while playing this game" .....	136
Table 6.29: Means and standard deviations, by group, of ratings of Game 1 (Alien Blaster) "Other students would try hard while playing this game" .....	136
Table 7.1.1: Numbers of subjects run under each condition, Experiment 4.....	147
Table 7.1.2: Means and standard deviations, over all groups, of number of judgments made in each category.....	148
Table 7.1.3: Results of analysis of variance comparing groups on their ratings of the desirability of artistic talent .....	148
Table 7.1.4: Means and standard deviations, by group, of ratings of the desirability of artistic talent.....	149
Table 7.1.5: Results of analysis of variance comparing groups on Self-Construction scores .....	149
Table 7.1.6: Means and standard deviations, by group, of Self-Construction and Schematism scores.....	150
Table 7.1.7: Correlations between self-variables and confidence in rankings of artistic talent, after video-only and audio-only presentations.....	151
Table 7.1.8: Correlations between self-variables and confidence in rankings of intelligence, after video-only and audio-only presentations.....	151
Table 7.1.9: Correlations between Self-Construction, Schematism, and Self-Monitoring, and selected experimental variables .....	152
Table 7.1.10: Number of judgments made in each category by subjects above and below the mean Self-Construction score .....	153
Table 7.1.11: Number of judgments made in each category by subjects above and below the mean Schematism score .....	153
Table 7.1.12: Results of t-test comparing subjects above and below the mean Self-Construction score on overall mean confidence.....	153
Table 7.1.13: Results of t-test comparing subjects above and below the mean Schematism score on overall mean confidence.....	154
Table 7.2.1: Mean confidence ratings on "good" items.....	160

Table 7.2.2: Mean confidence ratings on "bad" items.....	160
Table 7.2.3: Mean confidence ratings on "neutral" items.....	161
Table 7.2.4: Mean confidence ratings on all items.....	161
Table 7.2.5: Experiment 4 - Mean confidence scores for judgments in artistic category .....	162
Table 7.2.6: Experiment 4 - Mean confidence scores for judgments in intelligence category .....	163
Table 7.2.7: Experiment 4 - Mean confidence scores for judgments in temperament category .....	163
Table 7.2.8: Experiment 4 - Mean confidence scores for judgments across all categories.....	163
Table 8.1.1: Means and standard deviations, by group, of the number of interpretations produced in response to the Picture Interpretation task.....	170
Table 8.1.2: Means and standard deviations, by group, of the degree of agreement with the statement about the Picture Interpretation task "I found this task difficult" .....	170
Table 8.1.3: Means and standard deviations (in minutes), by group, of estimates of how long was spent on the Picture Interpretation task.....	170
Table 8.1.4: Means and standard deviations, by group, of number of consequences produced in response to the Consequences task .....	171
Table 8.1.5: Results of analysis of variance comparing groups on their ratings of the Consequences task "I enjoyed doing this task" .....	172
Table 8.1.6: Means and standard deviations, by group, of ratings of the Consequences task "I think that other students would try hard at this task" .....	172
Table 8.1.7: Results of analysis of variance comparing groups on their ratings of the Consequences task "I think that other students would try hard at this task" .....	173
Table 8.1.8: Means and standard deviations, by group, of ratings of Consequences task "I didn't feel like spending much time on this task".....	173
Table 8.1.9: Results of analysis of variance comparing groups on their ratings of the Consequences task "I didn't feel like spending much time on this task".....	173
Table 8.1.10: Results of analysis of variance comparing groups on their ratings of the Consequences task "I would like to do other similar tasks sometimes for recreation" .....	174
Table 8.1.11: Results of analysis of variance comparing groups on their ratings of the Consequences task "I did well at this task" .....	174
Table 8.1.12: Equalized group N's - Results of analysis of variance comparing groups on their ratings of the Consequences task "I think that other students would find this task boring" .....	176
Table 8.1.13: Equalized group N's - Results of analysis of variance comparing groups on their ratings of the Consequences task "I think that other students would enjoy doing this task" .....	176
Table 8.1.14: Intercorrelations of task variables - Picture Interpretation task compared to Consequences task.....	178
Table 8.1.15: Results of factor analysis of task rating variables, Consequences task.....	178
Table 8.1.16: Loadings of Consequences task rating items on factors.....	179
Table 8.2.1: Means and standard deviations of individual items in the Behaviour Rating Questionnaire .....	183
Table 8.2.2: Means of items comprising the ability/behaviour and health/non-health groups .....	184
Table 8.2.3: Results of t-test comparing means of individual items "Be a good judge...." and "Look for the good ...." .....	185
Table 8.2.4: Results of t-test comparing means of individual items "Accurately rank a group of people according to their artistic talent" and "Look for the good...." .....	185
Table 8.2.5: Results of t-test comparing means of individual items "Make confident judgments about a range of characteristics...." and "Look for the good...." .....	185
Table 8.2.6: Results of t-test comparing means of individual items "Be creative...." and "Persist at a new problem...." .....	186

Table 8.2.7: Results of t-test comparing means of individual items "Be creative...." and "Persist at a tricky problem...." .....	186
Table 8.3.1: Means and standard deviations for all characteristics on every dimension.....	189
Table 8.3.2: Matrix of intercorrelations between the five rating dimensions for "persistent" .....	190
Table 8.3.3: Matrix of intercorrelations between the five rating dimensions for "creative" .....	190
Table 8.3.4: Matrix of intercorrelations between the five rating dimensions for "looks for the good...." .....	191
Table 8.3.5: Matrix of intercorrelations between the five rating dimensions for "artistic perceptive" .....	191
Table 8.3.6: Matrix of intercorrelations between the five rating dimensions for "perceptive" .....	191
Table 8.3.7: Matrix of intercorrelations between the five rating dimensions for "kind" .....	192
Table 8.3.8: Matrix of intercorrelations for the five rating dimensions for "intelligent" .....	192
Table 8.3.9: Matrix of intercorrelations for the five rating dimensions for "neat and tidy" .....	192
Table 8.3.10: Means and standard deviations of comparison items from Behaviour Rating Questionnaire study .....	193
Table 8.3.11: Matrix of intercorrelations between the means for the five rating dimensions (Characteristics Rating Questionnaire study) and choosability (Behaviour Rating Questionnaire study).....	193
Table 8.3.12: Results of factor analysis of means of the six rating dimensions.....	194
Table 9.1.1: Means and standard deviations, by group, of time spent on Game 3, "Word Search" .....	200
Table 9.1.2: Means and standard deviations, by group, of time spent on Game 2, "Maze" .....	200
Table 9.1.3: Means and standard deviations, by group, of time spent on Game 1, "Alien Blaster".....	201
Table 9.1.4: Means and standard deviations, by group, of time spent on Game 4, "Zombies" .....	201
Table 9.1.5: Results of t-test comparing groups on their ratings of Game 2, "Maze", "I thought I would do well while playing this game" .....	202
Table 9.1.6: Results of t-test comparing groups on their ratings of Game 2, "Maze", "It was important to me that I play this game well" .....	202
Table 9.1.7: Results of t-test comparing groups on their ratings of Game 2, "Maze", "I cared very much how well I played this game" .....	202
Table 9.1.8: Results of t-test comparing groups on their ratings of Game 2, "Maze", "I played this game well" .....	202
Table 9.1.9: Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I would like to play this game for recreation" .....	203
Table 9.1.10: Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I only felt like playing this game for a short time" .....	203
Table 9.1.11: Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I enjoyed playing this game" .....	203
Table 9.1.12: Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I wanted to keep playing this game" .....	203
Table 9.1.13: Results of t-test comparing groups on their ratings of Game 1, "Alien Blaster", "I played this game well" .....	204
Table 9.1.14: Results of t-test comparing groups on their ratings of Game 1, "Alien Blaster", "Other students would be bored by this game" .....	204
Table 9.1.15: Results of t-test comparing subjects who were and were not schematic on "I am persistent" on time spent playing Game 1, "Alien Blaster" .....	205
Table 9.1.16: Results of t-test comparing subjects who were and were not schematic on "I find computer games quite addictive" on time spent playing Game 2, "Maze" .....	205

Table 9.1.17: Results of t-test comparing subjects who were and were not schematic on "If I get involved in a task I like to stick at it until it's finished" on time spent playing Game 1, "Alien Blaster".....	205
Table 9.1.18: Correlations between task-rating variables, Game 3, "Word Search", and time spent playing that game .....	206
Table 9.1.19: Correlations between task-rating variables, Game 4, "Zombies", and time spent playing that game .....	207
Table 9.1.20: Correlations, within the experimental group, between Schematism/Self-Construction and time spent on each game.....	209
Table 9.1.21: Correlations, across groups, between Schematism/Self-Construction and time spent on each game .....	209
Table 9.1.22: Correlations between Schematism/Self-Construction and games' ratings across games.....	210
Table 9.1.23: Results of regression analysis to predict time spent on Game 1, "Alien Blaster", showing beta weights .....	212
Table 9.1.24: Results of regression analysis to predict time spent on Game 2, "Maze", showing beta weights .....	212
Table 9.1.25: Results of regression analysis to predict time spent on Game 3, "Word Search", showing beta weights .....	213
Table 9.1.26: Results of regression analysis to predict time spent on Game 4, "Zombies", showing beta weights .....	213
Table 9.2.1: Numbers in groups by Characteristic and Construct.....	220
Table 9.2.2: Numbers in groups by Characteristic, Construct and Condition.....	220
Table 9.2.3: Time spent on Task 1, by group .....	221
Table 9.2.4: Mean time spent on Task 1, by Condition and Characteristic.....	221
Table 9.2.5: Time spent on Task 2, by group .....	221
Table 9.2.6: Combined group means for the interaction between Characteristic and Construct, time spent on Task 3 .....	222
Table 9.2.7: Time spent on Task 3, by group .....	222
Table 9.2.8: Results of analysis of variance, time spent on Task 3.....	222
Table 9.2.9: Time spent on Task 4, by group .....	223
Table 9.2.10: Means and standard deviations, by group, Task 1, "I thought I would do well at this task".....	223
Table 9.2.11: Results of analysis of variance, Task 1, "I thought I would do well at this task" .....	224
Table 9.2.12: Combined group means, interaction between Characteristic and Condition, Task 1, "Other students would try hard while doing this task" .....	224
Table 9.2.13: Combined group means, interaction between Characteristic and Condition, Task 1, "Other students would try hard while doing this task" .....	224
Table 9.2.14: Means and standard deviations, by group, Task 1, "Other students would try hard while doing this task" .....	225
Table 9.2.15: Results of analysis of variance, Task 1, "Other students would try hard while doing this task" .....	225
Table 9.2.16: Means and standard deviations, by group, Task 1, "I only felt like doing this task for a short time" .....	226
Table 9.2.17: Results of analysis of variance, Task 1, "I only felt like doing this task for a short time".....	226
Table 9.2.18: Means and standard deviations, by group, Task 1, "I enjoyed doing this task" .....	227
Table 9.2.19: Results of analysis of variance, Task 1, "I enjoyed doing this task" .....	227
Table 9.2.20: Means and standard deviations, by group, Task 1, "I tried hard while doing this task" .....	227
Table 9.2.21: Results of analysis of variance, Task 1, "I tried hard while doing this task" .....	228
Table 9.2.22: Means and standard deviations, by group, Task 1, "I did well at this task" .....	228
Table 9.2.23: Results of analysis of variance, Task 1, "I did well at this task" .....	229
Table 9.2.24: Combined group means, interaction between Characteristic and Condition, Task 1, "I wanted to keep doing doing this task" .....	229

Table 9.2.25: Means and standard deviations, by group, Task 1, "I wanted to keep doing this task" .....	229
Table 9.2.26: Results of analysis of variance, Task 1, "I wanted to keep doing this task" .....	230
Table 9.2.27: Means and standard deviations, by group, Task 1, "It took me a little while to work out the best way of doing this task" .....	230
Table 9.2.28: Results of analysis of variance, Task 1, "It took me a little while to work out the best way of doing this task" .....	231
Table 9.2.29: Combined group means, interaction between Characteristic and Condition, Task 2, "Other students would try hard while doing this task" .....	231
Table 9.2.30: Means and standard deviations, by group, Task 2, "Other students would try hard while doing this task" .....	232
Table 9.2.31: Results of analysis of variance, Task 2, "Other students would try hard while doing this task" .....	232
Table 9.2.32: Means and standard deviations, by group, Task 2, "I tried hard while doing this task" .....	232
Table 9.2.33: Results of analysis of variance, Task 2, "I tried hard while doing this task" .....	233
Table 9.2.34: Combined group means, interaction between Construct and Condition, Task 2, "I did well at this task" .....	233
Table 9.2.35: Means and standard deviations, by group, Task 2, "I did well at this task" .....	233
Table 9.2.36: Results of analysis of variance, Task 2, "I did well at this task" .....	234
Table 9.2.37: Combined group means, interaction between Construct and Condition, Task 2, "It took me a little while to work out the best was of doing this task" .....	234
Table 9.2.38: Means and standard deviations, by group, Task 2, " It took me a little while to work out the best way of doing this task" .....	234
Table 9.2.39: Results of analysis of variance, Task 2, " It took me a little while to work out the best way of doing this task" .....	235
Table 9.2.40: Combined group means, interaction between Construct and Condition, Task 3, "Other students would enjoy doing this task" .....	235
Table 9.2.41: Means and standard deviations, by group, Task 3, "Other students would enjoy doing this task" .....	236
Table 9.2.42: Results of analysis of variance, Task 3, "Other students would enjoy doing this task" .....	236
Table 9.2.43: Combined group means, interaction between Construct and Condition, Task 3, "I would sometimes like to do tasks similar to this one for recreation" .....	236
Table 9.2.44: Means and standard deviations, by group, Task 3, "I would sometimes like to do tasks similar to this one for recreation" .....	237
Table 9.2.45: Results of analysis of variance, Task 3, "I would sometimes like to do tasks similar to this one for recreation" .....	237
Table 9.2.46: Combined group means, interaction between Construct and Condition, Task 3, "Other students would try hard while doing this task" .....	238
Table 9.2.47: Means and standard deviations, by group, Task 3, "Other students would try hard while doing this task" .....	238
Table 9.2.48: Results of analysis of variance, Task 3, "Other students would try hard while doing this task" .....	238
Table 9.2.49: Combined group means, interaction between Construct and Condition, Task 3, "This task was interesting" .....	239
Table 9.2.50: Combined group means, interaction between Characteristic and Condition, Task 3, "This task was interesting" .....	239
Table 9.2.51: Means and standard deviations, by group, Task 3, "This task was interesting" .....	239
Table 9.2.52: Results of analysis of variance, Task 3, "This task was interesting" .....	239
Table 9.2.53: Means and standard deviations, by group, Task 3, "I enjoyed doing this task" .....	240
Table 9.2.54: Results of analysis of variance, Task 3, "I enjoyed doing this task" .....	240



Table 9.2.55: Combined group means, interaction between Characteristic and Construct, Task 4, "Other students would try hard while doing this task".....	240
Table 9.2.56: Means and standard deviations, by group, Task 4, "Other students would try hard while doing this task" .....	241
Table 9.2.57: Results of analysis of variance, Task 4, "Other students would try hard while doing this task" .....	241
Table 9.2.58: Combined group means, interaction between Construct and Condition, Task 2, "I did well at this task".....	241
Table 9.2.59: Means and standard deviations, by group, Task 4, "I did well at this task" .....	242
Table 9.2.60: Results of analysis of variance, Task 4, "I did well at this task" .....	242
Table 9.2.61: Factor analysis of composite task rating scores - factor intercorrelation matrix.....	243
Table 9.2.62: Factor analysis of composite task rating scores - eigenvalues and percent of variance of each factor after a varimax rotation.....	243
Table 9.2.63: Factor analysis of composite task rating scores - items in each factor and factor loadings.....	244
Table 9.2.64: Combined group means, interaction between Characteristic and Condition, factor scores, Doing Well factor.....	244
Table 9.2.65: Combined group means, interaction between Characteristic and Condition, composite task rating scores, "I only felt like doing this task for a short time" .....	245
Table 9.2.66: Means and standard deviations, by group, composite task rating scores, "I only felt like doing this task for a short time" .....	245
Table 9.2.67: Results of analysis of variance, composite task rating scores, "I only felt like doing this task for a short time" .....	245
Table 9.2.68: Means and standard deviations, by group, composite task rating scores, "I tried hard while doing this task" .....	246
Table 9.2.69: Results of analysis of variance, composite task rating scores, "I tried hard while doing this task" .....	246
Table 9.2.70: Pearson r correlations between times and task ratings, by group .....	247
Table 9.2.71: Factor analysis of task ratings (experimental group) - factor intercorrelation matrix.....	249
Table 9.2.72: Factor analysis of task ratings (experimental group) - eigenvalues and percent of variance of each factor after a varimax rotation.....	249
Table 9.2.73: Factor analysis of task ratings (experimental group) - items in each factor and factor loadings .....	250
Table 9.2.74: Factor analysis of task ratings (control group) - factor intercorrelation matrix.....	250
Table 9.2.75: Factor analysis of task ratings (control group) - eigenvalues and percent of variance of each factor after a varimax rotation.....	251
Table 9.2.76: Factor analysis of task ratings (control group) - items in each factor and factor loadings.....	251
Table 10.1.1: Final statistics for factor analysis of 50-item Self-Concept Questionnaire after varimax rotation.....	260
Table 10.1.2: Items in the original Self-Concept Questionnaire on which there was at least a 44/80 yes/no or no/yes split.....	261
Table 10.1.3: Schematic/constructual frequencies - items not represented in Table 10.1.2 which produced at least a 44/80 yes/no or no/yes split .....	261
Table 10.1.4: Final statistics for factor analysis of a subset of items from the Self-Concept Questionnaire after varimax rotation.....	262
Table 10.1.5.1: Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 1 to 6 .....	266
Table 10.1.5.2: Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 7 to 12 .....	267

Table 10.1.5.3: Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 13 to 18 .....	268
Table 10.1.5.4: Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 19 to 25 .....	269
Table 10.1.6: Self-Concept Questionnaire (Version 2) - Means, standard deviations, maxima and minima of Self-Construction and Schematism scores .....	269
Table 10.1.7: Self-Concept Questionnaire (Version 2) - Item-by-item correlations between self-rating and importance rating .....	270
Table 10.1.8: Self-Concept Questionnaire (Version 2) - Factor intercorrelation matrix of "self-description" variables.....	272
Table 10.1.9: Self-Concept Questionnaire (Version 2) - Final statistics after factor analysis, followed by varimax rotation, of "self-description" variables.....	273
Table 10.1.10: Self-Concept Questionnaire (Version 2) - Factor intercorrelation matrix, self-rating variables.....	273
Table 10.1.11: Self-Concept Questionnaire (Version 2) - Final statistics after factor analysis, followed by varimax rotation, of self-rating variables .....	274
Table 10.1.12: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I have never felt confident that I could judge a person's intelligence" .....	274
Table 10.1.13: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "If someone criticizes me, I get upset" .....	274
Table 10.1.14: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I don't think I would win a prize for creativity or originality" .....	275
Table 10.1.15: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I have a very logical mind" .....	275
Table 10.1.16: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I'm bad at mechanical tasks" .....	275
Table 10.1.17: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "Computers are a mystery to me" .....	275
Table 10.1.18: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I am a fairly sophisticated person" .....	275
Table 10.1.19: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I am not at all competent when it comes to mechanical devices" .....	276
Table 10.1.21: Factor intercorrelation matrix after principal components factor analysis, followed by oblique rotation, of the 22 self-description items of the Self-Construction Questionnaire .....	278
Table 10.1.22: Self-Construction Questionnaire - Final statistics after factor analysis, followed by varimax rotation, of self-description variables.....	278
Table 10.1.23: Factor loadings of 0.3 or higher on items of the Self-Construction Questionnaire.....	279
Table 10.1.24: Factor loadings of 0.3 or higher on self-descriptive items of the Self-Concept Questionnaire (Version 2) .....	280
Table 10.2.1: Correlations between Self-Construction, Schematism, and Self-Monitoring, and selected subsets of stimulus items used in reaction-time task.....	290
Table 10.2.2: Item-by-item correlations between reaction times and Self-Construction scores, and reaction times and Schematism scores.....	291
Table 10.2.3: Means and standard deviations of factual items, personal construction items, social desirability items, and non-social desirability items .....	293
Table 10.2.4: Means and standard deviations of reaction times, item by item, showing reaction time rank.....	294

Table 10.2.5: Correlations between reaction times to subcategories of items in Experiment 5 and number of judgments made in the artistic talent, intelligence and temperament categories in Experiment 4.....	295
Table 10.2.6: Final statistics after factor analysis, followed by varimax rotation, of responses to items.....	296
Table 11.1.1: Content categories of parent praising locutions.....	303
Table 11.1.2: Behaviours for which children receive praise and percentages of respondents mentioning them.....	304
Table 11.1.3: Means and standard deviations of the scores for the use of different praising locutions, specific incident compared to general score. ....	305
Table 11.2.1: Results of repeated measures analysis of variance, Year 3, Situation.....	311
Table 11.2.2: Results of repeated measures analysis of variance, Year 3, Locution.....	311
Table 11.2.3: Results of repeated measures analysis of variance, Year 3, Situation by Locution.....	312
Table 11.2.4: Results of repeated measures analysis of variance, Year 7, Situation.....	312
Table 11.2.5: Results of repeated measures analysis of variance, Year 7, Locution.....	312
Table 11.2.6: Results of repeated measures analysis of variance, Year 7, Situation by Locution.....	312
Table 11.2.7.1: Results of repeated measures analysis of variance comparing groups on their reported use of praise - summary table .....	313
Table 11.2.7.2: Praise likelihood scores by locution type and age level .....	314
Table 11.2.8: Correlations between likelihood of praising locutions and Piers-Harris Children's Self-Concept subscales.....	317
Table 11.2.9: Correlations between means of likelihood ratings for use of locutions, Years 3 and 7 parents' data .....	323
Table 11.3.1: Means and standard deviations of MPAS subscales.....	332
Table 11.3.2: Correlations between MPAS subscales at completions 1 and 2, and likelihood of use of different types of praise.....	333
Table 11.3.3: Correlations between Total Praise by Situation and Protective/Rejecting Subscales.....	335
Table 11.4.1: Year 5 - Results of repeated measures analysis of variance, locution.....	338
Table 11.4.2: Year 5 - Results of repeated measures analysis of variance, interaction between situation and locution.....	338
Table 11.4.3: Year 7 - Results of repeated measures analysis of variance, locution.....	339
Table 11.4.4: Year 7 - Results of repeated measures analysis of variance, interaction between situation and locution.....	339
Table 11.4.5: Year 10 - Results of repeated measures analysis of variance, locution.....	339
Table 11.4.6: Year 10 - Results of repeated measures analysis of variance, situation by locution.....	339
Table 11.4.7: Means and standard deviations of preference ratings by group .....	341
Table 11.4.8: Results of analyses of variance for each locution separately .....	342
Table 11.4.9: Ranked liking means, by group, and ranked likelihood ratings from tertiary students.....	343
Table 11.4.10: Correlations, by group, between rankings of tertiary students' likelihood of use of praise and preferences .....	344

## LIST OF FIGURES

Figure 6.1: Times spent by all groups on Games 1 to 4 .....	121
Figure 6.2: Graph of means, by group, of ratings of Game 3 (Word Search) "I felt tense while playing this game" .....	125
Figure 6.3: Graph of means, by group, of ratings of Game 3 (Word Search) "Other students would try hard while playing this game" .....	126
Figure 6.4: Graph of means, by group, of ratings of Game 4 (Zombies) "I thought I would do well while playing this game" .....	131
Figure 6.5: Graph of means, by group, of ratings of Game 4 (Zombies) "I felt tense while playing this game" .....	132
Figure 6.6: Graph of means, by group, of ratings of Game 4 (Zombies) "I would like to play this game for recreation" .....	133
Figure 8.1.1: Graph of means, by group, of ratings of the Consequences task "I enjoyed doing this task" .....	172
Figure 8.1.2: Graph of means, by group, of ratings of Consequences task "I would like to do other similar tasks sometimes for recreation" .....	174
Figure 8.1.3: Graph of means, by group, of ratings of Consequences task "I did well at this task" .....	175
Figure 8.1.4: Equalized group N's - Graph of means, by group, of ratings of Consequences task "I think that other students would find this task boring" .....	176
Figure 8.1.5: Equalized group N's - Graph of means, by group, of ratings of Consequences task "I think that other students would enjoy doing this task" .....	177
Figure 11.2.1: Praise scores by situation and age level .....	313
Figure 11.2.2: Graph of praise likelihood scores by locution type and age level.....	314
Figure 11.2.3.1: Praise locution type by year, situation 1, tidying own room.....	315
Figure 11.2.3.2: Praise locution type by year, situation 2, bringing home a good school report .....	315
Figure 11.2.3.3: Praise locution type by year, situation 3, practising and/or improving at a skilled activity .....	316
Figure 11.2.3.4: Praise locution type by year, situation 4, saving to buy a gift.....	316
Figure 11.2.4: Graph of means of parents' and children's ratings for likelihood of use of different praising locutions .....	324
Figure 11.2.5: Graph of total likelihood of praise by situation, parents' and children's estimates.....	324

## ABSTRACT

*were* / After an examination of several areas of psychological literature, a series of propositions ~~was~~ developed which integrated ~~key~~ findings in a variety of fields of general and social psychology. These propositions related to the effects of praise on behaviour, and to the interaction of the ~~praise~~ with the praisee's prior self-concept in the praised domain. Other individual difference variables were also considered. The thesis is a report of the work conducted to investigate these propositions. Both experimental and questionnaire studies were undertaken.

It was hypothesized that different praising locutions might have differential effects on behaviour. A preliminary system for classifying such locutions was devised, and the effects of some specific praise types were examined. Those studied were the attribution of a characteristic, the expression of an expectation about future behaviour, social comparison, and "social reinforcement". The attribution of a characteristic, termed "attributional praise", was examined in greatest detail, and it was hypothesized that there might be differential effects of such praise depending on the nature of the attributed characteristic.

Self-schema theory (e.g., Markus, 1977) was reviewed thoroughly and different techniques of measuring self schematism were used in an attempt to establish whether the prior status of the praisee in the praised domain interacted with the praise to affect behaviour. Some incidental findings relating to the possibility of the existence of an individual difference variable, termed "self-construction", were noted. This was described, broadly, as the tendency to think about oneself and to know one's personal characteristics.

In a further aspect of the work a series of questionnaire studies in which parents and their children acted as respondents was undertaken. Data were collected relating to the likelihood of use, within this relationship, of the varieties of praise, as was information about children's preferences for the different types of praise.

Overall the results of the experimental studies implied that if there are differential effects of varieties of praise they are likely to be weak and difficult to demonstrate in terms of the main dependent behaviour. Some important findings did emerge however. Consistent with the results of many studies investigating Deci's (e.g., 1975) cognitive evaluation theory (e.g., Ryan, Mims and Koestner, 1984), different kinds of praise were found to affect the ratings of tasks differently. It was concluded that any differential effects of varieties of praise were most likely to be evident in the affective reactions of the recipients of the praise.

**AUTHOR'S STATEMENT**

This thesis contains no material which has been accepted for the award of any other degree or diploma at any University. To the best of my knowledge and belief it contains no material previously published or written by any other person except where due reference is made in the text. If accepted for the award of the degree I consent to the thesis being made available for photocopying and loan.

Catherine Delin

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## **PREFACE**

The thesis which is developed and the investigation of which is reported in the following chapters resulted from a consideration of a number of apparently unrelated areas of psychology. There were, however, broadly two main strands of the research which were investigated concurrently. These were the questions of whether different praising locutions affected behaviour differently, and whether there was an interaction between praise and the self-concept of the praisee. These two areas may be seen to converge conceptually and this view is clarified in the literature chapters. It was, however, necessary to conduct research into the two aspects of the thesis separately. This, and the fact that some work was required to determine the pitfalls of various experimental paradigms, meant that the presentation of the empirical work contained in the thesis would not be straightforward.

Inevitably many decisions had to be made as to how best to present the sequence of studies. It was decided to group studies conceptually and thematically rather than to present them chronologically. This has resulted in a certain amount of forwards-referring in the thesis, although it is hoped that sufficient explanation is given at the point of introduction of a new theme to enable the reader to follow the unfolding of the work. However, to assist in this process a chronological summary of the studies, which may be used for reference, is presented below.

### **Chronological Summary of Studies**

#### **Experimental Studies**

##### ***Pilot Study 1***

**Aim (1):** To compare the effects of four conditions, attribution of a characteristic, expectation about behaviour, social reinforcement, and control, on persistence behaviour (time spent on tasks), and thereby to determine a research direction.

**Result (1):** Attribution and expectation groups did not differ, but were different from social reinforcement and control groups which were not different from each other.

**Aim (2):** To examine any interactions between the effect of attribution and two individual difference variables, reinforcement history and attributional style.

**Result (2):** No clear pattern of interactions.

##### ***Experiment 2***

**Aim (1):** To compare the effects of an attribution and an expectation manipulation on behaviour (time spent on computer games and ratings of the games).

**Result (1):** Task-rating behaviour was affected differently by the two locutionary forms.

**Aim (2):** To investigate two competing hypotheses proposed to account for the mediation of observed effects, a self-presentation hypothesis and a consistency hypothesis.

**Result (2):** Detailed predictions by group not confirmed and it was not possible to distinguish between the two hypotheses.



### ***Experiment 3***

**Aim:** To investigate the effects of an attributional praise manipulation on the behaviour of subjects with and without a prior self-concept of the attributed characteristic (persistence, operationalized as time spent on computer games; ratings of the games also measured).

**Result:** Differences between groups in their ratings of the games, and the emergence of a possible "cognitive style" variable ultimately termed "Self-Construction", the tendency to be aware of one's personal self-descriptive characteristics. This variable might have complicated any simple interaction between praise and holding a schema in one specific domain.

### ***Experiment 4***

**Aim (1):** To compare the effects on behaviour (number of person judgments made in a specific category) of five different praising locutions, attribution, expectation, social comparison, social reinforcement and feedback (and a sixth, control, condition).

**Result (1):** No significant effects on the main dependent measure were found, but post-hoc analyses revealed that the attribution group, when compared with all other groups combined, was significantly less confident about judgments made in the category in which the attribution was made, the artistic talent category.

**Aim (2):** To compare the performance of subjects with and without a prior self-concept in the area in question, being perceptive about the artistic talent of another person.

**Result (2):** No significant effect, but further confirmation that the "cognitive style" variable warranted further investigation.

### ***Experiment 5***

**Aim:** To determine whether there was a negative relationship between the putative "cognitive style" variable and reaction times to make decisions as to whether statements were self-descriptive.

**Result:** Hypothesis confirmed in all categories of self-statements, thereby strengthening the argument for the existence of such a "cognitive style" variable.

### ***Experiment 6***

**Aim:** To compare the effects on the same behaviour (number of items produced and task ratings) of the attribution of two different characteristics, one of which could be regarded as an ability (creative), the other implying a behavioural tendency (persistent).

**Result:** Interactions found between characteristic attributed and task ratings.

### ***Experiment 7***

**Aim (1):** To investigate any interaction between prior self-concept in a given domain (persistence at tricky problems) and the effect of attributional praise in that domain (measures were time spent on tasks and ratings of the tasks).

Result (1): Interactions between prior self-concept and praise clearly demonstrated in task ratings.

Aim (2): To attempt to replicate relationships between the "cognitive style" variable and task ratings.

Result (2): Relationships not replicated.

### *Experiment 8*

Aim: To compare the effects on behaviour (number of person judgments made in a specific category) of four different praising locutions, attribution, expectation, social comparison and social reinforcement (and a control locution).

Result: No significant effect on the main dependent measure was found, but planned comparisons on various ratings of confidence in the accuracy of one's judgment showed significant differences between the attribution group and all others combined, between attribution and expectation versus the rest, and between social comparison and the other praise groups.

## Questionnaire Studies

### Self-Concept Sequence

#### *Stage 1*

Aim (1): To devise a plausible vehicle for specific self-concept items which would be used to select subjects for Experiment 3. "Self-description" criterion used for being schematic/constructual on individual items.

Result (1): 50-item questionnaire developed (Self-Concept Questionnaire (Version 1)) including items relevant to the lives of subject population.

Aim (2) (post-hoc): To establish psychometric properties of the questionnaire.

Result (2): 19 independent factors accounted for 69.4 % of variance. Skewing on some items.

#### *Stage 2*

Aim (1): To refine Self-Concept Questionnaire (Version 1), into a preliminary measure of a possible cognitive style variable, subsequently termed Self-Construction, the tendency or willingness to think about oneself and to know one's characteristics.

Result (1): 25-item Self-Concept Questionnaire (Version 2) developed which excluded highly skewed or correlated items from Self-Concept Questionnaire (Version 1). Factor analysis revealed nine independent factors accounting for 60.1 % of the variance.

Aim (2): To compare Markus' (1977) extremeness and importance criteria for selection of schematics with self-description criterion.

Result (2): Markus' criteria resulted in the selection of fewer individuals, but generally the same individuals were selected. Markus' reported high correlations between extremeness and importance only reliably found with positive items. Good correlation between total

scale score derived using Markus' criteria and total score (Self-Construction) using self-description criterion.

Aim (3): To select subjects, those who were schematic/constructual on certain items, for Experiment 4.

Result (3): Relevant items incorporated in questionnaire, but there were inadequate numbers for original study design. Items subsequently eliminated as being specific to that study only.

### ***Stage 3***

Aim (1): To examine the psychometric properties of the final preliminary version of the questionnaire, the Self-Construction Questionnaire, devised to measure the putative cognitive style variable.

Result (1): Factor analysis of 22-item version showed nine factors accounting for 62.1 % of the variance. Several independent lines of evidence adduced to show that acquiescence or response set was unlikely to be a major problem.

Aim (2): To select subjects, those who were/were not constructual in relation to persistence at a frustrating task, for participation in Experiment 7.

Result (2): The relevant item in the questionnaire resulted in a distribution of scores such that all cells in the analysis of variance design could be filled.

## **Behaviour/Characteristics Rating Sequence**

### ***Behaviour Rating Questionnaire Study***

Aim: To devise and administer a questionnaire incorporating a variety of behaviours and person characteristics which could be rated according to whether doing the behaviour or displaying the characteristic was simply a matter of wanting to enough, that is, a matter of choice. To distinguish between items divided a priori into an "ability" group and a "behavioural propensity" group.

Result: A significant difference was found between the ability and the behavioural propensity group such that the latter group was perceived as being more a matter of choice, of motivation or wanting to enough, than the former. Some differences between health and non-health items also found.

### ***Characteristics Rating Questionnaire Study***

Aim: To determine whether a specific group of characteristics differed on dimensions other than the "choosability" dimension referred to above.

Result: From the dimensions examined, self-rating, importance to the self-concept, desirability, pleased if attributed, and trying to affect behaviour, two independent factors were extracted, an importance factor and a choosability factor. It was concluded that both variables must be considered in planning attributional praise studies.

## **Parent-Child Sequence**

### ***Pilot study (1)***

Aim: To develop a classification system for the variety of praising locutions.

Result: A 16-category classification system was conceptually ordered on the basis of empirically determined locutions (subsequent work led to the addition of three further categories, resulting in a preliminary 19-category system).

### ***Pilot study (2)***

Aim: To develop a questionnaire suitable for determining whether parents use different praising locutions differentially.

Result: A four situations by 16 locutions questionnaire was developed. Respondents were to estimate the likelihood of use of each locution in each situation.

### ***Parent-child study (1)***

Aim (1): To determine whether different praising locutions are used differently by parents according to the situation and the age of their child.

Result (1): Different locutions were reported as being used differently according to the age of the child and the context in which praise occurs.

Aim (2): To compare parent- and child-estimated likelihoods of use of different forms of praise.

Result (2): Parents and children did not necessarily agree overall on the use of locutions. Agreement between individual parent-child pairs varied between the two situations examined. Parents estimated the use of all types of praise as being greater than did children.

Aim (3): To determine whether there are any relationships between the use of different locutions and children's self-concepts.

Result (3): Some relationships found.

### ***Parent-child study (2)***

Aim (1): To investigate the relationship between parents' self-reported use of praise and their attitudes towards child-rearing.

Result (1): Clear correlational relationships between self-reported use of praise and parental attitudes as measured by the Maryland Parent Attitude Survey.

Aim (2): To examine reliability of the Parent Praise Questionnaire.

Result (2): Moderate reliability was found, but it was concluded that the instrument is sufficiently reactive to make the concept of reliability inapplicable.

***Parent-child study (3)***

**Aim:** To determine whether there are differences in preferences for different types of praise according to situation, age and gender.

**Result:** Clear preferences which did not change with age found. Negligible gender differences. No situation effects.

These studies are elaborated in the following chapters. In Chapters 1 to 4 a review of the literature which forms a foundation for the thesis is presented. Experiments 1 to 8 are described in Chapters 5 to 9, with the Behaviour Rating and Characteristics Rating Studies being covered in Chapter 8. All work relating to the Self-Concept sequence of studies is set out in Chapter 10, while Chapter 11 contains details of the Parent-Child sequence of studies. Finally, Chapter 12 is a general overview and discussion of the studies and of their implications.

**Note:** As a final point relating to the presentation, it is hoped that the reader will be tolerant of the differences in style of tables across chapters. The researcher constructed these on an Apple Macintosh over time as results emerged, and software for this computer evolved over the four years of the project.



## CHAPTER 1

This is the first of three chapters in which the argument underlying the research sequence in this project is set out. Since the broad conceptual structure framing this sequence resulted in part from a consideration of a number of apparently diverse theoretical perspectives, the argument should be seen as being developed in full over these preliminary chapters. It should also be noted that, because of the number of areas covered in these chapters and the integrative nature of the argument which is developed, the literature reviews relating to each area are representative rather than exhaustive. The related series of propositions forming the thesis is then set out at the conclusion of Chapter 3. In brief, it will be argued that the effects of praise on behaviour might be better predicted and understood after a detailed consideration both of locutionary content and of the characteristics of the recipient of the praise.

The primary aim of Chapter 1 is to review very briefly the literature relating to praise and social reinforcement. Solutions to a number of questions concerned with the effectiveness of positive verbal statements in controlling behaviour have been sought over several decades. Of this work examples only will be presented, but it will be suggested that such locutions do not necessarily control behaviour in a simple and predictable fashion.

While the first section of the chapter is a very broad overview of the empirical issues which have been investigated, the second section covers some attempts which have been made in recent years to develop a coherent conceptual framework which would facilitate the introduction of greater subtlety into the study of such empirical issues.

In the third section research generated within the framework of Deci's (1971, 1975) cognitive evaluation theory is discussed. Implications of findings from this research, and of the model itself, are considered within the context of the broader framework supporting the thesis to be developed here. It is concluded that an expanded conception of the mechanisms by which praise and social reinforcement might operate is appropriate in view of the recent research and theorizing in this area.

In subsequent chapters some apparently unrelated areas within social psychology are considered within the context of such an expanded conception. It is argued that a synthesis of findings and models generated within the areas of "labelling", "expectancy effects", "the self", and "attitude-behaviour relationships" might shape a structure for understanding when positive verbal statements are likely to be effective. In addition, such a synthesis might point to some of the mechanisms mediating observed effects.

### 1.1 The Effects of Praise and "Social Reinforcement" - A Brief Overview

It is a common belief, held by teachers, parents, the lay person, and probably psychologists as a group, that praise, encouragement, compliments, all sorts of positive verbal statements, can affect the behaviour of both children and adults. At first normal

children in a classroom setting were the focus of interest. Although over the decades this focus has enlarged to include other subject groups in other settings, there is still a great deal of interest in that original group.

The earliest work on such statements was seemingly inextricably tied in with work on "blame" and "reproof", negative verbal statements. It was only later, as attention to study design increased, that these variables were separated out. According to Kennedy and Willcutt (1964), the history of interest in the effects of praise and blame on performance goes back to the 1890's when "verbal encouragement" and knowledge of results were studied to determine their effect on the output of children. In 1916 Gilchrist reported that the topic of the effectiveness of praise and blame in affecting pupils' work had been a recurring theme.

Hurlock (1924) was the first to study, in a systematic way, the effects of "verbal incentives" on school children. She concluded that praise and reproof were equivalent and better than practice alone. Older children responded more to both, but girls did so less than boys. Warden and Cohen (1931) concluded that "verbal praise" and "reproof" were not as effective as was supposed, and that any change in the regular classroom routine worked as an incentive.

While in their 1932 review Davis and Ballard concluded that praise was better than reproof, Brenner's (1934) conclusion was that different results were due to varying experimental conditions. Further studies have continued to produce conflicting results about the very question of the effectiveness of positive verbal statements in controlling behaviour.

Throughout the years a variety of specific questions have concerned psychologists working in this area. Issues which have been investigated include the effectiveness of praise or verbal incentives in comparison to other rewards, the amount of praise needed for optimum effect, the interaction of praise with task characteristics, and the effects of "indirect" praise (praising a nearby child, for example). In addition, some consideration has been given to possible mechanisms by which positive verbal statements might operate. However, given the number of dimensions along which praising stimuli can vary, some of the research questions seem overly simplistic when investigated without careful consideration of how such stimuli might be equated.

In relation to the issue of the effectiveness of verbal statements when compared to other rewards, Abel (1936) evaluated the effects of various incentives on the learning of a finger-maze by 9-10 year old children. There were four conditions, (a) a promise of 25 cents at the end of the experiment, (b) a cent for each successful trial, (c) verbal praise for each successful trial, and (4) no reward. The elimination of the most errors in the least number of trials occurred in this order - promise of 25 cents, a cent for each success, praise for success, and lastly, the control condition. Some decades later Fischer (1963) also found that praise may not be as successful as other rewards in modifying behaviour. He

investigated various reinforcement conditions in the acquisition of sharing responses by preschool children of 3-4 years of age. A verbal praise group ("that's nice, that's good") was compared to a bubble-gum group. The material reward proved to be more effective in a marble-sharing task.

Others have found no large differences between praise and material rewards. Terrell and Kennedy (1957) compared five different conditions to determine which minimized trials to criterion in a button-pushing response to the larger of a series of pairs of 3-dimensional objects. Children of 4-5 years and 8-9 years participated under one of the following conditions, (a) candy, (b) praise, (c) reproof when incorrect, (d) beans to trade for candy, and (e) control condition. When compared to the other conditions, the candy group took approximately half as many trials to criterion as did its nearest competitor, the praise group. It could be noted, however, that in at least one later study it was found that very young children are more controlled by social reinforcement than material rewards (Zigler and Balla, 1972).

Nickell and Travers (1963) compared different reinforcers across four age levels, from pre-kindergarten to year 9. They found that tangible reinforcers were more effective than verbal reinforcers at all age levels, but verbal reinforcement was significantly more effective among the youngest females. Using "good" and "that's good" as their reinforcements, they concluded that "perhaps the most general finding of the study is the extraordinarily poor effect which approval has as a reinforcer compared with physical reinforcement, except for girls at the pre-kindergarten level" (*ibid.*, p. 745).

Despite such conclusions, researchers have continued to seek answers to questions following from the basic assumption that certain kinds of verbal stimuli will positively affect behaviour. For example, some have considered that there is likely to be an optimal amount of praise relating to the most desirable outcome. In investigating the question of how much praise is best, Soar (1972) and Brophy and Evertson (1976) concluded that too much or too little praise were ineffective in promoting cognitive achievement. In earlier work, Landau and Gewirtz (1967) found that the effectiveness of social reinforcement varied with the treatment the child had experienced just prior to that reinforcement. Effectiveness was an inverse function of the number of times the reinforcer was received in treatment preceding the testing (this was seen as evidence for a "social drive theory", referred to below).

Given that there may be some optimal amount of praise which relates to behaviour control, it is significant that in classroom situations there can be inequality in the disposition of teacher praise of which teachers may be unaware. In 1970 Brophy and Good, as did Yarrow, Waxler and Scott (1971), concluded that teachers give more academic praise to high expectation students than to low ones even when the opportunities for receipt of praise are equal for the two groups. Elaborating on this work, Brophy and Good (1974) found that certain individuals in a classroom get more praise and more criticism because they initiate more interactions themselves. Eder (1983) studied a first grade class over an entire academic



year to determine processes which might determine students' academic self-concepts (as measured by responses in an interview to such statements as "I'm proud of my school work" and "Someone always has to tell me what to do"). Teacher praise was found to relate inversely to group level in the classroom, with students in the highest group receiving the least praise (the words considered praise were "good", "very good" and "beautiful").

The characteristics of the task in which the recipient of praise is engaged have also been considered as likely to affect the outcome of praise. Nelson and Hay (1976) looked at the effects of contingent and random verbal feedback on the rate and accuracy of arithmetic responses, a task familiar to the subjects. They examined the effects of three conditions - presentation of positive statements, of negative statements, and of a combination of positive and negative statements. Varying types of feedback in this way did not produce differential effects on either rate or accuracy measures. Random feedback led to a higher rate of responding than did contingent feedback with no loss of accuracy (positive statements ranged from "good", "fine" to "you really know how to do this"). The authors explain their results by suggesting that the familiarity of the task meant that differential information regarding accuracy which might have been conveyed in the locutions was relatively unimportant.

Others have examined the effects of "indirect praise", or praising a nearby student who is behaving in the required manner. Boyd, Keilbaugh and Axelrod (1981) found that this form of praise is sometimes effective, but direct praise is better if the aim is to maintain large improvements in behaviour. They suggest that indirect praise might be best regarded as useful for initiating behaviour change.

In an attempt to understand when and how "social reinforcement" is likely to operate, researchers have advanced at least three major theoretical models which have generated research. The first of these is the social drive model: subjects are seen as being affected by deprivation of social reinforcement, and, equally, able to be satiated on sufficient social reinforcement. On the valence model the particular nature of the contacts with the experimenter are seen to influence the effectiveness of social reinforcement. Finally, according to the "informational" view, the relevant dimension to consider is the cue value of social reinforcement as seen by the subject. That is, the subject's attention to the experimenter's behaviour is considered important in that it enables the subject to make the link between her/his own behaviour and the praise; some locutions in some contexts will presumably fulfill this role better than others. Waters (1980) has reviewed the studies relating to these models, concluding that there is a need to clarify the efficacy of the three positions. She also suggests, however, that the importance of the informational value of social reinforcement may depend on the novelty of the situation; it may be more important in a laboratory than in a familiar classroom, for example. On the other hand, when subjects are performing well-learned skills the social reinforcement can serve as a motivating stimulus

rather than as information in the sense used by Cairns and his colleagues (see, for example, Panda, 1971).

Even a fairly cursory examination of the literature, such as that presented, suggests that positive verbal statements are by no means always effective in controlling behaviour. In discussing their study, referred to above, Nickell and Travers (1963) suggested that their result ran counter to the conception of "reinforcement" provided by most textbooks. Subsequent researchers in the area have drawn similar conclusions. Thus, Cairns (1970) concluded that social reinforcement effects in the laboratory are weak, inconsistent and ephemeral, while Dunkin and Biddle (1974) present a review which provides support for the positive effects of teacher praise providing it is delivered "effectively" and is specific to the behaviour. However, if the finding of Anderson, Evertson and Brophy (1979), who looked at first grade reading groups, is general, then the observation that praise is not as effective as might be supposed is not surprising. They found that teachers are specific on only 5% of praising occasions. It is also noteworthy that of 15 rewards rated for desirability and effectiveness by students and teachers, praise and encouragement received a rank of ten by the students (Ware, 1978). Further to the problem of the apparent weak effectiveness of verbal rewards, Harris and Kapche (1978) suggest that non-contingency is a very common problem in behaviour modification attempts in the classroom.

Despite these points, when Waters (1980) distinguished between laboratory and naturalistic studies, and thoroughly reviewed the literature in both areas, she concluded that naturalistic studies present "a rather more encouraging picture of the efficacy of social reinforcement than studies conducted in the laboratory setting" (p. 233). However, it might be noted that in the naturalistic setting there are many variables which are not able to be controlled but which may be contributing to any apparent observed efficacy of "social reinforcement".

## **1.2 Praise and "Social Reinforcement" - Definitions and Conceptual Models**

In the previous section no attempt was made to define terms. Thus the terms "praise" and "social reinforcement" were used indiscriminately, and interchangeably with such terms as "positive verbal statements" and "verbal incentives". In this section the problem of terminology will be considered. Some (e.g., Brophy, 1981; Kanouse, Gumpert, and Canavan-Gumpert, 1981) have undertaken the task of conceptual clarification, and their analyses are described, together with some studies which illustrate the outcomes of attempting to discriminate among varieties of praise.

To date there has been a good deal of conceptual confusion in relation to the meaning of "praise" and "social reinforcement" with the terms generally being treated as if they were equivalent. Thus, for example, Parton and Ross (1967) defined social reinforcement as "verbal praise statements by a physically present human" (p. 323). However, as was implied in the overview of the literature presented in the previous section, praise is by no

means always "reinforcing", that is, it does not always lead to an increased probability of the re-occurrence of the immediately prior response.

Some researchers have implicitly or explicitly distinguished between praise and social reinforcement. On the basis of the work of O'Leary and O'Leary (1977) Brophy (1981) concludes that to function as a reinforcement praise should

- (1) be contingent on the performance of the behaviour to be reinforced
- (2) specify the particulars of the behaviour being reinforced
- (3) sound sincere, be varied according to the situation, and be credible.

Brophy, in fact, maintains that verbal praise as it is used in most classrooms is not acting as reinforcement at all. He suggests that the fact "that praise can function as a reinforcer does not mean that it always, or even usually, does" (ibid., p. 7). Further, "teacher praise typically is infrequent, noncontingent, global rather than specific, and determined more by students' personal qualities or teachers' perceptions of students' need for praise than by the quality of student conduct or achievement. This makes teacher praise ineffective from the perspective of reinforcement theory" (ibid., p. 8). To this extent, within the context of the classroom, praise is by no means always a subcategory of social reinforcement.

On the basis of a review of a number of studies in which observations in a naturalistic setting were reported Brophy concludes that praise may have any one of the following functions in the classroom:

- (1) praise as the spontaneous expression of surprise or admiration
- (2) praise as balance for criticism or vindication of predictions or expectations
- (3) praise as attempted vicarious reinforcement
- (4) praise as positive guidance or avoidance of criticism
- (5) praise as ice-breaker or peace offering
- (6) praise as student-elicited stroking
- (7) praise as a transition ritual
- (8) praise as a consolation prize or encouragement (from Brophy, 1981, pp. 17-18).

Despite the apparent thoroughness of his analysis, Brophy fails to clarify his terms completely. The use of "encouragement" as apparently synonymous with "consolation prize", for example praising incorrect answers or poor performance, would certainly be disputed by others (e.g., Pety, Kelly and Kafafy, 1984). The meaning of "attempted vicarious reinforcement" is unclear, but the example given of drawing attention to the good behaviour of another student allies it somewhat to "indirect praise". The term "stroking" is esoteric in the context of mainstream experimental psychology.

According to Forness (1973) "praise" is a subcategory of the general category "reinforcement". He sets out a "reinforcement hierarchy", any element of which might reinforce behaviour. Those elements at the lowest level are considered the more "primitive",

but more "powerful", and those at the highest the more "mature", but less "powerful". The hierarchy is as follows:

competence (skills acquisition)

being correct (feedback)

social approval (praise)

.....

contingent activity (Premack principle)

tokens or check marks (exchanged for other reinforcers)

tangibles (trinkets, toys)

edibles (food).

The line separates reinforcers that exist naturally in the world (in the normal classroom, for example), from those which are most likely to exist in contrived contexts such as special classrooms or behaviour training programmes. He concedes that there are difficulties with, and exceptions to, the hierarchy. In the context of the present discussion it seems obvious that the items above the line in the hierarchy potentially cause the greatest difficulty. And, since "social reinforcement" does not appear, perhaps it is to be assumed that "praise" is intended to represent that category.

In relation to "feedback", Kennedy and Willcutt (1964) could find only three studies on praise between 1940 and 1950, although in the decade of the fifties what they consider to be a parallel line of research appeared in the literature viz. investigations using knowledge of results rather than praise or blame as "reinforcement". Haring and Phillips (1972), who worked with children in classroom settings, consider feedback to be a special case of reinforcement; feedback indicates whether performance is appropriate.

A dichotomous classification scheme was suggested by Dinkmeyer and Dreikurs (1963) who, according to Pety, Kelly and Kafafy (1984), were the first to suggest that there may be qualitative differences between various types or classes of verbal reinforcement. Specifically, Dinkmeyer and Dreikurs use the terms subsequently used by Pety et al, "praise" and "encouragement", to identify what they regard as contrasting methods of verbal reinforcement. The former represents an evaluative stance in which the child's behaviour, and possibly even her/his basic worth, are judged, while the latter term implies a relatively non-judgmental locution which is designed to assist the recipient to evaluate her/his own behaviour in relation to personal goals.

The term "praise" has recently been subjected to critical analysis. Kanouse, Gumpert and Canavan-Gumpert (1981) use it to refer to "positive evaluations made by a person of another's products, performances or attributes, where the evaluator presumes the validity of the standards on which the evaluation is based" (p. 98). They also note, however, that

"praiselike utterances persistently refuse to fall into neat classifications for the benefit of social-psychological analysis" (ibid., p.114).

Parenthetically, although these writers tacitly assume that praise is always verbal in form, the human ethologist, Desmond Morris, in his book on gestures, maintains that praise need not be expressed in a verbal form (Morris, Collett, Marsh and O'Shaughnessy, 1979). Using informants from 40 locations he found that a fingertips kiss meant praise to approximately 50% of them. Apparently it can convey any of these messages - beautiful, cute, delicious, divine, excellent, fine, good, great, exquisite, pleasant, pretty, sexy, tasty, o.k., and so on. To some respondents an eyelid pull was praising, as was a teeth-flick to a few.

Skinner (1957), in discussing generalized conditioned reinforcers, makes a parallel observation, saying of "approval", "It is often more difficult to specify its physical dimensions. It may be little more than a nod or a smile on the part of someone who characteristically supplies a variety of reinforcements. Sometimes....it has a verbal form: Right! or Good!...." (p. 54). In the latter case it might then be confounded with Forness' (1973) "feedback". The work on praise undertaken within the scope of this project, however, is confined to specific instances of "verbal praise".

Pursuing their analysis of praise in its verbal forms, Kanouse et al suggest that it is often difficult to distinguish between praise and "other statements that share some but not all of its characteristics" (1981, p. 114). One type of statement to which they draw attention is the expression of positive affect, wherein one person "appreciates" rather than praises the other. Such statements do not impose evaluative standards on either the product or the person responsible for it, but focus on the communicator's response. Locutions of this type are not investigated in their own right in this project and are only of concern insofar as a catalogue of praiselike utterances is attempted (see the work described in Chapter 11).

Another type of positive locution examples of which could certainly be classed as praise, but which is given separate treatment by a number of writers, is that of "compliments". Schlenker (1980) contrasts compliments with flattery which he considers to be a technique of ingratiation. If the actor who is doing the complimenting desires to make a very favourable impression on the complimentee s/he should be seen as sincere and discriminating in the giving of the compliments. S/he should also, according to Schlenker, make her/his compliments in relation to attributes that the target considers attractive and which that target believes s/he might already possess. Finally, compliments should be phrased carefully; then they cannot be misinterpreted by a target with low self-esteem, for example.

Knapp, Hopper and Bell (1985) did a very thorough analysis of the characteristics of "complimenting" stimuli. They asked over 500 people to reflect upon the most recent

compliment they had given and received. Eighty-five percent of the compliments followed one of these formulae:

- (1) Noun phrase/linking verb/adjective e.g., "That shirt looks nice".
- (2) Pronoun/intensifier/verb/noun phrase e.g., "I really like your shoes".
- (3) Pronoun/verb "to be"/adjective/noun phrase e.g., "You are a really lovely woman".

Occasions for compliments proved to be of four kinds:

- (1) Performance - praise recognising skills and abilities (43%).
- (2) Appearance/attire (41%).
- (3) Possessions.
- (4) Personality - for specific qualities, for example (the least frequent but most valued occasion).

That "personality" was the least frequently cited type of compliment while "performance" was relatively common is interesting in view of one important strand of this thesis, that relating to "attributional praise". "Compliments" relating to performance are likely to have different effects on behaviour than those relating to personality, and this issue is elaborated in Chapter 8.

Clearly there are many categories of verbal stimuli which could be considered "praise", and an important implication which can be drawn after considering the definition of Kanouse et al is that most of the studies of "verbal praise" or "social reinforcement" reported in the literature have indeed been using "praise". However, certain locutions commonly used in such studies, while technically praise according to their definition, have, by virtue of their overuse in common parlance, probably lost their praising property (while presumably retaining their reinforcing property). Thus it could be argued that while "good" and "right" (e.g., Cairns, 1970) do serve to socially reinforce or at least to communicate approval, it is doubtful whether there is really any more information regarding the set standard and the value of this product/performance/attribute relative to it than there is in "mm-hmm" (Greenspoon, 1955). Cairns (1967) suggests that the increased effectiveness of "right" that he observed when he accompanied it with instructions as to its meaning in the context of the study may have been due to the fact that common expressions of approval may lose their potency through overuse in everyday life. It therefore seems important to be aware of the characteristics of the locutions used in "verbal reinforcement" studies. According to Fisch and White (1982) who were interested in the effect of verbal reinforcement on school learning, the characteristics of such stimuli which could vary are intensity, frequency, recency and duration, as well as content of statements made by the experimenter.

However, consideration of the content of verbal stimuli has generally been superficial. When researchers base their work on some classification scheme, however rudimentary, stimuli may be selected in a systematic manner. An example is the work of

Madsen, Becker and Thomas (1968) who, when they made a distinction between approval and commendation, chose "good boy" to represent the former category, and "you are studying very hard" the latter.

More usually, researchers have selected stimuli from the general categories of "praise" or "social reinforcement", and many have even failed to report the specific wording used. For example, Draper (1981), who was investigating the differences between boys and girls in their responsiveness to "feedback", used 11 positive and 11 negative locutions but only gives two examples of each, and these were not controlled for length. When the relevant wording was recorded, it frequently emerged that "praise" or "verbal praise" was actually utterances like "that's nice, that's good" (Fischer, 1963) or "good", "you're doing fine" (Oliveau, Agras, Leitenberg, Moore and Wright, 1969). Fischer, Herschberger and Winer (1971), in an investigation of the relationship between past socialization (e.g., punitive home environment) and current responsiveness to "verbal reinforcement", report using such locutions as "very good, (name)" and "your time was really good on that one".

Kanouse et al suggest that different outcomes are likely to result from the use of different kinds of praise, and some researchers have reported results consistent with their assertion. Scheer (1976) found that children engaged on a card-sorting task who were praised for the way they were doing the task performed better than subjects receiving "great". Zigler and Kanzer (1962) found that lower socioeconomic children performed more effectively if reinforced with "good" or "fine" (Forness' "praise") as compared to "right" or "correct" (his "feedback"). McGrade (1968) found that "good, fine" versus "right, correct" versus "great, swell" had differential effects on a discrimination learning task. Cairns and Paris (1971) on the other hand did not find any differential effectiveness between two "social reinforcers" ("right" and "good") and two unknown words ("galat" and "ahwe"). Their subjects were mildly retarded children engaged on a card-sorting task.

Recent papers reporting studies in clinical and other applied contexts have paid some attention to the content variable. For example, Thomas (1976) describes two "experimental analogue" psychotherapy groups, one receiving one word verbal reinforcement for positive self-statements ("mmhmm" or "good"), and the other receiving lengthy "verbal information feedback". Apparently both techniques were effective in improving self-ratings of the self-concept, but the second technique produced the greatest positive change in behaviour in the form of improved social skills.

In addition to choosing the content of a reinforcing stimulus, the issue of accompanying non-verbal expressions is also likely to be important. Thus Leventhal and Fischer (1970) noted a wide variation in amount of smiling, "activation", task-orientation and general pleasantness among their four male experimenters. As Leventhal and Fischer conclude "studies varying both acts and contexts can further illuminate the nature of interpersonal communications which lead to effective performance" (ibid., p. 94). The scope of this project does not allow for any consideration of this area.

Before a systematic investigation of the properties of praise can begin, conceptual clarification is essential. Thus an attempt must be made to create "neat classifications" (Kanouse et al, 1981), not only for praise, but for "social reinforcement", "verbal reinforcement", "approval", "appreciation", and "encouragement". One of the tasks of the present research project was to gain a greater understanding of the conceptual and functional overlap among some of these categories.

A further task undertaken was initially conceptualized as being to distinguish, in terms of behavioural outcome, between "specific" and "general" praise. Kanouse et al argue that specific and general praise will be differentially effective. They adduce some studies to support their assertion that specific praise (also termed "labelled" praise e.g., Bernhardt, Fredericks and Forbach, 1978) is significantly superior to general (or "unlabelled") praise. Examples of the former category are "That's a fine song" (Kanouse et al, 1981) and "Good boy, you put the marble in the correct hole" (Bernhardt et al, 1978), while the latter category may be represented by "My, you play well" and "nice, good". Apart from the fact that illustrative studies used by Kanouse et al are not without flaws (e.g., lack of control for length of utterance), their proposition may be regarded as simplistic, insofar as they have themselves still evaded the task of producing "neat classifications". In any case, as will become clear in a subsequent chapter (Chapter 2), one form of "general" praise, namely "attributional praise", may in fact be rather powerful, not only in maintaining learned behaviours, but also in generating new ones (e.g., Miller, Brickman and Bolen 1975). It is this form of praise which is the topic of much of the research work reported in this thesis.

However, Kanouse et al have contributed significantly to the ongoing debate about positive verbal statements, their effects, and the possible mechanisms mediating those effects. By drawing attributional, and thus cognitive, formulations into their argument, they broaden the scope of the conceptual models currently available. They explicitly postulate that the assumed differential effects of specific and general praise might relate to the different amounts of information available in the two types of locution. In addition, by defining praise as they do, in terms of an implicit or explicit setting of a standard, it becomes more natural to reconsider praise in informational terms.

The thesis described here, and the associated empirical work, were conceived after a review of the evidence suggested that praise and other positive verbal statements do not always operate as social reinforcement, and that there is a dearth of strong attempts to impose order upon the range of locutions which might conceivably be classified as "praise". It grew out of an attempt to reconcile the observations of effectiveness apparent to some researchers, and the limiting conditions of those effects apparent to others. Further empirical and theoretical work which contributed to the formulation of the thesis investigated here is discussed in the next section, and in Chapters 2 and 3.



### **1.3 Praise and Social Reinforcement - Control versus Informational Dimensions**

After an overview of the literature it was concluded that "praise", "verbal praise", "social reinforcement" and related terms need clarification and conceptual definition. It could also be argued that the conceptual stance which has generally been taken has inhibited investigations into the effects of positive verbal statements on behaviour. In this context it will be suggested that the potential for utilizing such mechanisms may have been underestimated due to an unwillingness to broaden the range of explanatory models to incorporate possible cognitive mechanisms.

In the first section of this chapter models which have been advanced to account for the effect of social reinforcement were mentioned (social drive model, valence model and the "informational" view). Presumably any of these models might also apply to the operation of "praise", "encouragement", indeed any positive verbal statements, if the informational value of the locution is not significant to the recipient. However, if Brophy and Kanouse et al are correct in their analyses, it may be that different conceptions are relevant to understanding the operation of certain types of positive locution. Under varied circumstances, different mechanisms might be operative. What is clear, particularly in the light of recent work, is that the relationship between praise (as defined by Kanouse et al) and verbal or social reinforcement, is not simple. Certainly, the meaning to the recipient of the specific locution cannot be disregarded. To the extent that a locution sets off cognitive processes, it is to these that researchers might look to resolve some of the conflicting research findings in the area of "verbal reinforcement".

According to Deci (1975) every "reward" has both an informational and a controlling aspect. However, it could be said that researchers, particularly those of a behaviourist orientation, have to date only been concerned with the "controlling" aspect of verbal rewards. If a narrow perspective which does not incorporate all aspects of the informational value of the stimulus is maintained, full understanding and optimal application is likely to remain elusive. Such a view is supported by Panda and Lynch (1972), who, in summing up their observations on the use of verbal feedback by teachers, comment that "...an important aspect of social reinforcement effect, its informative role, has not been given due consideration" (p. 115).

The position of some behaviourists, who do not consider it necessary to investigate the possible role of such an informational dimension, may be represented by Skinner's view that "...Praise and approval are generally reinforcing because anyone who praises a person or approves what he has done is inclined to reinforce him in other ways" (1971, p. 45). Since he does not consider that cognitive mediation processes have any predictive power, this writer is further able to argue that "the whole field of the processing of information can

be reformulated as changes in the control exerted by stimuli" (1977, p. 7). Using an example of a pigeon which responds to different colours on a disc during a colour generalization experiment, he questions the advantage of postulating "an inner pigeon" which takes in a new colour and compares it with the old, responding after the difference has been thus evaluated. Skinner argues that "because of a known history of reinforcement, different colours control different rates (of responding)" (*ibid.*, p.7).

Researchers and practitioners whose natural inclination is towards a more cognitive position would be unprepared to make an analogy between this approach and any taken to human functioning. Many, including those concerned with the practical application of reinforcement, including verbal reinforcement, have become disillusioned with the current state of both behaviourist and radical behaviourist theory and research. Cullen (1983), for example, suggests that behaviour analysis is often superficial and that functional relationships should be demonstrated and not merely claimed; they are likely to be complex. He believes that the clinician should be sure to determine that assumed reinforcers really are reinforcing and, consistent with a radical behaviourist position, that s/he should take rule-governed behaviour into account - what the client says to her/himself can be a powerful determinant of behaviour. Baldwin and Baldwin (1981) refer to the "stimulus collage" and, in particular, words which can appear in either the internal or external parts of this collage. They believe that such words often play an important role in controlling behaviour, a view which is consistent with current cognitive approaches to behaviour change.

In line with the thrust of the preceding argument, Thoresen and Coates (1978) in asking what it means to be a behaviour therapist claim that "the behavior therapies have provided some powerful techniques and impressive results in treating a variety of difficult human problems" (p. 3), but that now "the walls of various schools are breaking down. Simplistic theories are becoming less tenable" (p. 6).

In a similar vein, Bandura (e.g., 1978 a) has argued that it is futile to seek for the ultimate environmental cause of behaviour. He advances the concept of "reciprocal determinism" which embraces the notion that the one event can be stimulus, response or environmental reinforcer, depending upon where in the sequence of events the analysis begins. According to Bandura "from the social learning perspective, psychological functioning involves a continuous reciprocal interaction between behavioral, cognitive and environmental influences" (1978 a, p. 345).

And, Wicklund and Frey (1981) suggest that the social psychologist's increasing interest in cognitive information-processing explanations of social behaviour is due to a disaffection with the behaviourist account. Consistent with Deci's (e.g., 1975) view, they suggest further that cognitive processes alone, without a motivational component, are insufficient to explain research findings.

If it is true, as Deci (e.g., Deci, 1975; Deci, Nezlek and Steinman, 1981) argues, that every reward, including presumably praise, does have both an informational and a controlling aspect, perhaps it is the case that when "approval" (e.g., "m-hmm", "good", "nice") and other low information positive verbal statements are used, the control aspect will be salient. Further, whether the utterance or locution acts as reinforcement may depend on such factors as those covered by the three models mentioned previously. On the other hand, when the informational content of the locution is more complex, perhaps broader models are required to accommodate the range of outcomes.

Like Deci, Nuttin (1976) believes that rewards and punishments in human response acquisition serve more than one function. He argues that they serve a dual function, emotional and informational, and he compares the two in relation to "closed" and "open" tasks. In a "closed task" in which the individual does not expect to respond in similar circumstances in the future, they serve an emotional function "insofar as they satisfy the motivation the subject has invested in the act" (ibid., p. 251). But in an "open task" situation, the reward can be a signal that the response preceding it will be useful at some future time. "...The open-task concept implies that the stimulus-response unit is integrated into a broader cognitive-dynamic structure (a behavioral project or plan). Such motivational structures are future oriented...The important point, then, is to find out to what extent a specific act is part of a broader behavioral structure or, on the contrary, constitutes an independent unit in itself" (ibid., pp. 253-254). It seems, according to Nuttin, that humans are satisfied not only by the drive-reducing properties of reward objects, but by the information they convey, information about future goals.

In contrast, the importance of the informational value of the reward in Deci's model relates to the subsequent attribution made by the recipient of that reward. Deci (1971) and Deci and Ryan (1980) maintain that the way the individual perceives and attributes causality in relation to her/his own behaviour, will determine future behaviour. According to their theory so-called intrinsically motivated behaviours are not subject to the same operant principles as other behaviours, being rewarding in and of themselves. Intrinsic motivation is defined as "the human need for competent and self-determined interactions with the environment" (Deci and Ryan, 1980, p. 40). They distinguish three motivational subsystems or "sets of attitudes, beliefs, affects and programs for behavior that display conceptual consistency and are organized by motivational processes" (Deci and Ryan, 1980, p. 39). The first of these subsystems is intrinsic motivation, in which there are no rewards separate from the experience of the behaviour and the accompanying affect, and the second is extrinsic motivation in which the motivation is based on primary drives and acquired needs. In this case the reward is clearly separable from the behaviour and its associated affect, and the perceived locus of causality is external. The final subsystem is amotivational; essentially the individual believes that there is no relationship between behaviours and outcomes, and this results in non-activity.

A number of studies which seemed to be at odds with entrenched beliefs about the effects of rewards on the maintenance of behaviour, and which were consistent with Deci's theory, began appearing in the psychological literature in the early seventies. Lepper, Greene and Nisbett (1973) had 3-5 year old children draw with felt-tip pens under one of three conditions - "no award", "expected award", or "unexpected award". One to two weeks later independent observers measured the time spent by the children in playing with the same pens during a free-play period. The amount of time spent by those who expected the "Good Player" award was about half that of children in the other two conditions. In attributional terms subjects could not "discount" the role of the external reward in causing their behaviour. Having attributed their interest in drawing to their desire for that reward, they now concluded that they had no interest in the activity per se, and behaved accordingly. The authors' interpretation of this so-called "overjustification" effect (the reward is an "overly sufficient justification" for the behaviour) is based on Bem's (1972) "self-perception theory". Bem proposes that self-inferences about motivation are made in a similar manner to inferences about others' motivation, by observing behaviour in relation to its context.

In some studies the format of Lepper et al (1973) was followed. This meant using the amount of freely-chosen time spent at the previously rewarded activity as the measure of "intrinsic motivation" or interest. In other studies, researchers simply had subjects rate their enjoyment of the task following the rewarded condition. For example, Calder and Staw (1975) had male undergraduates solve easy jigsaw puzzles, which were either made up of pictures from "Life" or "Playboy", or were identical shapes without the pictures. Conditions were either no payment, or one dollar left beside the last puzzle. When subsequently asked to rate their enjoyment of the task, those who had solved the blank puzzles gave higher ratings when they had received payment, but the opposite was true for those solving the more interesting pictures.

Effects like this do not only hold for rewarded conditions. Lepper and Greene (1975) found that preschool children lost interest in an activity after engaging in it while being monitored by a television camera. Other findings indicate that the phenomena may be even more complex. For example, Pallak, Costomiris, Sroka and Pittman (1982), using a similar method to that of Lepper et al (1973), found an interaction between school rewarding practices and the maintenance of intrinsic interest after a reward. Children attending schools that did not use symbolic rewards for achievement were less likely to draw during the free-play period when given an expected symbolic reward, but more likely to draw when given a verbal reward. Those children who attended schools which did use symbolic rewards apparently perceived such rewards and praise similarly - regardless of type of reward, they were more likely to draw during free-play after the unexpected reward.

When Danner and Lonky (1981) conducted two experiments to examine the relationships between cognitive level, intrinsic motivation and responses to extrinsic rewards and praise, they found an interaction between the individual difference variables.

Subjects were children aged from 4-10 years who chose among "learning centres". After receiving praise, rewards, or no rewards for working at the learning centre at, above, or below their level, intrinsic motivation was tested. Rewards had little effect on intrinsic interest among children whose motivation was initially low, and decreased it among those whose motivation was initially high. Praise (e.g., "That's the best work you've done so far", and "very fine work") had similarly mixed effects. Highly motivated children with an internal locus of control (e.g., Rotter, 1966) increased in intrinsic motivation after praise, while those who were highly motivated but with an external locus of control decreased in intrinsic motivation after praise.

In investigating the effects of the ability to delay gratification, Sarafino, Russo, Barker, Consentino and Titus (1982) rewarded kindergarten children with one or two cents for giving funny endings to riddles. Of the children who were low in the ability to delay gratification, those receiving the higher reward showed less subsequent interest in the task, while the high ability children showed no effect of the reward variation. In another study in which the same task was used, fourth grade children received either weak ("Those endings were as funny as many of the ones other children gave me") or strong ("Those endings were very funny. In fact, they were funnier than the ones most of the other children gave me") praise for providing the endings. Those who received strong praise showed greater subsequent interest in the riddles. In relation to this weak/strong praise differential Sarafino et al say, "since praise tends to have a prominent informational aspect, as opposed to a controlling aspect, increasing the salience of praise enhances the individual's motivation" (ibid., p. 37). When taken together, the results of their studies suggested to the researchers that the processes underlying the effects of reward on intrinsic interest change with development. Initially the process is a "primarily associative one" (e.g., delay of gratification), but this later becomes a more cognitive process.

Certainly the mediation process is likely to be more complex in older subjects. For example, Harackiewicz and Manderlink (1984) investigated the effect on intrinsic interest of importance of the task. They asked their high school student subjects how personally important it was for them to do well at the paper-and-pencil tasks they were doing (finding as many examples as possible of the hidden word "Nina" in a picture, and making words from a matrix of letters). They found that importance was a critical mediator of reward effects, and a determinant of intrinsic motivation. It was itself affected by the experimental variable, positive feedback on performance, and in turn affected subsequent intrinsic motivation. There was also an interaction with achievement motivation as measured by the Achievement Scale of the Personality Research Form.

Gender may be another relevant variable; contradictory differences have been found. Deci (1972) and Deci, Cascio and Krusell (1975) found that verbal praise enhanced males' sense of competence and self-determination which, according to his theory, then enhanced their intrinsic motivation. This was not the case for females. However, Blanck, Reis and

Jackson (1984) challenged this result, arguing that ability to do the Soma puzzle used by Deci might be a gender-linked ability. Using a different task, a word game, which for some reason they considered to be "sex-neutral", they found that females' intrinsic motivation also increased with praise.

Thus a variety of variables have been examined within Deci's paradigm. In the context of the present discussion, the apparent difference in outcome of verbal compared to material rewards is most significant. In an overall review of the area, Furukawa (1982) records the results of 33 studies. Of these, 60 percent support Deci's (1971) original result that extrinsic reward "undermines" intrinsic motivation or interest in the task. This reviewer notes, however, that discrepancies between researchers can occur when material as opposed to verbal rewards are used. The undermining effect is most apparent when material rewards are used, but, and this is consistent with Deci's (1975) cognitive evaluation theory, when praise or positive feedback are used the undermining is less likely to occur (e.g., Anderson, Manoogin and Reznick, 1976; Dollinger and Thelen, 1978). Such verbal rewards, according to Deci, should increase the intrinsic motivation to engage in the activity by enhancing feelings of competence and self-determination. However, Deci and Ryan (1980) themselves note that praise seems to act as an extrinsic reward for some children. Perhaps this occurs in situations in which the controlling aspect is salient, or when the recipient examines the praise for "deservingness" (Kanouse et al, 1981) and concludes that it is not credible.

It should be noted that there have been a number of criticisms of Deci's theory, notably by behaviourists (e.g., Reiss and Sushinsky, 1975) who may, according to Eiser (1980), feel that behaviour modification programmes, and particularly token economies, are threatened. They have proposed alternative explanations for the effects, such as a contrast hypothesis (e.g., Levine, Broderick and Burkart, 1983), according to which a large discrepancy between the standard and the new experience affect behaviour, and a competing response and frustration hypothesis (e.g., Blocker and Edwards, 1982; Reiss and Sushinsky, 1975), according to which subjects are less interested in the target activity when interfering responses such as awareness of the reward occur prior to the termination of the contingencies. Morgan (1982) concludes that none of the models, including the attributional formulation, completely accounts for all the observed phenomena. However, Deci's theory does provide a theoretical model within which to interpret some of the findings to be presented in subsequent chapters.

Ogilvie and Prior (1982), in their critique of the overjustification field, in fact argue that it is likely that reward procedures will carry different messages in different situations and with different populations. They are critical of Deci for assuming that rewards can only carry two messages, viz. informational (relating to feelings of competence and self-determination) or controlling. Deci's use of the term "information" could certainly be broadened with advantage.

It does seem clear that the information gleaned from the praising locution potentially mediates its effects. Kanouse et al argue that undeserved praise will not act as an incentive for behaviour. This assertion will be assessed in more detail in Chapter 2 in the discussion of "attributional praise", labelling, and expectancy effects. Certainly children are likely to interpret praise according to its credibility. Dweck, Davidson, Nelson and Enna (1978) believe that in a school context the meaning of praise will be determined by its base rates of frequency in relation to specific behaviours, its contingency, as well as any specific attribution statements made by the teacher. They stress the potential role of attributions in causing the discounting of teacher praise. Students are obviously aware that teachers tend to praise and criticize low and high expectation students differentially (Meyer, Bachmann, Biermann, Hempelmann, Ploger and Spiller, 1979), so that when they are praised as they see it inappropriately, they may conclude that their performance must be really poor, or that the teacher is being manipulative.

In the Meyer study adults and high school children watched a series of vignettes of praise, neutral feedback and criticism following success and failure. Subjects attributed low ability to individuals praised after success and given neutral feedback after failure. Conversely, they attributed high ability to individuals who received neutral feedback after success and criticism after failure. When asked to imagine that they were the target, they came to the same conclusions. Younger children, however, did not make these interpretations.

Dweck et al (1978) also found that feedback differed between boys and girls, in that for girls the teacher tended to refer to intellectual ability (or lack of it), whereas for boys attributions of lack of effort were made. Boys also received more work-related praise, and this, according to the authors, was a source of their beliefs in their own competence. Although these gender-difference findings have been disputed (Heller and Parsons, 1981), the point made by Dweck et al about the potential effects of the information conveyed in the feedback is important to the thesis presented here. As Clair and Snyder (1979) express it, "(the instructor's assessment and the feedback process) may have effects upon the student that go beyond simply providing information about that student's performance" (p. 56). A primary purpose of this research project, then, was to investigate the hypothesis that different praising locutions have different effects on behaviour. This was seen as prerequisite to investigating attributional or other mechanisms which might account for any such observed differences. The evidence so far reviewed is indicative of such differential effects, and further evidence is presented in Chapter 2.

## CHAPTER 2

In Chapter 1 it was argued that some praising locutions, including "social reinforcement", are not always effective in controlling behaviour, and that an attempt must be made to systematize such locutions before their properties can be fully investigated. It was also suggested that the varieties of praising locution might not be informationally equivalent or interpreted equivalently by their recipients. In Chapter 2 a relevant body of work from the social psychological literature is reviewed and further evidence for the importance of considering the informational content of the praising locution is presented. Thus the groundwork is laid in this chapter for the material on the self-concept which is covered in Chapter 3.

Although undoubtedly the progenitors of studies on "labelling" did not specifically consider that they were investigating the effects of "praise", to attribute a positive characteristic to an individual is certainly to praise her/him in the terms of Kanouse, Gumpert and Canavan-Gumpert (1981). In the present thesis this form of praise is termed "attribution of a characteristic" or "attributional praise".

Where it is necessary to explicate hypothesized mediating mechanisms, passing reference is also made in this chapter to the effects of attributing a negative characteristic to an individual. It should be emphasized that, as was the case in Chapter 1, only a selection from relevant material is presented.

### 2.1 Attribution of a Characteristic and "Labelling" - Effects and Possible Mechanisms

Kanouse et al (1981), in discussing aspects of praise, argue that specific praise, of behaviour, is likely to be more effective than general praise, of person. They contend that the assumed differential effects of specific and general praise relate to the differential amounts of information available in the two types of locution. They propose that "deservingness" of the praise will be a critical variable. Thus, in assessing received praise people search for evidence of its accuracy, and specific and general praise invoke "logically different evidentiary domains" (Kanouse et al, 1981, p. 106). General praise, which incorporates what is being termed here "attributional praise", they assert, can give rise to opportunities for self-criticism. A comparative example that they use is the pair, referred to in Chapter 1, "My, you play well" (general) and "That's a fine song" (specific). The recipient of the former praise has access to memories of occasions on which s/he did not play well and is therefore in a stronger position to dispute the validity of the comment. The latter locution is rooted in one specific achievement and, assuming the recipient trusts the praiser's judgment, it is more likely that s/he will feel able to concur.

It seems, however, that even when attributional praise is denied, it can still affect behaviour. As was argued in Chapter 1 praise does not always, or only, act as "social



reinforcement". With reference to the social psychological literature on "labelling" it seems that praise can apparently also act to initiate and sustain new behaviour. One salient study is that of Miller, Brickman and Bolen (1975), but there are many more which indicate that "general" praise, which does not specify a particular response, can have a powerful effect in controlling the behaviour of adults and children alike. Miller et al worked with classes of ten-year olds, comparing three conditions to determine their relative effectiveness in controlling littering behaviour. In an "attributional (praise)" condition their teacher repeatedly told them how neat and tidy they were ("...I could not help but notice how very clean and orderly your room appeared..."), and in a "persuasion" condition the teacher told them that they should be neat and tidy ("...it is very important that we be neat and orderly..."). A control group received no unusual treatment. The dependent measure was the amount of litter put in the waste-paper basket rather than left on desks or on the floor.

The attribution group was tidier than either of the other groups and maintained this behaviour change to a second assessment two weeks later. While possible mediating mechanisms of this effect will be discussed in more detail in Chapter 3, it could be noted here that the result is consistent with Deci's (1975) analysis set out in the previous chapter. That is, had the teacher merely expressed approval of the students ("good girl/boy") each time they behaved in a neat and tidy manner, it is possible that the outcome would not have been so impressive, since feelings of competence and self-determination would not have been thus increased. The informational content of the praise being salient could well have resulted in the children being "intrinsically motivated" to behave neatly and tidily. Using social reinforcement, on the other hand, could have resulted in the children perceiving the controlling aspect of the locutions as salient. In relation to the analysis of Kanouse et al (1981), it is interesting to note that the positive effect occurred despite the children's initial protestations that they were not neat and tidy.

In a second study, Miller et al looked at math(s) achievement, maths being a "skill" which is likely to consist of a number of sub-behaviours and one which is not necessarily in the child's repertoire. There were six treatment conditions in this study - attribution ability ("you're doing very well"), attribution motivation ("you're trying more in arithmetic"), persuasion motivation ("you should work harder at arithmetic"), reinforcement ("I'm proud of your work") and a control group (no treatment) - and they were more tailored to individuals than had been the case in the initial study. It was found that the attribution of both ability and motivation were more effective than comparable persuasion or control conditions. However, reinforcement was comparatively effective in improving math(s) scores. It could be noted that their "reinforcement" communicated rather more complex information than most reinforcement ("good, right") and perhaps this accounts for its positive effects in the study of Miller et al: conceptual analysis in relation to the nature of the attributed characteristic presented in Chapter 4 and relevant empirical work presented in Chapter 8 indicate that their finding could be considered surprising.

Attributions based on ability and on motivation did not differ in effectiveness; the authors believe that this implies that it is important to link skill-specific attributions to the self-system, and that it is more important to do this than to be concerned about the basis of the linkage. Thus the message "you are a particular kind of person" is more important than the specification of "why".

To account for the ineffectiveness of persuasion they suggest that "persuasion often suffers because it involves a negative attribution (a person should be what he is not), (while) attribution generally gains because it disguises persuasive intent" (Miller et al, 1975, p. 430). In relation to some of the "overjustification" procedures discussed in the previous chapter, Eiser (1980) similarly suggests that they imply such negative attributions as "I know that you wouldn't want to do this for nothing, so this is what I am offering you". Thus it does seem that various authors are converging on the idea that the meaning of the locution to the praisee, and its interpretation in attributional terms, and in relation to the self-system, is the important factor in its effectiveness. Miller et al point out, rightly, that the separation between reinforcement and attribution is confounded to an extent. An example of such confounding is "My you play well" which can be interpreted as "I am a good player" (Kanouse et al, 1981). To anticipate the argument in the next section, "I think you are neat and tidy" might be interpreted by its recipient as "I expect you to be neat and tidy". That such interpretations may occur certainly adds a further dimension to the observation of Kanouse et al about the difficulty of making "neat classifications" of praising locutions.

In the context of the need to separate reinforcement from any implied attributions, a recent integrative review by Jussim (1986) of the area of self-fulfilling prophecies, with special reference to educational settings, is relevant. This author refers to praise and expectancy effects, using an attributional formulation. In relation to skills development he notes that teachers who do not provide praise for low expectation students are failing to provide the information which would enable them to determine when their behaviour is relevant to the likely outcome of scholastic success. High expectancy students, by contrast, receive clear information in the form of praise and feedback. There is likely to be an interaction between such teacher behaviour patterns and students' perceptions of control. That is, in order to achieve, students must believe that they can engage in the behaviours relevant to success. This implies that it would be better to praise the efforts of low expectation students and avoid making negative dispositional attributions to them.

As will become clear in the ensuing discussion, many researchers have been as interested in possible mediating mechanisms for any observed effects of attributional praise as in those observed effects. Grusec and Redler (1980), for example, investigating the effects on children's altruism of "character attributions", or statements attributing specific behaviours to a dispositional characteristic, were interested in a hypothesis about mediation. Their hypothesis was that such attributions affect the self-concept. They argued that if this form of mediation did occur, the effect of the attributions should be seen in a much wider

variety of situations. Social reinforcement given for a specific behaviour, on the other hand, would not be expected to generalize beyond the given situation. In 1978 Grusec, Kuczynski, Simutis and Rushton had informed children who had donated winnings to charity after watching a model donate that they had done so either because they must enjoy helping others, or because they were expected to donate. The former technique facilitated subsequent donation and increased the children's altruism in another unrelated situation. Seven- and eight-year olds participated in the later study. They played a bowling game, ostensibly so that they could give their opinions on the game for a toy company. The situation was set up so that subjects won marbles in 8/20 trials, and these marbles could either be exchanged for prizes or given to poor children. The manipulations were -

(attribution) "Gee you shared quite a bit. I guess you're the kind of person who likes to help others whenever you can. Yes, you are a very nice and helpful person."

(social reinforcement) "Gee you shared quite a bit. It was good that you gave some of your marbles to those poor children. Yes, that was a nice helpful thing to do."

In the control condition, no statements followed the initial one. Children were tested at this stage by being given coloured pencils which they could either keep or give to others in their class who were not in the study. A week later they were invited to help the experimenter by folding cards; again the manipulation was delivered. Then the experimenter left the trailer (the study was conducted in the school grounds) and the children were to choose between continuing to fold cards or looking at a "Viewmaster". In a third phase of the study, the experimenter visited the children in class to collect craft materials for sick children and each child was given a bag in which to collect drawings and materials. Grusec and Redler (1980) found that eight- and ten-year olds were equally responsive to attributional praise. But ten-year olds were more likely to treat both statements (about their acts, and about their dispositions) as having implications for a variety of pro-social situations.

The results supported the hypothesis that the effects of social reinforcement are specific to the situation, whereas attributional praise has both specific and generalized effects. After it was found in a further experiment with a kindergarten class that the generalization was less likely to occur in younger children they suggested a corollary to the effect. Referring to the suggestion of Livesley and Bromley (1973) that the eighth year might be critical in terms of the development of person perception, the authors assert that this might be a transitional point beyond which children become capable of thinking of themselves in dispositional terms, while having no fixed idea of their characteristics. For this reason their perceptions might be more easily manipulated. Grusec and Redler conclude that their studies underscore the importance of the verbal messages children receive about their behaviour. Praising an act (specific praise) has a very different effect, at least on the behaviour of an eight-year old, than does praising the person (general praise). Although they

suggest that the observed effect is mediated through changes in the self-concept, they can provide no direct evidence in support of this view.

Grusec and Redler (1980) also suggest that in providing children with a label for their behaviour the experimenter may really just be providing positive reinforcement. Essentially they are suggesting that telling children they are helpful is more reinforcing than telling them they are good. However, in itself, this explanation is inadequate, since it does not account for why the attributional praise is more reinforcing than the "approval" type.

Nevertheless, Kraut (1973) also favoured this as an explanation for his results. He labelled homemakers as "charitable" or "uncharitable", and subsequently found that more donations were received from the positively labelled group. Sixty-two percent of this group, compared to 47 percent of the other, gave donations for multiple sclerosis one or two weeks later. The positive label was acting as a reward, according to Kraut. When research on the effects of negative labels is also considered, such an explanation could be regarded as overly simplistic. For example, Snyder and Swann (1978) found that targets who were led to believe that their hostile response to a perceiver reflected a hostile disposition acted in a hostile way to a new partner.

Hall and Pope (1981) were interested in attributional aspects of mediation. They investigated the attributional outcome of being in receipt of various locutions, including praise, and found that subjects receiving a message attributing ability subsequently saw luck as a less important factor in a proof-reading task, when compared to subjects receiving a message attributing effort. The initial task was a letter-crossing task which was followed by one of four messages. These were categorized and worded as follows -

- (a) Attribution of ability - "You did very well on that last task. Your score shows that you have excellent perceptual discrimination. You are doing very well."
- (b) Attribution of motivation - "I can tell you worked hard and really concentrated on the last task. You seemed to be working harder toward the end of the task and your score improved; good: keep trying harder on this next task."
- (c) Persuasion of ability - "I can tell from your score on the last task that you should do very well on your English papers. You should be able to hand in a perfectly typed paper. You should do very well on this next task."
- (d) Persuasion of motivation - "You should spend more time on your work. On this next task concentrate more and apply yourself. You should really work harder and give it your best try."

Hall and Pope suggest that the fact that subjects saw luck as a more important factor than ability or effort after receiving the persuasive messages might be due to the "external power of coercion" associated with persuasion. In the terms used previously in this discussion, perhaps the controlling aspects of those locutions were salient, or alternatively a negative attribution was inferred (Eiser, 1980, see above). On the other hand, they suggest,

those who received an informational labelling of their behaviour, most particularly group (a) to whom "perceptual discrimination" was attributed, began to see themselves as the locus of their behavioural outcomes. If this were the explanation, it is likely that subjects would develop a future orientation in relation to behaviour implied by the manipulation. Indeed Boggiano, Klinger and Main (1986) found that when children were encouraged to make internal attributions for why they interacted with a peer, they subsequently showed greater interest in continuing that interaction.

A study by Comer and Laird (1975) may be advanced in support of the notion that self-attribution affects subsequent behaviour. They found that subjects who agreed to perform an unpleasant task (eating a worm) drew one of three conclusions - (1) they liked the worm, (2) they were brave and heroic, or (3) they deserved to suffer. Subjects in groups (2) and (3) who attributed their behaviour to a characteristic or attribute of themselves subsequently behaved differently from the subjects who had reconceptualized the worm. When subjects were asked to choose between a task in which shocks were to be administered and a neutral task, a greater number from groups (2) and (3) chose to shock themselves. The authors suggest that this was due to their having changed their self-conceptions.

Whatever explanatory models are advanced to account for effects, they must be able to accommodate the interactions among variables which have been found. Baumeister, Cooper and Skib (1979), for example, found that female subjects who were led to believe that they possessed, and who were believed by a perceiver to possess, a positive (but bogus) trait, performed very poorly on a subsequent anagram task if they also believed that such poor performance was consistent with the positive trait. The subjects were undergraduate females participating in a study on "personality and behaviour" for which they were paid \$2.50. The desirability of the trait "surgency" was manipulated via a tape-recording designed to be overheard by subjects. In the one recording individuals with this trait were described as mature, sensitive and intelligent, and in the other as immature, insensitive and unintelligent. Taped instructions were left explaining that it was anticipated that high surgency women would do poorly on the anagram task. In a public condition, the confederate entered just as the subject, who then had to announce her score aloud, was completing the task, while in a private condition the subject was left alone, and was not required to write her name on the task paper. The good trait/public condition was the most effective treatment in eliciting behaviour consistent with the bogus characteristic. It might thus be termed a "self-presentational" effect.

Interaction effects using a different variable were found by Kanekar (1977) in a study in which subjects had to choose the level of shock they would receive in a later session. The likelihood that they would choose either a high (70 volts) or a low (30 volts) level was attributed to them. "Trustworthiness" was varied by having the attribution either overheard or direct. The attributor also indicated his position. Attributees chose a higher voltage of

shock in the high attribution condition than in the low, and they also chose a higher level in the condition in which the attributor indicated that he would choose a high level than when he indicated a low choice. Thus, although apparently the implicit labelling of subjects as being "the kind of person who will take a high level of shock" affected their subsequent behaviour, the position of the attributor also had an impact.

The effects of providing a "label" for an individual's behaviour have thus been investigated in a range of studies. Although the primary area under study has been that of altruistic behaviour, this brief review should have demonstrated that an interesting range of characteristics other than "helpful" have also featured in the literature.

### 2.1.1 "Labelling": Behavioural Evidence and the Foot-in-the-Door Phenomenon

In most studies in the area of labelling, but particularly in those involving altruism, researchers contrive to have subjects provide some form of behavioural evidence before the label is attributed. For example, Jensen and Moore (1977) told boys that a questionnaire they had filled out indicated that they were either co-operative or competitive. On a subsequent game the boys' behaviour was consistent with the label they had thus received.

In another study, Paulhus, Shaffer and Downing (1977) had blood donors read communications designed to label their motives for giving blood. There were two conditions, in one of which altruistic motives were emphasized, while in the other the benefits (e.g., free blood in an emergency) were stressed. Those in the former group reported a higher likelihood of future donation.

Another strategy is exemplified by the work of Strenta and De Jong (1981) who investigated the effect of feedback from a bogus personality inventory. There were four conditions -

- (1) Subjects in a pro-social condition were told that their responses showed them to be more "kind and thoughtful" than most other respondents.
- (2) Subjects in a control label condition were told that their responses showed them to be more "intelligent".
- (3) Subjects in a salience condition were told that kindness to others was a dimension along which their responses would later be compared with those of others.
- (4) Subjects in a control condition received no feedback.

All subjects later encountered a confederate who dropped a large number of cards. Subjects in group (1), the pro-social label condition, were significantly more helpful than were those in any of the other groups.

Incidentally, these authors discuss and dismiss the possibility that the attributed characteristic is incorporated into the self-concept, suggesting that this would occur rarely except perhaps in children. Their explanation is that the subjects would review their past behaviour for evidence that is consistent or otherwise with the label, and accept or reject it

on that basis. This is reminiscent of the "deservingness" assessment proposed by Kanouse et al (1981).

Further to the "behavioural evidence" variable, another body of positive evidence comes from work in which the primary interest is in the interaction between labelling and the foot-in-the-door phenomenon. This is the phenomenon whereby the likelihood of compliance with a more substantial request is increased after compliance with a smaller, even a trivial, one is achieved.

Swinyard and Ray (1979) examined the effects of praise and small requests on receptivity to direct-mail appeals. Householders were praised by Red Cross volunteers who told them they were "interested in their fellowman". Those who had been labelled in this way were more responsive subsequently to mailed appeals when compared to those who were not so labelled. The effects of the label were still evident two weeks after the manipulation.

Goldman, Seever and Seever (1982) combined a labelling manipulation with a foot-in-the-door procedure. They predicted that subjects given a positive label after the initial request would comply more with the second request when compared to subjects given a negative label. The latter group should be less compliant. After being asked for directions, subjects received one of these responses (a fourth group was not stopped) -

- (1) "OK, thank you."
- (2) "Thank you very much. You have been very helpful, and I appreciate your taking the time to help me."
- (3) "You are not very helpful, and I can usually understand directions. I'll have to find someone who is more helpful."

Subsequently all subjects were stopped and asked by a confederate whether they would give two hours during the next month to answer 'phones for a telethon. The prediction was supported, and Goldman et al concluded from this result that such labelling influences the subject's self-concept. Again, as in the research of Grusec and Redler (1980) mentioned in Section 2.1 of this chapter, the researchers do not in fact provide any evidence for this interpretation.

When Freedman and Fraser (1966) investigated the foot-in-the-door phenomenon they had also advanced one type of self-concept explanation as the mediating process. They concluded that what subjects do, in effect, is to label themselves a good sort of person. They argue that "what may occur is a change in the person's feelings about getting involved or about taking action. Once he has agreed to a request his attitude may change. He may become in his own eyes, the kind of person who does this sort of thing, who agrees to requests made by strangers, who takes action on things he believes in, who co-operates with good causes" (*ibid.*, p. 201). A similar conclusion is reached by later researchers who refer to Bem's (1972) "self-perception theory" to explain their results (e.g., Seligman, Bush and

Kirsch, 1976; Snyder and Cunningham, 1975). Given that according to this interpretation the individual is essentially labelling her/himself "helpful and co-operative", if the stranger at the door also attributes these characteristics to her/him, presumably the credibility of the label increases. As Swinyard and Ray (1979) express it, "subjects seem to have been led to argue mentally, 'What is the meaning of this label? It must be because I am the sort of person who does this sort of thing'" (p. 183). The likely interaction of praise with the self-concept is discussed in Chapter 3 where the nature of the self-concept and its modes of operation are considered in detail.

### 2.1.2 Negative Evidence and Negative Labels

Not all studies have outcomes supporting the efficacy of labelling. On the basis of bogus test results, McArthur, Kiesler and Cook (1969) labelled some subjects as "doers" who know what needs to be done and take appropriate action. This label increased the proportion of people who were willing to help distribute anti-pollution leaflets only when subjects were also told that this kind of personality qualified them to be paid for participation in a second experiment.

Further moderating variables have been investigated in relation to negative labels. Steele (1975) compared the effects of a positive and a negative label in affecting subsequent helping behaviour. His hypothesis was that the negative label would motivate subjects to work to restore their self-esteem. Subjects were telephoned and were either called "apathetic about the welfare of others" or were praised for their desire to help others. In one control condition, subjects were criticized for their lack of concern for driving safety. Two days later all subjects were asked to help a food co-operative in a poor neighbourhood. Compared to controls, those who received the positive attribution were more likely to help, but not significantly so. However, virtually all subjects in both negative label conditions promised to help, and most actually did. This result was replicated in a second study. Steele points out that his "name-calling" procedure differs from many other labelling studies in that no recent behavioural evidence has been provided (cf. Kraut, 1973), nor had phony tests been undertaken (cf. McArthur et al, 1969). On this basis he argues that the effect of the negative label on self-perception may depend on whether the subject can refute the label in order to restore self-esteem. An alternative interpretation of the mediation of negative labels might be in terms of the phenomenon of reactance (Wortman and Brehm, 1975). Perhaps Steele's subjects were striving to demonstrate that the negative label was inappropriately applied to them. Jussim (1986) refers to this phenomenon in relation to students whose self-concepts are inconsistent with their teacher's expectations of them.

The possibility that individuals would attempt to restore self-esteem after being labelled negatively was also of interest to Gurwitz and Topol (1978), but as is the case with positive labels many variables are likely to interact to produce any observed effect. University students were telephoned and accused of not taking advantage of the opportunities afforded by a nearby city. This accusation was worded in such a way as to



criticize them either individually or as a member of a group. Half were asked how many times they had been to the city in the last few months (mean number of visits was zero), while the others were not required to provide evidence in support of the accusation. Later the same evening subjects were asked to fill out a questionnaire concerned with their interest in activities in the city. When they had been led to provide evidence supporting the criticism, the important variable proved to be whether they had been accused as individuals or as members of a group. The "group" condition led to greater contradiction of the label. Those subjects who had provided evidence prior to the accusation were more likely to disconfirm the label when it was directed at them as individuals. These results were replicated in a laboratory study in which subjects were labelled as low in self-confidence.

In relation to models of mediation, and to the interaction among variables, Shrauger and Lund (1975) investigated differences in the reactions of people to favourable or unfavourable evaluative feedback along a specific personality dimension. Subjects were either generally high or generally low in self-esteem. The researchers framed interpretation of their study in terms of two opposing theoretical positions, self-enhancement theory and consistency theory. According to proponents of the former theory everyone has a need to feel favourably towards the self, and individuals will work to satisfy this need. Consistency theory, by contrast, implies that individuals will react more favourably to personal evaluations made by others if they are consistent with pre-existing self-perceptions. In the study of Shrauger and Lund there were a high and a low self-awareness condition, and a control condition. Subjects in the "high" group were told that an interviewer had judged them very self-aware. In the "low" condition the interviewer's opinion had apparently been that there were some areas in which the subject was not very aware. Results showed little, if any, support for self-enhancement, in that low self-esteem subjects did not indicate relatively more favourable reactions to the high awareness evaluation, or less favourable reactions to the low awareness evaluation, in comparison to high self-esteem subjects. The fact that high self-esteem subjects found the low awareness evaluation less credible than did low self-esteem subjects is rather more in line with consistency theory, according to the authors.

Shrauger (1975) suggests that to understand these effects a distinction must be made between the cognitive processing and interpretation of the feedback on the one hand, and the affective reaction to it on the other. After assessing the literature he suggests that generally when cognitive reactions are being assessed findings favour a consistency model, whereas when affective reactions are considered they tend to support self-enhancement theory. The scope of this project does not permit any contribution to the empirical investigation of the effects of negative labels or of the evaluation of cognitive/affective differences: however, further consideration is given to the issue of cognitive versus affective reactions in Chapter 12.

### 2.1.3 Behavioural Measures and Self-Rating Measures

Although the emphasis in this review has been on studies which used an actual behavioural measure after the characteristic had been attributed, it should be noted that a number of studies have also been reported in which a self-rating on a scale is the dependent measure. Shrauger and Schoeneman (1979) review these "controlled feedback studies", asserting that "the most elementary question typically asked in this research is, Will individuals modify their self-descriptions in the direction of the feedback they receive? The most elementary answer is usually" (p.560).

After reviewing studies on a variety of populations, and for attributes as diverse as physical skills, public-speaking ability, and a range of personality traits, they concluded that "although controlled feedback from others typically produces some changes in people's self-descriptions, several factors influence the extent of such changes. These include the discrepancy of feedback from subjects' self-perceptions, favourableness of feedback, characteristics of the evaluator, consensual validation of the judgments given, and attributes of those evaluated" (ibid., p. 561). Studies illustrating the work in each of these areas are reported by the authors.

### 2.1.4 "Labelling": Concluding Comments

Bem (1972) argues that we draw inferences about our characteristics by observing our own behaviour. If we cannot find a sufficient external cause for the behaviour, we assume we are acting thus because we have a certain disposition. This technique for acquiring self-knowledge appears to be particularly important when internal cues are "vague or ambiguous". Evidence has been presented in the preceding sections that we also use the labels given us by others to interpret our own behaviour. It has been implied that one form of praise, "attributional praise", might be a fairly effective form of behavioural control, in that it provides the individual with some important self-information. In behaviourist terms, clear labels added to the "stimulus collage" "by a trusted friend or several other people simultaneously" (Baldwin and Baldwin, 1981, p. 90) can act as strong, unambiguous Sd's for responses appropriate to the label. However, as will have become clear, a cognitive perspective is being taken here. Specifically, interactive effects with the individual's self-concept are considered to be a primary mediating processes, and this is the topic of the next chapter.

## 2.2 Expectancy Effects and the Self-Fulfilling Prophecy: Introductory Remarks

An important mediator of the effects of positive verbal statements may be the interpretation of the stimulus by the recipient. Thus, once having compiled as comprehensive a classification system for such locutions as it is possible to do, it will still remain uncertain on any given occasion just what the locution means to that recipient. If the

specific informational content of the locution is to be regarded as important, it must be demonstrated that different locutions are interpreted differently, or at least have differential effects on behaviour. Thus, for example, were it to be shown that "good girl/boy" and "nice work" were indistinguishable in terms of behavioural outcome, there would be little point in maintaining separate categories for the two forms of praise. That is, while they might be regarded as conceptually different forms of praise, there would be no functional distinction to be made between them.

It was suggested earlier that attributional praise might well be interpreted as an expectation about future behaviour ("I think you are neat and tidy" becomes "I expect you to be neat and tidy"). Whether these two forms of praise differentially affect behaviour is the subject of some of the experiments reported in subsequent chapters. It is thus necessary to examine, in general terms, the effects on behaviour of the explicit or implicit communication of an expectancy from a perceiver to a target. It should be noted that some of the studies reported in Section 2.1 could equally have been placed in this section (e.g., Baumeister et al, 1979), and many of the studies published in the literature do confound the two potentially different effects. Further, the term "expectancy effects" is also used to cover the effects on an individual's behaviour of his own performance expectations; this is not the topic considered here.

### 2.2.1 The Effects of the Communication of a Specific Expectation for Behaviour

Explicit communication of an expectation in relation to future behaviour undoubtedly affects behaviour. Kanouse et al (1981) refer to a study by Kanouse and Pullan (Kanouse et al, 1981) in which subjects were to copy abstract paintings freehand. There were three groups, the first being a "specific praise" group, the second being a "future implication" group, and the third being what might be termed a "social reinforcement" group. The second group could be regarded as an "expectation" group. Locutions used for the first group were "Very good. That's really a nice feeling you've got for this Kandinsky. Lots of people haven't done so well with this one...." (In fact, this locution confounds two types of praise which are distinguishable in the classification system which is presented in Chapter 11; these two types are termed "specific praise" and "social comparison", the latter being a form of praise which is frequently reported as being used in studies relevant to this area). The second group were praised in an identical manner, but with the addition of "If you can do this, you should do well on the rest of these....", while the third group heard "Okay, fine. Now let's do the next one". It was found that drawings subsequently produced by the second group were of a lower quality, according to the ratings of judges, than were those of the other groups. In addition, these subjects attributed their performance more to luck than to ability, and rated themselves as significantly more anxious. These results are quite consistent with some findings emerging from within the framework of Deci's (e.g., 1975) cognitive evaluation theory (for example, Ryan, Mims and Koestner, 1983 - see discussion of Experiment 2 in Chapter 6).

Further examples of expectancy effects are the work of Sigall, Aronson and Van Hoose (1970) and Swann and Ely (1984) (see Section 2.2.2). Sigall et al had subjects copy lists of telephone numbers after being told that they were expected to perform at a level either above (Group 1) or below (Group 2) that of their own "practice round". In a third condition, subjects were given the expectation that their performance would be lower than their own established level, and were also told that subjects who performed well on this task had obsessive-compulsive personalities. This condition produced poorer performance (fewer numbers copied) than did a "no expectation" control, whereas the first two conditions both elicited relatively superior performance.

Baumeister et al (1979) distinguish between the "content" and "basis" of an expectation. The "content" is what the target is expected to do, whereas the "basis" is whatever attributional reasoning led to the formation of the expectation. They argue that the target must take into account the consideration that if s/he conforms to the behavioural expectation the perceiver's attribution to her/him of the trait is thereby confirmed. Even if s/he does not believe s/he has that trait, s/he must acknowledge that the perceiver will interpret the expected behaviour in relation to the attributed trait.

In fact, the main intention of Baumeister et al was to show that the effects of an expectancy on behaviour are not necessarily simply a product of the individual's internal dynamics, but may be rather the result of a desire to project a certain image of oneself. In this context, two studies which indicate the power of gender-role expectancies are relevant. Stein, Pohly and Mueller (1971) found that children spent more time on a task if it was labelled as appropriate for members of their own gender, than if it was labelled as appropriate for the opposite gender. Zanna and Pack (1975) found that women presented themselves consistently with the gender-role attitudes of an attractive male.

Presumably "behavioural evidence" which was referred to in the previous section will be important in determining if and when expectancy effects occur. Having acted in accordance with some view of her/him held by the perceiver, the target may not wish to go to heroic measures to change that impression unless the contradictory self-conception is very important to her/him (cf. Markus, e.g., 1980; see Chapters 3 and 10). Additionally, in recent work by Hilton and Darley (1985) it has been shown that, at least when a negative expectancy is apparently operative, expectancy confirmation does not occur when the target is aware of that expectancy and able to adjust her/his behaviour in such a way as to present an impression contradicting it. Miller and Turnbull (1986) review expectancy effects, stating that the positive or negative nature of the expectancy may determine whether a person acts to dispel or confirm another's expectations. The size of any discrepancy between actual behaviour and the expectation is also likely to have an impact (Fiske and Taylor, 1984). The area of self-presentation and its implications for understanding the mechanisms underlying the effects of praise are discussed in Chapter 3.

### 2.2.2 The Self-Fulfilling Prophecy: Behavioural Confirmation versus Self-Verification

Swann and Ely (1984) tried to determine what would happen if there were a conflict between the target's self-view and the perceiver's apparent view of the target. There are two areas of research covered within this question, the first being that of the "self-fulfilling prophecy", or "behavioural confirmation", in which the focus is on the perceiver. In the second relevant area, "self-verification", the focus is on the target. Conflicting findings emerge from within these two perspectives. For example, Swann and Hill (1982) found that targets quickly provided perceivers with corrective feedback when the situation was arranged so that those perceivers were led to form inaccurate views as to the targets' dominance or submissiveness. An identical result was obtained for the dimension "likeable-unlikeable". These authors argue that the important variable is whether the perceiver's expectation accords with the target's self-view. Targets will try hard to ensure that perceivers view them in a manner which is consistent with their self-conceptions.

From the perspective of the "self-fulfilling prophecy" it would be predicted that targets would tend to confirm perceivers' expectations. According to Merton (1957), "definitions of a situation (prophecies or predictions) become an integral part of the situation and thus affect subsequent developments....The self-fulfilling prophecy is, in the beginning, a false definition of the situation evoking a new behavior which makes the originally false conception come true. The specious validity of the self-fulfilling prophecy perpetuates a reign of error. For the prophet will cite the actual course of events as proof that he was right from the very beginning" (p. 423). Given that it would be an easy matter to review many of the labelling studies cited in Section 2.1 and reinterpret them in these terms, it becomes important to disentangle factors which mitigate this apparently strong effect.

Swann and Ely (1984) were, in fact, particularly interested in the circumstances under which the target would behave consistently with her/his self-view rather than with the view of the perceiver, given a discrepancy between those views. They suggest that the certainty of perceivers' expectations will influence the likelihood of their acting upon them in relation to the target - and perceivers are likely to feel confident in relation to the consistency of the evidence. Similarly, targets who are uncertain of a self-conception may be more willing to behave in such a way as to confirm the expectancy. Further, Swann and Ely posit that more adults will be more certain of their self-conceptions than will perceivers be of their expectancies. For this reason, presumably, the "self-fulfilling prophecy" will by no means always occur. It is noteworthy, however, that in discussing their findings, the authors stress that they do not mean to imply that findings relating to the self-fulfilling prophecy are inaccurate. They argue that previous researchers have typically allowed target self-conceptions to vary randomly, while they themselves deliberately pitted target self-conceptions against perceiver expectations.

In a study in which perceivers received high or low certainty information about the extraversion or introversion of targets (which always conflicted with the target's self-conceptions) empirical evidence was provided in support of the role of certainty. Perceivers were to learn about targets by asking them a series of questions. Before the interview they (perceivers) received evidence that the target was extraverted or introverted (high certainty) or they received mixed evidence (low certainty). Whatever the condition, the perceiver's expectation always conflicted with the target's self-conceptions. Naive judges listened to tapes of the interviews and rated the target's extraversion. The perceiver also rated the target's extraversion, and her/his certainty of that judgment, and the target who had previously rated her/himself did so again.

Targets who were relatively certain of their self-conceptions always behaved in a manner which was compatible with these self-conceptions whether or not perceivers were relatively certain or uncertain of their expectancies. On the other hand, targets who were uncertain of their self-conceptions tended to behave in a self-consistent manner only when the perceivers were relatively uncertain of their expectancies. When perceivers were relatively certain of their expectancies targets low in self-certainty tended to confirm perceiver expectancies, thereby disconfirming their self-conceptions. According to the authors, however, an even more "compelling answer" to their original question was to be found in the correlational evidence. Whereas targets continued to behave in a self-consistent manner despite pressure from perceivers to do otherwise, perceivers abandoned efforts to uncover evidence which might support their expectations.

### 2.2.3 Final Remarks

As has become clear from the foregoing discussion, this area is a multi-faceted and complex one, and one in which the nature of answers to questions may depend to some extent on the initial perspective taken. Darley and Fazio (1980) attempt to analyze the process underlying the "self-fulfilling prophecy", beginning with the perceiver's expectancy, which leads to the perceiver's actions, which in turn affect the target's actions, and both of their interpretations, in a cyclical fashion. They review studies which have been undertaken to investigate each of these stages. Then, as a result of their 1985 work, Hilton and Darley suggested that the process may be an even more complex one than is allowed for in the model in which the perceiver behaves consistently with the expectancy.

Subsequently it is argued that aspects of the target's self-concept may be important in mediating the effects of explicit expectancies for behaviour. Recently Jussim (1986) specifically addressed the issue of the self-concept or self-schemas as mediating factors in expectancy effects. He argues that "the self-concept may be an especially useful way to understand students' likely reactions to the treatment they receive in the classroom because the self may be the primary mediator of one's perceptions and interactions with the environment" (*ibid.*, p. 439).

Jussim considers a variety of hypothetical situations involving high and low expectation students. Those who are in the optimal situation are students who are "smart" schematics and for whom the teacher also has high expectations. The converse situation of a "dumb" schematic for whom the teacher has low expectations may result in the student continuing to perform poorly since s/he is likely to interpret all situations unfavourably, and indeed, is likely to be exposed to more unfavourable situations.

A major focus of the present research project is on the role of self-conceptions and self-schematism in mediating the effects of praising locutions. It is this writer's contention, firstly, that different praising locutions, specifically attributional praise and the communication of an expectation, may have differential effects on behaviour, and secondly, if they do, that this will provide a clue to the mediating mechanisms involved beyond the initial interpretation phase.

A detailed consideration of approaches to the self-concept follows in Chapter 3. However, one final point perhaps needs to be spelled out here. Although the argument has not been explicitly set out, it is hoped that the preceding discussion will have indicated that the specific/general praise distinction made by Kanouse et al (1981) is likely to prove inadequate in coping with the variety of possible dimensions available on which to consider any given praising locution. There are more varieties of praise and verbal reinforcement than could be accommodated within this dichotomy. Moreover, each type is likely to have differential effects, possibly in interaction with individual variables (see Chapter 4), and the mediating mechanisms are probably complex and fascinating.

### CHAPTER 3

In Chapter 2 it was suggested that labelling a behaviour, and expressing an expectation about an individual's future behaviour, among other locutionary forms, could be regarded as forms of praise within the definition of Kanouse et al (1981). It is very likely that such different locutions will differentially affect behaviour because of the nature of the personal information thus conveyed to the recipient of the praise, and the resulting effect on that individual's self-concept.

One aspect of the argument to be presented in this chapter is that individuals (strive to) maintain consistency between their ideas of self and their behaviour, and that these ideas, being active and flexible, will accommodate received praise under certain circumstances in such a way as subsequently to affect behaviour. Thus, having received praise of a kind which indicates that the individual has a certain disposition (attributional praise), s/he is then more likely to regard her/himself as the origin of acts of that kind, and therefore to act consistently with the praise or label.

During the last decade, the self-concept has increasingly become a topic considered worthy of investigation by psychologists. Manis (1977) suggests that contemporary social psychologists have shown a "remarkable convergence of interest in the perceived self (or self-concept)" (p. 556) and Gergen (1984), on the basis of noting how many writings are available on the self, asserts that "the hegemony of self-inquiry is currently at hand" (p. 51). Within sociology too "there has been a revitalization of interest in the self-concept" (Gecas, 1982, p.1).

Currently it seems that many researchers and theorists within psychology are, often independently, concluding that behaviour flowing from self as "origin" may require different conceptual analysis from that prompted by self as "pawn" (to use the terms of de Charms, 1968). As Deci and Ryan (1983) describe it, "internally informational" events will have different outcomes from "internally controlling" events. Varieties of praise might evoke either an "origin" self or a "pawn" self. Thus hypothesized interactions between "apparently subtle variations in the language of praise" (Kanouse et al, 1981, p. 98) and the self-concept will be discussed in this chapter.

Material is presented in four sections. In the first, consideration is given to models or "metaphors" (Pratkanis and Greenwald, 1985) which have been proposed for understanding what might be meant by a "self-concept". Because of the nature of the empirical work to be described in subsequent chapters, Markus' (e.g., 1977, 1980) work on the cognitive approach is elaborated to a greater extent than other work. This elaboration continues into the second section of this chapter where schema theory is considered. In the third section a discussion of the development and change of the self-concept includes a consideration of sources of self-knowledge such as the attributions of other people, and feedback from one's own behaviour, and of the roles of self-enhancement and self-presentation in maintaining a consistent "self-concept". In the final section of the chapter, the related series of



propositions comprising the thesis under investigation here will be set out, thus drawing together the conceptual and empirical material discussed over the first three chapters.

### **3.1 The "Self-Concept": What is it? (1) Issues**

Since, as Scheier and Carver (1980) note, "an almost incredible array of constructs has proliferated around the term self concept" (p.230), only a sampling of approaches and issues can be presented here. The major approaches which require more detailed representation are those of symbolic interactionism, behaviouristic constructions, and most particularly, experimental social psychological, including cognitive, approaches. It should be noted, however, that Gergen (1984) suggests that historically the three "major pillars of contemporary work" include James' (1890) writings and Freud's (1933) theorizing, as well as symbolic interactionism.

Many of the issues which have concerned theorists may be expressed as conceptual dichotomies. Thus theorists have considered whether the self has a unitary structure, or whether we have multiple selves, whether the self is a structure or a process, whether it is stable or malleable, is in or out of awareness, and whether its public nature differs from its private nature. Space does not permit the detailed consideration of all of these issues, but the nature of the controversies generated within each one will be at least touched upon.

#### **3.1.1 Structure or Process**

Gecas (1982) distinguishes between the "self" and the "self-concept". He believes it is necessary to make this distinction because psychologists have been confused over the issue of whether they were referring to a structure or a process. Even in 1968 Secord wrote that while much of the early work on the self dealt with the concept as a coherent, organized set of cognitions and feelings about oneself (a structure), the results of (the then) recent empirical work suggested that a more appropriate conceptualization of self would be as a process. Gecas believes that the confusion between self as structure and self as process is overcome when a distinction is made between the terms "self" and "self-concept". The former term would then be used to refer to a process, "the process of reflexivity which emanates from the dialectic between the 'I' and the 'Me'" (Gecas, 1982, p. 3), while the latter term could be reserved for describing the "product of this reflexive activity" (ibid.). According to Gecas this product is "the concept the individual has of himself as a physical, social, and spiritual or moral being" (ibid.).

Psychologists have recently advanced an information processing approach in which the self-concept is regarded as comprising a number of "self-schemas" in various domains (e.g., Markus, 1977, 1980). To the extent that a schema is conceived as a structure that contains knowledge and the rules for the extension and recombination of that knowledge (see e.g., Neisser, 1976) this model appeared to be a viable conceptual model which overrode the need for a distinction between structure and process. This view of the self as a complex, active and flexible entity will be discussed below.

Parenthetically it might be noted that Gergen (1984), in examining the "general shift from mechanistic to agential explanations in the history of self-inquiry" (p. 77), points out that proponents of the information-processing model are still guilty of "agency smuggling". That is, they hypothesize a processing system separate from the self-concept or structural portion of the self-concept, and indeed, additional processes between that structure and behaviour. The emergent property of the self, self as observer of itself, will not be covered in this discussion, however: the focus will be on aspects of the self-concept which may be operationalized.

### 3.1.2 One Self or Many

Although James (1890) regarded the self as a unitary structure, in distinguishing between the self as knower, and the self which is known, he suggested that the latter, the object self, had three aspects. These were the material self (the physical body and material possessions, and the individual's relationships), the social self (as viewed by others), and the spiritual self (its motivating forces).

The notion of "multiple selves" as opposed to a single self has also been a topic of research by cognitivists (see Gergen, 1971). For example, Gergen and Wishnov (1965) had subjects rate their self-esteem. One month later half the subjects described themselves to an egotistical partner, while the other half did so to a humble partner. The researchers found that the characteristics of the partner clearly influenced the self-ratings, with the former partner evoking more positive, and the latter more negative ratings, as if subjects were in some sense trying to minimize the discrepancy between themselves and their partners. Recent work by McGuire, McGuire and Cheever (1986) also suggests that our self-descriptions can vary according to the social context. Children of varying ages and both genders described themselves differently when asked to consider the family as compared to the school context. The self in the family context was a more passive concept, while at school it was relatively more active.

Much early work on the self was within the symbolic interactionist framework. Cooley (1902) termed it the "looking-glass self" because he believed that it consisted of "the imagination of our appearance to the other person (and) the imagination of his judgment of that appearance" (p. 152). Mead (1934) extended this conception of the self, saying that to perceive ourselves we must take the perspective of the other; only then would the "self" be clarified. Thus "the individual experiences himself as such not directly, but only indirectly, from the particular standpoints of other individual members of the same social group or from the generalized standpoint of the social group as a whole to which he belongs" (ibid., p. 138). As psychologists Shrauger and Schoeneman (1979) summarize it, the symbolic interactionist view "asserts that one's self-concept is a reflection of one's perceptions about how one appears to others" (p. 549). Schlenker (1980) uses the example of a child hearing his Grandpa say of him "Look at that build - husky already. And you should see his grip. That boy's gonna make a fine fullback some day; nobody will be able to tackle him" (p. 60).

In responding to such a "reflected appraisal" the child may well, according to Schlenker, begin to form a concept of himself as strong and athletic.

In relation to the symbolic interactionist position, it is interesting to note that the notion of consistency, which in various guises has permeated social-psychological thinking in this area, is an underlying concept. Stryker and Gottlieb (1981), for example, suggest that "just as symbols applied to others invoke expectations for those others' behavior, so symbols applied to oneself invoke expectations for one's own behavior. Self-concepts thus have motivational properties" (p. 432) (cf. Snygg and Combs, 1959; Markus and Sentis, 1984; Pratkanis and Greenwald, 1985).

The theory of Breckler and Greenwald (1986) also incorporates the notion that aspects of the self have motivating effects. They distinguish four such aspects within their overall theory of ego-involvement. The "diffuse self" is a primitive aspect which guides the individual towards positive affective states, the "public self" seeks approval from significant others, while the ego-task of the "private self" is individual achievement according to internal standards. Finally, the "collective self" is concerned with achievement through one's role in a reference group. They note that ego tasks may be in conflict. In the classic conformity experiment (Asch, 1951), for example, the task of pleasing others conflicted with the ego-task of individual achievement and pleasing oneself.

Proponents of the information processing approach to the self-concept also contribute to the one/many selves debate. For Kihlstrom and Cantor (1984) and Cantor and Kihlstrom (1987) there is no single concept but "many self-concepts organized as a *family of selves*" (1987, p. 132). They believe that these selves can be set in different contexts, past, present or future; and future selves are likely to contain many possible selves (Markus and Nurius, 1986). Overall these selves are very well-structured, but while some selves may be more central than others, there is no core self.

### 3.1.3 In or Out of Awareness

According to Rogers (1951) "the self-concept or self-structure may be thought of as an organized configuration of perceptions of the self which are admissible to awareness. It is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and to the environment; the value qualities which are perceived as associated with experiences and objects; and goals and ideals which are perceived as having positive or negative valence" (p. 136). Further, "this configuration....as Raimy says....'serves to regulate behavior and may serve to account for uniformities in personality'" (ibid., p. 191). And "as long as the self-Gestalt is firmly organized....Behavior is consistent with the organized hypotheses and concepts of the self-structure" (ibid.). The notion that individuals (strive to) maintain consistency between this self-concept and their behavior will be examined in Section 3.3.1.

Behaviouristic conceptions also imply conscious awareness of a "self-concept". Skinner (1969) and other behaviourists, as do the sociologists, believes that the self-concept, the "description of 'self'" has its origins in society, being taught directly by family and others. Essentially, according to Skinner, the individual learns a certain self-description, of her/his body and behaviour. This self-description is the self-concept, and its details are likely to be similar to those by which s/he would describe another person. It becomes more complex with age and experience, as more models are observed, more rules are learned, and more prompts and differential reinforcements received from others during symbolic social interaction.

Secord (1968) advanced a behaviouristic view of the self-concept, suggesting that "self-referent behaviour" might be a more suitable term for the structure/process than "self-concept". Thus the "self refers to verbal and affective behaviors an individual displays with respect to himself as an object" (ibid., p.349). He believes that the self does not exist apart from these behaviours, and it is therefore no sort of entity. Further, he suggests, self-referent behaviours take on different forms under varying conditions and in interaction with different people. Jellison (1981) claims that the self is a "social fiction", and that all public self-image management can be explained with reference to reward or punishment contingencies which are operative in the external environment.

As was stated in the previous chapter, according to Bem's (1972) self-perception theory we draw conclusions about ourselves in an identical manner to that in which we learn to characterize others. Such a process is likely to be one of which we have considerable awareness. While it is probable that we sometimes do learn about ourselves in the manner envisaged, it seems unlikely that it is the whole story. Why, for example, would actors and observers come to different conclusions about the underlying cause of an action (situational or dispositional) (Jones and Nisbett, 1972), unless somehow different rules were being applied, different information being drawn upon when the self is considered (e.g., Shrauger and Schoeneman, 1979)?

A contrasting perspective on the self-awareness issue is exemplified by Vernon (1964). It may be termed an "onion theory" in that a number of levels of the self in order of "depth" are distinguished within it. These are -

- (1) The "social self" (or "selves"), that is, the various traits or the number of roles or approaches to self-presentation the individual has which may be altered by social skills training.
- (2) The conscious "private self", which may generally be revealed to the individual's friends, although some may not see it clearly themselves, tending to perceive only level (1).
- (3) The "insightful self" is that self that the individual might really be, or really is, after therapy has broken down defenses, or friends have pointed out inconsistencies in the individual's thought and action (Vernon accepts that there are methodological and conceptual problems in determining what an individual is really like).

(4) The repressed, "deep self", which is unknowable except through analysis.

An important aspect of the more recent cognitive approaches to the self-concept is the notion that, being a knowledge structure, it can in a sense only be what is known. Thus what might be termed a "vertical" (from a visible public self through layers down to a hidden private self) "onion theory" approach to conceiving of divisions of the self is not a conception which is currently in vogue within mainstream experimental psychology. Nevertheless, it could be noted that even within cognitive approaches some findings have resulted which indicate that the processing of certain self-relevant information can occur outside of conscious awareness. For example, Bargh (1982), using a dichotic listening task, found that automatic processing of self-relevant trait information occurred in "those who (had) acquired chronically accessible constructs for it" (p. 433).

Among cognitive approaches, models described by Kihlstrom and Cantor (1984), for example, incorporate the notion of "levels" of self, but in a "horizontal" rather than a "vertical" direction. That is, in considering the structure of the "family of selves", they postulate a complicated net of "sideways" interrelated associations rather than sets of knowledge conceptualized as being at any level from "surface" to "deep". Each self-concept is likely to be hierarchically organized and interlinked with other self-concepts forming a "tangled web" of associations. In making an analogy between the internal structure of these self-concepts, and the prototype model of natural categories described by Rosch (1973), Kihlstrom and Cantor imply that some selves will be more accessible than others. In Rosch's model "category representation in terms of average or typical attributes is referred to as a prototype" (Medin, Altom and Murphy, 1984, p. 334). Others have also made an analogy between the self-concept and a prototype (e.g., Rogers, 1981). When understood in this way it seems to follow that some aspects of the "self-concept" will be more likely to be in awareness, and/or more frequently brought into awareness.

#### 3.1.4 The Spontaneous Self-Concept

The important interaction between theory and methodology is very evident in relation to approaches to the self-concept. The clarification of a satisfactory model of the self-concept has probably been hindered by methodological difficulties. Measurement strategies are discussed more fully subsequently, but it could be noted here that recent approaches have emphasized empiricism, while still being concerned with the personal quality of each individual's self-concept. For example, Jones, Sensenig and Haley (1974) who were interested in the contents of college students' self-concepts used a free-format because a preselected vocabulary might "fail to provide the respondents with categories which are relevant or meaningful with respect to their particular perceptions" (p. 36). They asked 300 students to describe their "most significant characteristics". The respondents at first provided positive trait terms, and later more conditional terms, and even later specific situations. These sequencing effects were of great interest to the researchers, who believe

that they have found evidence that some sort of hierarchy of self-information is stored. This view is consistent with the model of Kihlstrom and Cantor (1984).

After subjecting their data to hierarchical clustering and non-metric dimensional scaling, Jones et al noted that the self-descriptions often contained apparently contradictory semantic units, for example, "adventurous" and "cautious", in the same cluster. The authors concur in Gergen's (1968) view that "the popular notion of the self-concept as a unified, consistent, or perceptually 'whole' psychological structure is possibly ill-conceived....it....seems that the more 'natural' state of the organism is one which includes numerous disparities and contradictory tendencies" (pp. 306-307).

Using a similar open instrument, McGuire and Padawer-Singer (1976) found that the "spontaneous self-concept" of children contained items which specifically differentiated the respondent from others. For example, "left-handed" was mentioned if a child was in a class of right-handers. That different aspects of the self-concept can be activated or become salient depending on the situation is consistent with a recent extension of the information processing view, that incorporating the idea of a "working self" (e.g., Markus and Kunda, 1986) . This view is described subsequently.

### 3.1.5 Can there be a Concept of Self?

According to Gergen (1981) any attempt to find a consistency between self-conceptualization and behaviour is bound to fail. He argues that people seem unable to identify a clear set of thoughts or feelings that result in a particular behaviour, that when we look inside for such a source we confront "an obscure morass" (ibid., p. 62). Since "there are no clear ground rules for translating from events in motion to the stable world of self-conceptualization" (ibid., p. 63), and since "behavioral acts do not come packaged with handy labels" (ibid., p. 64), self-conception cannot be reliably constructed.

The implication is that there may be no way of satisfactorily producing a concept of self; indeed "there is logically no single person (including close friends, therapists etc.) who can be trusted for an empirically valid account of character" (ibid., p. 66). If any view of self-conception is to be taken by Gergen, it appears that he would favour the symbolic interactionist position. Accordingly, the possible primary function of the self-concept may be to guide the individual towards a state of "ontologic acceptability". That is, the individual adopts particular self-referring labels in order to achieve consistency with the version of himself held by others. Alternatively, argues Gergen, the self-concept may serve as "personal enhancement". As the individual construes the meanings of her/his actions in the social world, s/he may choose to conceive of her/himself in praiseworthy, critical, proud etc. terms. Gergen argues further that if the individual conceives of her/himself as a failure, s/he may not attempt certain behaviours. Later Gergen (1984) suggests that one approach to overcoming some of the philosophical difficulties he has discussed in relation to self-conception may lie in using the language forms used by people in both self-description and

self-explanation to begin to understand how they do account for varying psychological states and conditions.

There seems to be a clear contradiction both in 1981 and in 1984 between the author's argument and his final resolution. Thus Gergen moves from the position of suggesting essentially that self-conception is an impossibility, to embracing a form of the idea that behaviour, or its linguistic representations, will reflect some aspects of the individual's internal processes or concept of self. Clearly there can be a concept of self, and what is added to other approaches by Gergen's (1981) view is the implication of freedom in constructing a self-concept accorded the individual. This notion is consistent with the information processing approach, and lends an added dimension to this model.

### **3.2 The "Self-Concept": What is it? (2) The Cognitive Approach**

The most recent approach to conceptualizing the self-concept is a thoroughly cognitive one. The information processing model probably represents one of the more important conceptual breakthroughs in this area in the last decade or so. A student of Carl Rogers, Raimy, who is referred to by Lowe (1961) might be regarded as having anticipated this new approach. According to Lowe, "what Raimy called the self-concept was both a learned perceptual system functioning as an object in the perceptual field, and a complex organizing principle which schematizes ongoing experience" (ibid., p. 325).

Reference has already been made to the work of Kihlstrom and Cantor (1984). Greenwald (e.g., Pratkanis and Greenwald, 1985) has also written of the self-concept as an organization of knowledge, arguing that "the self is a complex, person-specific, central, attitudinal schema" (Pratkanis and Greenwald, 1985, p. 322). Increasingly there has been interest within cognitive social psychology in the idea that "people learn and remember information by a process of actively categorizing, chunking, or coding input according to conceptual schemata" (Meichenbaum, Butler and Gruson, 1981, p. 47).

Markus (1977, 1980) elaborates upon this notion and develops a convincing model of just how such processes might operate in relation to the self as a schema or series of schemas (she uses this term in preference to "schemata" when referring to the self). She believes that individuals must necessarily be selective in "what they notice, learn, remember, or infer in any situation" (1977, p. 63), and that "these selective tendencies....depend on some internal cognitive structures which allow the individual to process the incoming information with some degree of efficiency" (ibid.). "Schemata" is the term used for these structures by Bobrow and Norman (1975), among many others. Markus suggests that "the influence of cognitive structures on the selection and organization of information is probably most apparent when we process information about ourselves" (1977, p. 63). Interestingly, Markus uses Bem's (1972) work on self-perception to support her notion that the individual "is an active, constructive information processor" (1977, p. 64), thus integrating an

approach with its origins in what might have been conceived as behaviourist theory into a strongly cognitive model.

Markus, Crane, Bernstein and Siladi (1982) describe the self-concept as it relates to self-schemas. "The self-concept contains representations of our special abilities, achievements, and preferences, the unique aspects of our appearance, and the characteristic expressions of our temperament. With social experience we gain a diversity of self-relevant information that becomes organized into cognitive structures. It is by means of these structures that we categorize, explain, and evaluate our behavior in various focal domains" (ibid., p. 38).

These cognitive structures are Markus' "self-schemas". Their "union....in the various domains" (ibid.) is the self-concept. The schemas themselves "are assumed to be summaries and constructions of past behavior that enable individuals to understand their own social experience and to organize a wide range of information about themselves" (ibid.). For example, a "gender schema" will organize information about gender and particularly as it is relevant to the self.

While "schemas" are simply the hypothesized mediating variables, Markus and other researchers (e.g., Rogers, Kuiper and Kirker, 1977) present data indicating some information processing effects of self-related information as opposed to other-related information. Such effects are apparent even among very young children. For example, Hammen and Zupan (1984) found that third-grade children showed superior recall for words encoded under self-reference instructions, compared to semantic or structural-orienting instructions.

It should be noted, however, in relation to such results, that in other studies different orientation tasks have been found to be as effective as self-reference tasks in facilitating recall. For example, Keenan and Baillet (1980) found that an orientation task involving familiar others as referent was equivalent to the self-referent task in producing better memory than a semantic task. They found, further, that asking subjects to respond to traits in terms of whether or not they described a familiar city resulted in as good a memory for the traits as did the self-referent task. Klein and Kihlstrom (1986) found that under some circumstances a semantic orientation task compared to a self-referent orientation task led to superior memory for target words. Thus it seems that the self is not reliably the most powerful adjunct to the cognitive organizing of information (cf. Higgins and Bargh, 1987).

Nevertheless, it is likely that one important function of the self is to process personally relevant information (e.g., Rogers et al, 1977). Rogers et al found that self-referring adjectives were recalled better than other adjectives. They conclude that for "self-reference to be such a useful encoding process, the self must be a uniform, well-structured concept" (ibid., p. 686). They go on to discuss how various traits (or "subschemata") and specific elements (e.g., individual behaviours) can be organized within this structure.



Markus' (1977) view is that "self-schemas include cognitive representations derived from specific events and situations involving the individual....as well as more general representations derived from the repeated categorization and subsequent evaluation of the person's behavior by himself and by others around him" ( p. 64).

Some traits or characteristics will be salient (Rogers et al, 1977), and some will be more central (e.g., Snygg and Combs, 1959). Markus expands these notions by arguing that there may be certain areas in which the individual may simply not have a schema. She suggests that individuals may be constrained by the "context of the situation, the necessity for a response, or other experimental demands" (1977, p.64) to rate themselves as having/not having certain characteristics. The endorsement of a trait adjective may thus reflect a self-schema, but "only when a self-description derives from a well-articulated generalization about the self can it be expected to converge and form a consistent pattern with the individual's other judgments, decisions and actions" (ibid., p. 65).

Using her own preferred technique of ascertaining whether or not subjects have self-schemas in specific areas, namely the conjunction of extremeness of self-rating on a given dimension with self-rated importance of that dimension, Markus finds a relationship between the ratings of subjects and their subsequent behaviour. Domains examined have been "dependence-independence" (1977) and "masculine-feminine" (1982). Apparently there is a mechanism for maintaining consistency between self-concept and behaviour. And, in addition, the self actively works at processing information, it "minimizes inconsistencies, glosses over differences, and helps achieve feelings of self-consistency" (Markus, 1980, p. 126).

The fact that individuals are often "highly malleable with respect to self-conception" (Gergen, 1981, p. 65) can be accommodated within Markus' view, since structure and process, as conceptualized within her model, interact continuously as new information becomes available. Moreover, recently Markus and her colleagues (e.g., Markus and Kunda, 1986) have extended their notion of the self-concept to include the notion of a "working self". This is regarded as that subset of self-conceptions which is currently active, and is selected from an available universe of "the good selves, the bad selves, the hoped-for selves, the feared selves, the not-me selves, the ideal selves, the possible selves, the ought selves" (Markus and Kunda, 1986, p. 859).

In reviewing the various approaches to defining the self-concept it has become clear that most theorists envisage an intimate interrelationship between self-concept and behaviour. Often it has not in fact been possible to present a "definition" without implicit or explicit reference to the theorist's ideas concerning this relationship. This area, and the parallel area, that of the attitude/behaviour relationship, will be discussed in Section 3.3.1. One of the assumptions underlying the research to be presented here is that some kind of "consistency" will be found between the self-concept, or more specifically, certain self-

schemas, and behaviour, and that under certain circumstances this consistency may be enhanced in response to attributional praise.

### 3.2.1 Schemata and Self-Schemas: Where do they fit in?

Although the issue of self-schematism as an alternative conceptualization of the self-concept has already been introduced and will be considered again in the chapter on moderating variables, it is also important to outline some of the theoretical underpinnings of self-schema theory. This is necessary because it lays the basis for subsequent discussion of methodological issues (see Chapter 4) and for the development of one of the measures used in the research (Self-Construction Questionnaire).

#### 3.2.1.1 Schemata: Definitions

In the simplest terms schemata may be defined as "hypothetical cognitive structure(s)" (Cohen, 1981, p. 49) or "generic knowledge structures" (Locksley, Stangor, Hepburn, Grosovsky and Hochstrasser 1984, p. 471). Certainly most definitions incorporate these notions, many also including reference to the presumed active and malleable nature of the schema as it encodes, organizes and stores information, and to the network of associations and interconnections comprising the schema. Despite Cohen's (1981) observation that "the term schema has been widely used by cognitive and social psychologists, though frequently without specifying its definition" (p. 49) and the assertion by others (e.g., Brewer and Treyns, 1981) that it has no agreed definition, definitions and discussion of the concept have proliferated.

Bartlett (1932) has generally been credited with coining the term "schema". The schema represents "an active organization of past reactions, or of past experiences, which must be supposed to be operating in any well-adapted organic response" (*ibid.*, p. 20). In more recent conceptualizations of schemata their properties have been elaborated to include the ability to guide the organization of incoming information and to infer information missing from the input (Thorndyke and Hayes-Roth, 1979). While not contradictory to Bartlett's view, the latter conceptualization emphasizes the encoding role of the schema rather than its role in behavioural choice or output.

It does seem that there are different conceptions of the meaning of the term "schema" and of the role of this hypothetical entity. Visciola (1984) identifies three different approaches to the problem of knowledge in models of perception, memory and comprehension. These approaches are reflected in the conceptualization of the schema in the models. Proponents of the constructivist model conceive of humans as active information-seekers who act upon the environment; accordingly the schema is seen within this model as a dynamic, epistemic structure. Within human information processing models, by contrast, the schema is treated as a static structure and humans as relatively passive information processors. In the final model, the ecological model, there is no conception of a structure between subject and object.

Certainly there has been confusion over whether a schema is a structure and what its properties and contents might be. Taylor and Crocker (1981) define a schema as "a cognitive structure that consists in part of the representation of some defined stimulus domain. The schema contains general knowledge about the domain, including a specification of the relationships among its attributes, as well as specific examples or instances of the stimulus domain" (p. 91). Further, they believe that ".....one of the chief functions of a schema is to provide an answer to the question 'What is it?' The schema provides hypotheses about incoming stimuli, which include plans for interpreting and gathering schema-related information....." (ibid.).

In 1975, Norman and Bobrow, who were primarily interested in the schema's information processing role rather than its information gathering role, wrote of the schema "(it) consists of a framework for tying together the information about any given concept or event, with specifications about the types of interrelations and restrictions upon the way things fit together. Schemata can activate procedures capable of operating upon local information and a common pool of data" (p. 125).

The schema is thus seen as a structure with specific functions. In suggesting that schemata are used by the cognitive processing system to structure incoming information, Cohen (1981) uses the terminology and concepts from Norman's (1976) model of cognition. Schemata can thus be considered to be operating at any of the stages of encoding, storage, or retrieval of information. As Tesser (1978) says

"a schema is a naive theory of some stimulus domain and the individual using it a 'naive scientist'....when we apply a particular schema for thinking about some stimulus object it does two things. First it tells us what to attend to. Like a scientific theory, it makes some attributes relevant, that is salient, while allowing others to be ignored. Second, a schema contains the network of associations that is believed to hold among the attributes of the stimulus and thereby provides rules for thinking about the stimulus" (p. 290). Moreover, "....if information conveying some relevant attribute is unavailable from the stimulus itself or is ambiguous or is unavailable from memory, the schema allows for 'filling in' of such information with 'default options'" (ibid.).

Alba and Hasher (1983) view the role of the schema in current theories thus: the "guiding schema or knowledge framework....selects and actively modifies experience in order to arrive at a coherent, unified, expectation-confirming and knowledge-consistent representation of an experience" (p. 203).

Hastie (1981) makes reference to three different types of schemata. He believes that the first category which can be identified contains central tendency or prototype schemata (described, for example, by Rosch, 1973). Secondly, he identifies template schemata which simply act as a "filing system" for incoming sensory data rather in the manner suggested in the definition of Norman and Bobrow cited above. The final category is that of procedural

schemata, which may be characterized by Neisser's (1976) definition as "...that portion of the entire perceptual cycle which is internal to the perceiver, modifiable by experience, and somehow specific to what is being perceived. The schema accepts information as it becomes available at sensory surfaces and is changed by that information; it directs movements and exploratory activities that make more information available, by which it is further modified...." (p. 54).

Procedural schemata make sense of incoming information and, in addition, "function as a plan of the sort described by Miller, Galanter and Pribram" (ibid.). Further "the schema is not only the plan but also the executor of the plan. It is a pattern of action as well as a pattern for action" (ibid.).

If it is considered, generally the organization of schemata is seen as hierarchical. Taylor and Crocker (1981) discuss the level of abstraction of a schema which they conceive as a pyramidal structure, hierarchically organized with more abstract or general information at the top. Nested within general categories is more specific information. At the lowest level in the hierarchy are specific examples or instances of the schema, such as specific people or events. Cohen describes this top-down organization thus, "(it) represents associations among lower level units of information (i.e., the most concrete or closest to the peripheral perception) resulting in a functional higher-level cohesive and meaningful unit" (1981, p.49).

In discussing a way in which schemata might operate, Cohen (1981) (in the context of person perception) envisages the "activation" or stimulation of a concept or feature that is stored in long-term memory leading to the activation of other elements across and up into the hierarchy, until the incoming information has been encoded, interpreted and stored within the terms of the schema.

Alba and Hasher (1983) derive a "modal schema theory" from a number of diverse approaches. On the basis of this theory they suggest that there are four basic processes which characterize "schema-driven encoding of complex information" (ibid., p. 204). Thus, according to a theory incorporating all these processes, only information relevant to the currently active schema will be selected from the environmental array, its semantic content will then be abstracted, and this meaning will then be interpreted consistently with the schema. Whatever has been thus processed will then be integrated into the existing knowledge pool relevant to that experience. Later reconstruction, a fifth process, may occur when a memory is sought.

### 3.2.1.2 Self-Schemas: An Extension of the General Concept of "Schemata"

Cognitive social psychologists have adopted the notion of a schema as a knowledge structure and applied it to the processing of social information. Kelley and Michela (1980) distinguish four broad types of social knowledge structures or schemata that guide attributional inferences. These are person schemata, either of individuals or groups,

situation schemata or scripts, viz. likely and expected behaviour in various social settings, and outcome schemata, or the probable causes of success and failure, and the one of greatest interest in the context of this discussion, the category of self-schemata, or prior beliefs and expectations about the self.

Markus and her associates (e.g., Markus, 1977; Markus, Crane, Bernstein and Siladi, 1982) have incorporated the major conceptualizations of schemata outlined above into a theory of the self and its operation. The general definition is as follows: "self-schemas are assumed to be summaries and constructions of past behavior that enable individuals to understand their own social experience and to organize a wide range of information about themselves" (Markus et al, 1982, p. 38).

They are assumed to contain a potpourri of items - specific incidents, general representations acting to summarize past experiences, and general traitlike terms, as well as images and representations that are not easily described in words. Lord (1980) would probably question the inclusion of "images" in schemas (see also Lord, 1987). He investigated the differential effectiveness of schemas and images as memory aids. In this context he sees the self-schema as "a cognitive framework of verbally or semantically encoded generalizations or propositions about the self (e.g., "I am friendly"), an existing cognitive structure into which new information is integrated" (Lord, 1980, p. 258).

In Markus' view individuals will vary in the content and organization of their self-schemas. Moreover, there are likely to be universal schemas concerning aspects of behaviour which are "so prominent and central" that everyone develops at least a rudimentary schema in this domain. Gender is one example used. If an individual does develop a more complex schema regarding gender, as some do, "these networks of meanings are used in thinking about, describing, and evaluating the self; it is then that a self-schema may be thought to exist" (Markus et al, 1982, p. 39).

Markus has used the schema framework extensively, showing across a number of studies that individuals with self-schemas in a particular domain can

- (1) evaluate new information with respect to its relevance for that domain
- (2) process self-relevant information in that domain (e.g., make judgments and decisions) relatively easily and with confidence
- (3) recall personal behavioural examples in that domain
- (4) predict their own likely behaviour in that domain, and
- (5) resist information contradictory to the schema (see Markus and Smith, 1981).

Markus' use of the term "schemas" is thus probably close to the notion of "procedural schemata".

While elaborating her theory, and applying it empirically, Markus still admits that "little can be said at this time about the structural nature of schemas, and most of their assumed properties and functions remain to be demonstrated...." (Markus et al, 1982,

p.38). Thus like other hypothesized intervening variables such as "the self-concept", or "attitudes", or even "traits", self-schemas are rather elusive. In a sense their presumed existence is a useful fiction which allows researchers to systematize their thinking about cognitive processes. In actuality such structures have no reality except as manifest in behaviour, but "...the same is true of other cognitive conceptions, such as frames and scripts. Yet these concepts have been found to have solid heuristic value in organizing empirical findings and guiding research" (Markus et al, 1982, pp. 38-39).

Nevertheless, Wyer and Srull (1981), in their discussion of the effect of trait accessibility on person judgments, argue that we must ultimately understand more precisely the range of behaviours and situations to which schemata apply. They conclude that in this regard "our present conceptualization of a schema is admittedly rather underdeveloped" (ibid., p. 192) and, "more attention must be given to the structure and organization of such schemata and the concepts contained in them" (ibid.). These writers have themselves gone on to develop a complete model of social cognition (Wyer and Srull, 1986) which does not incorporate the schema construct as others have used it.

Some writers have been dissatisfied with the associative metaphor of long-term store. For example, Wyer and Srull (1980, 1981) advance a different model of the long-term memory. They regard it as a set of content-addressable storage bins, each bin tagged with a header that specifically identifies the concept or set of concepts to which its contents refer. Thus bins may pertain to particular individuals, to prototypic persons or groups, or to specific events or general ones. One bin might contain information about a person, for example, with each "configuration of attributes and events" (1981, p.166) contained therein being referred to as a schema. Viewed from another perspective the bin itself might well be conceptualized as the schema. On the other hand, in discussing Markus' work, they specifically consider self-schematism in relation to their model, suggesting that "a person is likely to be schematic with respect to those attributes that make up the header of the person's general 'self' bin and to be aschematic with respect to attributes that, although perhaps implied by information contained in the bin, are not included in its header" (1986, p. 352). Their bin conceptualization of the self is distinct from that of hierarchical or associative models referred to above (e.g., Kihlstrom and Cantor, 1984), specifically in that the self is not a single node or set of nodes in memory. Rather, self-representations are distributed throughout the memory system across a vast array of bins pertaining to many objects and events.

### **3.3 The Self-Concept: How does it Develop and Change? How is it Maintained?**

Gecas, Calonico and Thomas (1974) distinguish between a "mirror" and a "model" theory of the development of the self-concept. The emphasis of the former theory is on the development of the self-concept as influenced by the evaluative responses of others, and the feedback others give as to how the individual appears. The focus of the "model" theory, on

the other hand, is upon the conditions under which the individual adopts as her/his own the characteristics of others. As Bandura (1969) wrote, "people generally adopt the standards for self-reinforcement exhibited by exemplary models, they evaluate their performances relative to that standard, and then, as their own reinforcing agents, reward themselves according to the internalized standard" (p. 33). A central hypothesis of this theory is that a child's self-concept will be positively related to her/his parent's self-concept. This hypothesis has received some support (e.g., Bandura and Kupers, 1964; Marston, 1965; Bandura, 1969; Staats, 1971).

The symbolic interactionists believe that the self-concept contains the reflected appraisals of others: thus it only develops through interaction with others. A central hypothesis would thus be that a child's self-concept would be positively related to parental evaluation of the child, or that any given individual's self-concept will be similar to the conception held of him by others. These propositions have both been supported by some early studies (e.g., Miyamoto and Dornbusch, 1956; Couch, 1958; Helper, 1958; Maehu, Mensing and Nafager, 1962; Sherwood, 1965; Quarantelli and Cooper, 1966).

The belief that social others are the primary source of information about the self has been examined in detail by Shrauger and Schoeneman (1979) who review evidence for this view of the origin of the self-concept. Studies bearing on the issue are of two main types, those in which feedback in uncontrolled, naturally-occurring interactions is examined, and those in which controlled feedback is given. Results from a range of studies in the first group overall "show modest to strong correlations between individuals' perceptions of themselves and the way they assume others perceive them" (*ibid.*, p. 552). But, more importantly from the point-of-view of "mirror" theory, studies looking at actual perceptions show "much less agreement between self-judgments and actual judgments by others than between self-judgments and perceived judgments" (*ibid.*).

That is, a number of studies have shown that the perceived reactions of others are closer to the self-concept than are the actual reactions. On the basis of their review of these studies, the authors conclude that there is not much evidence from naturalistic studies that "people's views of themselves are shaped by the opinions of others" (Shrauger and Schoeneman, 1979, p. 559). However, they do suggest that this may be due "primarily to the lack of repeated assessments of self-perceptions and others' perceptions whereby movements of one toward the position of the other could be determined" (*ibid.*, pp. 559-560).

Studies of controlled feedback and its effects on behaviour were discussed in an earlier chapter. Shrauger and Schoeneman suggest that a variety of factors influence the extent of change in self-description in line with such feedback. These include discrepancy of the feedback from the recipient's perception (mentioned previously), source of the feedback, and consensual validation of the feedback. Shrauger and Schoeneman believe that experimental demand characteristics will be important too. As has been noted previously,

they conclude with the suggestion that to understand how others' opinions affect our self-conceptions, the frequency of such communications in everyday life must be determined. One study described in the present thesis was an attempt to do this, but a questionnaire technique was used rather than the naturalistic study of very young children advocated by these authors (see Chapter 11 for a description of this work).

Although in previous decades the idea that the first few years of life are important was a common one, more modern empirical psychology in which the flexibility and active restructuring of the self-concept in line with ongoing events is stressed, casts doubt on such a view. Adler (1927), an early personality theorist, believed that attitudes, feelings and perceptions were determined very early and that as a result it was difficult for the "style of life" to be changed later. Sullivan (1940) wrote "... (the self) tends very strongly to maintain the direction and characteristics given to it in infancy and childhood" (p. 10).

The work of more recent developmental psychologists suggests that with increasing age a more abstract self-conceptualization develops (e.g., Montemayor and Eisen, 1977). Thus self-description which initially contained objective characteristics like appearance, address and so on, increasingly contains personal characteristics, beliefs and motivations. According to Markus, "exactly how the concrete, somewhat shallow self-concept of the child evolves into more complex and differential notions of the self is unclear" (1980, p. 113).

Markus (1980) specifically discusses the development of self-schemas, which she considers to develop gradually once the prerequisite cognitive abilities have developed. The same Piagetian (1954) processes of assimilation and accommodation will occur in the development of self-schemas, as in the development of schemas about the world in general. Further, the self is the reference point for all schemas to the egocentric child. The work of Grusec and Redler (1980) which was discussed in Chapter 2 demonstrates the importance of the interaction between the cognitive capacity of children at different ages and feedback from the environment. It will be recalled that these researchers determined that somewhere between eight and ten years of age children became more likely to treat praising statements about both their acts and their dispositions as having implications for their future behaviour (at least in relation to pro-social behaviour).

As to whether the "mirror" or the "model" theory offers the best explanation of the development of the child's self-concept, Gecas, Calonico and Thomas (1974) conclude that various aspects of it may be differentially affected by both processes. They do suggest that younger children tend to model their parents more than do older children, and that as the scope of their relationships broadens with age, children begin to identify with others more. They summarize their conclusions thus, "while the data do favour the 'looking-glass' conception of self-concept formation, the findings are more suggestive than they are conclusive of the relative importance of mirroring versus modelling processes" (ibid., p. 67).



Rosenberg (1973) might well not agree with Gecas et al about the diminishing role of parents on children's ideas about themselves. He believes that "not all significant others are equally significant, and those who are more significant should have greater influence on our self-concepts" (ibid., p. 830). One interesting section of his paper is that concerned with the locus of children's self-knowledge. In relation to the characteristics "smart", "good" and "good-looking", substantial percentages of children believed that the most significant other would know better than they how they rated on these characteristics. Percentages for the four age groups, 8-10, 11-13, 14-15 and 16-18 years, show that even among the late adolescents many had greater faith in the perceptions of the significant other than in their own self-perceptions. The most significant other (usually the mother) also "knows best what (the individual is) like deep down inside". It seems from this that some significant others can indeed tell an individual what s/he is like and be believed.

Part of the thesis presented here is that, for both children and adults in naturalistic settings, information about characteristics is often given incidentally in praising locutions, and that under certain circumstances these characteristics will come to be incorporated into the self-concept, or at least structure some of the subsequent information processing and behaviour in which the individual engages. Referring to Gergen's argument again, that "behavioral acts do not come packaged with handy labels" (1981, p. 64), it may be that it is a rather positive experience when a given act is provided with a "handy label" by an observer, so that the recipient of the attribution is rather inclined to accept it if possible. Labels referring to characteristics are usually fairly general, so that probably several instances of the individual's behaviour which are consistent with the label can be recalled (Wegner, 1980; Kanouse et al, 1981). When people have well-formulated and working schemas in specific domains, they will be more easily able to reject contradictory information, whereas when their self-conceptions are only vaguely formulated, attributional praise might have some impact (e.g., Wegner, 1980). Part of the purpose of this research project was to elucidate some of the limiting conditions under which attributions are accepted in such a way as to affect behaviour. A logically prior question of course is that of whether attributions do in fact mediate behaviour at all. Some evidence was presented in Chapter 2, and the issue will be discussed further in the next section.

### 3.3.1 The Self-Concept: Consistency, and Attribution-Behaviour Relationships

In reviewing the various approaches to self-conceptualization, it has become clear that most theorists envisage an intimate interrelationship between self-concept and behaviour. As has been noted previously, it has often, in fact, not been possible to present a "definition" without explicit or implicit reference to the theorist's notions in this regard. Some evidence is available within the framework of Markus' theory, for example. Thus she found that students with self-schemas along the dimension "dependent - independent" had faster response latencies in deciding whether a schema-related trait (e.g., individualistic) was self-descriptive or not, compared to "aschematics" who did not apparently use this dimension.

The former group also had more success in retrieving specific behavioural episodes that showed why a given trait (e.g., ambitious) might appropriately be used to characterize them.

Some researchers have looked at the relationship between the general self-concept and behaviour (e.g., Reckless, Dinitz and Murray, 1956; McPartland, Cumming and Garretson, 1961) but, generally speaking, there has to date been a dearth of evidence suggesting that a relationship exists between an individual's self-conceptualization and behaviour. More research has been conducted within the attitude domain where recent work has shown that, with care and attention to relevant variables, relationships do obtain between the attitude and its associated behaviour. According to Scheier and Carver (1980) the relevant questions now, rather than being "Why don't people act like their attitudes indicate they should act?", are "Whose behaviour will fit well with their attitudes and whose won't?" and "What are the reasons for this difference between people?". It could be argued that schemas about self, and schemas about objects, issues, and other people, are not very far removed from one another in that both affect the processing and interpretation of ongoing experience, and subsequent behaviour.

Pryor (1980) looks at the causes of behaviour, suggesting that many theorists, particularly in the area of attitude self-reports (e.g., Wicker, 1971), now believe that the weak relationship apparent between self-reports and behaviour is partly due to the fact that behaviour has multiple determinants. Wicker found a low correlation between stated attitudes to church and the actual frequency of church attendance (a "paradigm" finding in the attitude-behaviour relationship research). However, when he also asked subjects about other factors, such as the effect of extraneous events like the weather, their evaluation of church-going, and their perceptions of any actual consequences of going, the correlation of interest became significantly higher. In a similar vein, Ajzen and Fishbein (1977) found that attitudes and intentions would be poor predictors of behaviour unless a fairly strict correspondence between specific attitude and specific behaviour were maintained. Were the distinction between a specific self-concept and the general self-concept to be similarly maintained (see Brookover, Le Pere, Hamachek, Thomas and Erickson, 1965, for one example), the self-concept might well predict behaviour. Comparative examples from the attitude and self-concept areas might be "I am a church-goer" and "I am a church-goer when the weather is fine and no-one is visiting", compared to "I am good at schoolwork" and "I am good at addition and subtraction". In the Ajzen-Fishbein model it is specified that attitudes and subjective norms determine intentions which are in turn the direct antecedents of behaviour. This "theory of reasoned action" implies a very deliberate decision process in which individuals consider their beliefs very carefully, and sum them to arrive at a specific attitude towards the act or behaviour. This attitude, combined with normative beliefs, is then weighed before action is undertaken. This is an active area of investigation in relation to attitudes, with models expanding the terms of the Ajzen-Fishbein model also being developed (e.g., Speckart and Bentler, 1982).

Mischel's (1969) work, in a different but related area, is also discussed by Pryor (1980) in his attempt to sort out whether behaviour is predictable. Mischel reviewed a range of research reports in which the relationship between responses on personality inventories and behaviour was examined. He found that the average correlation was only about 0.3, meaning that a large percentage of the variance in overt behaviour is left unexplained by such measures. Mischel's interpretation was that behaviour is situationally specific, its determinants lying in forces and demands specific to a given situation, and not in an individual's characteristics or dispositions. Looked at from one perspective the trait-situation debate is at the heart of the self-concept/behaviour question, but the emphasis is different. Rather than asking how much of the variance in behaviour can be accounted for by an individual's "given" characteristics, and how much by the situation, one might ask to what extent, or when, can behaviour be explained with reference to some consistency between an individual's self-attributions and her/his overt performance, and to what extent, or when, is that behaviour "merely" a self-presentational display (cf. Snyder's (1974) individual variable "self-monitoring" - see Chapter 4).

Bem and Allen (1974) to some extent clarified the issue of consistency in the self-concept-behaviour relationship when they found that personal relevance of the characteristic was an important factor. Subjects rated themselves on "friendliness", and also rated the variation in their friendliness across different situations. For those who remained relatively constant, friendliness was considered as having personal relevance, whereas for those who varied, this characteristic was not thus regarded. The notion of importance of a given characteristic has been taken up by Markus in various of her accounts of her work and will be discussed in more detail in relation to the present project at other points in this thesis (see especially Chapter 10).

In 1969 Kiesler, Collins and Miller noted that although a great number of consistency theories had been advanced there was a distinct lack of attempts to integrate these. Historically, it is clear that "consistency" has been regarded in motivational terms, that is, it has always been seen as "the consistency motive", some kind of intra-psychic force. To this extent it may be aligned within psychology with dissonance theory (Festinger, 1957) with its origins in Lewinian motivational theory. The kind of individual envisaged within this model is tension-laden and goal-directed, in contrast to the individual constructed by (for example) Heider (e.g., 1958) and Bem (e.g., 1972), who is likely to be comparatively passive, except for her/his active perceptual structuring of the world. Predictions relating to the attitude-to-behaviour relation are also incorporated in a more recent motivational theory, Wicklund's (e.g., 1982) self-awareness theory. In many studies it has been found that increasing self-focussed attention (for either the attitude measure or the behaviour measure) leads to greater attitude-behaviour consistency, presumably because individuals are striving for this consistency.

Secord (1968) outlines the two basic ideas assumed to underlie all consistency theories. These are, firstly, that certain cognitive elements have a logical relation to each other while others do not, and secondly, that a logical inconsistency between two related elements is apt to be disturbing and lead to attempts at resolution. Research generated by Festinger's (1957) cognitive dissonance theory seemed initially to support these notions, and although the explanatory power of the model has been seriously challenged by Bem (1972), it has proved very difficult to devise a "crucial" test between opposing models. In any case, more recent work examining post-decisional information-seeking has produced results consistent with the original model (e.g., Frey, 1981).

According to Gecas (1982) there are two literatures in social psychology in which the idea of self-consistency as a motive is addressed. One is the psychological literature on the self-concept as a cognitive organization of knowledge and beliefs. Here consistency refers to the cognitive organization of attitudes about the self. The other is the sociological literature on identities as sources of motivation, wherein consistency is used in relation to the congruence between identities and role behaviours. Stryker (1980) has argued that the higher the salience of an identity within the self-concept to which the individual is committed, the greater is its motivational significance. This notion has been supported empirically (e.g., Stryker and Serpe, 1982).

Middlebrook (1980) outlines two meanings of consistency as well, but her view differs from that of Gecas. According to Middlebrook, the individual may be seen as striving for psychological consistency among values, attitudes, beliefs and behaviours at a given moment in time. In her other sense of consistency the individual tries to achieve a self-concept which is the same over time and in different situations.

Clearly there are various senses of "self-consistency". One which might underlie attribution-behaviour relationships is different again from those presented. It is more akin to that proposed by psychologists pursuing the "attitude-behaviour relation" referred to above. That is, under certain circumstances, individuals will maintain a consistency between their idea of self in a given area and their behaviour in that area, that if they have a clear and salient self-concept in a specific area, the behaviour will be internally attributed, flowing from self as "origin", and will be predictable in being consistent with the self-conceptualization, just as it would be were it to result from a specified attitude. This may be a motivational, "striving" process or it may be one more like that envisaged by Fazio (1986), a spontaneous process not guided by conscious mentation.

Fazio contrasts his model of the attitude-to-behaviour relation with the Ajzen-Fishbein model and with Wicklund's approach, rejecting the "rather deliberate and conscious nature" (Fazio, 1986, p. 236) of these process models. He believes that most daily activities are not important enough to cause such detailed assessment. The first step in his model is the activation of the relevant attitude in memory. If the attitude is accessed in the presence of the attitude object, it will then act as a filter through which the object will be perceived. Thus

perceptions of the object consistent with the attitude will be produced. Since these comprise in part the individual's "definition of the event" which itself influences behaviour, attitude-behaviour consistency is a likely outcome of accessing the attitude. Fazio regards attitude accessibility as crucial, so that factors affecting this step in his envisaged sequence will be most relevant to the final outcome. The manner of attitude formation is also an important variable, with attitudes formed through direct experience with the attitude object relating more predictably to consistency between attitude and behaviour. An analogy could be drawn between this process and that resulting when an attitude-to-the-self or a self-belief is activated. In any case, Fazio considers that an attitude "is essentially an association between a given object and a given evaluation" (1986, p. 214), and there is no reason why that object could not be a self-representation.

Greenwald (1980) is one theorist who views attitude-behaviour consistency from a somewhat different perspective to that presented above. He identifies the motivational element in the self-concept as "cognitive conservatism" which he views as "the disposition to preserve existing knowledge structures, such as percepts, schemata (categories), and memories" (ibid., p. 606). He suggests that the motivation for cognitive conservatism and hence, perceived self-consistency, manifests itself in the active reconstruction of memories and personal history as well as in selective perception. He argues that self-consistency need not mean actual consistency and continuity in self-conception but rather the sense or perception of consistency. That is, Greenwald is suggesting that we have a tendency to create a sense of self-consistency even if it does not actually exist. Similarly, Swann and Read (1981) argue that people create consistency by using their social interactions to, in a sense, extort confirmatory reactions from others, and later, if necessary, selectively recall such reactions.

As outlined previously, Greenwald (e.g., Greenwald and Breckler, 1985) also distinguishes between a public and a private self, arguing that we self-present to a number of audiences including an inner self. This view is compatible with attitude-behaviour consistency models in that an important aspect of the task of the public self is to internalize the evaluative standards of significant others. This then leads to the development of the private self which acts as the inner audience for behaviour, guiding it according to certain internal standards. A consistency between self-definitional self-statements and behaviour would be predicted on the basis of the existence of this private self.

#### 3.3.1.1 Evidence from Applied Psychology

There have been some studies reported in the applied psychological literature, and that concerned with children and school achievement, which suggest that research examining the interactive role of received personal information, self-attribution, and behaviour, may indeed be fruitful. For example, Bugental, Whalen and Henker (1977) predicted that children's causal attributions would act as mediators of the differential effectiveness of two behaviour change programmes. They found that a self-control intervention (internal

regulation by self-controlling speech) produced significantly greater error reduction for non-medicated hyperactive children with high perceived personal causality; social reinforcement (external control) produced trends towards greater error reduction in medicated children with the opposite orientation. Similarly, Copeland (1981) describes cognitive self-instructional training for teaching self-control to impulsive children. Those who made internal attributions for their behaviour improved after this training, whereas those with an external orientation improved after a reinforcement programme. These issues will be taken up in more detail in Chapter 4, a discussion of potentially relevant individual differences.

In a longitudinal study of the self-concept of ability and school achievement, Brookover et al (1965) found, among other results, that a self-concept of achievement is a significant factor in achievement outcomes for children in Years 7-10. Furthermore, the self-concept of ability is not merely a reflection of the memory of past performance or of how teachers had previously graded the child, and it functions independently of measured intelligence in predicting school achievement.

Seligman, Abramson, Semmel and von Baeyer (1979) have found that performance and emotionality can be significantly impaired by a spiralling process of negative self-attribution. This phenomenon, which has been termed "learned helplessness", is least evident in children who externalize the cause of their academic failure, usually males, and most evident in those who internalize it, usually females (Dweck and Goetz, 1978). It seems that it is important to determine the type of attributions children are making, whether they be to effort, ability or luck, so that an attempt can be made to help them understand the internal locus of their successful actions. In relation to moral behaviour, Grusec and Redler (1980) suggest that if children attribute the causes of their own good behaviour to themselves (their own moral character) rather than to external pressure (threat of punishment or hope of reward), they will be more likely to behave well.

Stuart and Guire (1978) looked at correlates of the maintenance of weight lost through behaviour modification. They found that items on a Self-Concept Scale were predictive of success in maintaining the loss. Those who defined themselves as being able to maintain their losses averaged less above goal than those who lacked this self-confidence. This had not been found by Tobias and MacDonald (1977), however, and it may be that the causal relation was the other way around. That is, and Stuart and Guire themselves make the point, perhaps the self-definition was the result rather than the cause of the success at weight management. They argue that, to the extent that a positive self-definition did precede success it may have been aided by the self-attribution effect engendered by a self-help approach. People are more likely to maintain change when they feel themselves instrumental (self as "origin" rather than "pawn") in its occurrence.

### 3.3.2 Self-Enhancement and Self-Presentation

In the previous section "consistency" between self and behaviour, or the desire for feelings of self-determination, were considered as possible mediators of any effect of attributional praise on behaviour. There are other possible mechanisms which might mediate such an effect, specifically the motives for self-enhancement and self-presentation. Both the tendency to see oneself positively, to enhance self-esteem, and the desire to project a positive, even if a false, image, will be discussed. Jones (1973), comparing consistency and self-enhancement theories, argued that any motive for consistency would be weaker than that for self-enhancement. Further, he suggested that support was generally obtained for consistency theories because of the "public" nature of the laboratory situation. In 1960, for example, Reeder, Donohue and Biblarz found that although individuals' ratings of self tend to reflect what others say, these ratings are generally more favourable than those given by other members of her/his group.

If desire for self-enhancement is a social motive, it is presumably tied in with the complex of self-presentational motives. Baumeister (1982) has considered self-presentation in some detail, suggesting that "people use their social behavior as a means of communicating information about (or an image of) themselves to others" (p. 3). He believes, in fact, that much social behaviour is mediated by two main self-presentational motives - to please the audience, and to construct one's public self.

The sociologist Goffman (1959) first described the notion of self-presentation, and psychologists have relatively recently begun to investigate associated phenomena. Goffman viewed every encounter between people as a sort of theatrical performance in which everyone enacts a "line", a complete pattern of verbal and non-verbal acts, which communicates one's view of the situation and the other participants, and especially of oneself (Arkin, 1980). According to Baumeister, such "impression management" need not be conscious, nor either objectively accurate or accurate in the actor's own view. He believes that one motive for self-presentation is to obtain rewards from others, while another is as a means for self-fulfilment. That is, one may desire to become one's "ideal self" (e.g., Rogers and Dymond, 1954) or to convince others that one is really like that ideal self.

Jellison and Arkin (1977) argue that individuals seek social approval by influencing the impressions others have of them because such behaviour is instrumental in obtaining other rewards. If this were so, people should only self-present positively when they expect to benefit by it. Using a simulated business situation, Jones, Gergen, Gumpert and Thibaut (1965) found that the "workers" presented themselves as similar in attitudes to the "supervisor" only when the probability of gaining a positive evaluation, and thus a reward, was high. Arkin (1980) comments that it would certainly be useful to separate situations appropriate for self-presentation from those which are not. "But the goals of gaining

approval may not always be salient to people prior to their behavior, and the 'masks' they wear may not be donned as the result of conscious deliberation. Most likely, some self-presentation strategies are planned and chosen, while others are automatic because they have been used many times before" (Arkin, 1980, p. 164).

Alternatively, an aspect of the self-concept might play a role in selecting strategies for impression management. Schlenker (1980) refers to criticisms of Goffman's (1959) dramaturgical approach, including Gergen's (1968) view that the role of the self is understated. While Goffman believes that the self is simply a product of well-managed interactions with others, Schlenker argues that although the self can be shaped in this way, it can also itself shape interactions.

Arkin, in contrast, believes that psychologists "converge on an overly internal view of the causes of behavior" (1980, p. 165). They do, nevertheless, study the effects of social contexts, and those who view interactions within the self-presentational perspective are likely to be asking a question about the extent to which behaviour that appears at first to reflect internal dispositional factors is actually a response to external forces as well.

Self-schemas and self-presentation will interact, and to that extent self-presentational effects may be considered as an aspect of the self-concept. That is, as Bem (1972) argues, people form attitudes partly from observing their own behaviour, and thus the manner in which they observe themselves appearing in public situations can affect their private conceptualizations. Further, this may be particularly so when that public image meets with consensus from others. Gross, Reimer and Collins (1973) found that subjects showed greater change in their private beliefs towards an attitude position advocated in a speech they were assigned to deliver if they later learned that the audience had rated them "sincere" as opposed to "insincere". Markus and Wurf (1987) believe that there will be an interaction between self-concept and self-presentation which may be revealed if studies are carried out over time.

The "self-fulfilling prophecy" and expectancy effects may be understood in terms of the interaction between self-presentational phenomena and the self-concept. Jones (1964) uses the term "self-construction" to refer to "the attempt to make one's public self congruent with one's ideal self" (p. 3). Another strategy, "ingratiation", is the attempt to please a particular audience, while "signification", according to Baumeister, implies that if others perceive one as having a particular trait this may help one to believe that one actually does have it.

Baumeister notes that in certain areas of social psychology, for example attitude change after counter-attitudinal behaviour, a self-presentational model has proved useful in determining how people respond to evaluations, and in influencing interpersonal attraction. In relation to evaluation, Baumeister says, "after all, the literal effect of evaluations is to tell people what someone else (the evaluator) thinks of them - thus, to tell them something about



their public images" (1982, p. 14). He believes that self-esteem will only be affected if the recipient accepts the evaluation and revises her/his self-concept accordingly. Thus "evaluation necessarily affects one's self-presentational concerns but does not necessarily affect one's self-esteem" (ibid.). Whether the evaluation is public or private is important, as is the matter of anonymity.

Schlenker (1975) found that when subjects expected their performance to be public they described themselves consistently with their (manipulated) expectations of how well they would perform at the task. However, when anonymity was anticipated, subjects' self-presentations were all positive and self-enhancing even if their preliminary feedback had been unfavourable. "Thus, only the likelihood of publicly identifiable, disconfirming evidence will prevent people from presenting themselves in a maximally favourable light" (Baumeister, 1982, p. 15). After examining all the relevant literature, Baumeister's overall conclusion is that "an evaluation is primarily an event that concerns self-presentation" (ibid.).

A further aim of the current research project was thus to elucidate the extent to which praise apparently interacts with some more lasting self-schematic structures, and the extent to which it has a relatively short-term effect, only affecting specific behaviour in the presence of the praiser. That is, it was hoped to determine whether any observed effect of attributional praise was primarily a consistency phenomenon or a self-presentational phenomenon, or whether the two hypothesized mediating mechanisms might interact. As Nisbett and Valins (1972) suggest, the manipulations (in self-perception studies) may be insufficient to alter an attribution, but may cause the individual to question her/his current attribution and "test" the new one by engaging in the appropriate behaviour, thus leading to a confirmation (or otherwise) of the attribution. Alternatively, it may be that different locutions evoke different mediating mechanisms. For example, while the effect of an attributional praise manipulation might be mediated by self-schema re-structuring, perhaps an expectation manipulation might lead only to a temporary self-presentational outcome. In addition there may be interactions with individual variables, such as dispositional tendencies and past experiences. These variables are discussed in Chapter 4.

### **3.4 Measuring the Self-Concept**

The psychologist interested in studying the self-concept inevitably begins with Wylie's (1974, 1979) monumental work. McGuire and McGuire (1981) point out, however, that ninety percent of the studies described by her refer to self-esteem. Yet, when psychologists elicit free responses to the question "Tell me about yourself", generally only about seven percent of the material relates to self-evaluation.

The two books together nevertheless provide a wealth of information about instruments measuring aspects of the self-concept. Despite this, as Gecas (1982) points out, "measurement continues to be a serious problem facing research on the self-concept and the

major obstacle to cumulative and valid knowledge in this area" (p. 26). Although Wylie paints "the most dismal picture of the methodological state of self-concept research" (ibid.), Gecas endorses Wells' and Marwell's (1976) observation that similar methodological problems occur in much social and psychological measurement and particularly in the areas of cognition and motivation.

Basically the self-concept can be measured either according to a fixed-choice format, including Q-sort and self-rating tasks, or according to an open-ended or projective format such as the TST (Twenty Statements Test - respondents answer the question "Who Am I?"). An interesting study by Spitzer and Parker (1976) compared exemplars of each category, the TST (e.g., Spitzer, Couch and Stratton, 1970), 20 semantic differential scales (e.g., Fiedler, Hutchins and Dodge, 1959), the 49 traits of the IAV or Index of Adjustment and Values (Bills, 1958) and the ACL or Adjective Checklist (Gough and Heilbrun, 1965). Having completed these measures respondents indicated which of the instruments allowed them to give the most and least accurate description of themselves.

Results were compared with those of a similar study done in 1965. In that year, the ACL was judged by respondents to most accurately reflect their self-concepts, while the TST was the least accurate; in 1975 these results were reversed. In 1975, according to Spitzer and Parker, there was a greater tendency for preferential ordering, with respondents tending to favour the IAV, a fixed-response instrument with a greater degree of complexity. The authors suggest that their result provides evidence that college students are now less willing to accept the legitimacy of "externally derived self-definitions" (Spitzer and Parker, 1976, p. 242). Apparently the "me" decade has had an impact; Spitzer and Parker believe that an important "consequence of the current movement toward self-discovery is to extend the function of the self beyond that of a factor in cognition....(it now has) a two-valued function, that of both factor and object in cognition" (1976, p. 244).

Presumably if respondents today prefer to provide their own personal constructs they will welcome the opportunity to reject the experimenter's constructs as inapplicable. When a Self-Concept Questionnaire was devised for use in this project respondents were offered this opportunity; the instrument, and how it evolved, is described in Chapter 10.

McGuire and McGuire (1981), in studying distinctiveness of characteristics in the self-concept, favour the free-format "Tell us about yourself", but of course these data must then be content-analyzed. Wylie is generally sceptical about the reliability of free-response instruments like the TST, but it could be argued that if one is to take the recent approach to conceptualizing the self-concept, then one might not necessarily anticipate strong reliability, because with active information processing continuous modification may be occurring.

The issue of measurement, and methodological difficulties, will be discussed again subsequently.

### 3.5 The Thesis

The argument presented above led to a related series of propositions which basically form the thesis underlying the research sequence represented in this project. These propositions are now presented in summary:

- (1) Praise, in its restricted sense of "social reinforcement", is not as effective as it is generally believed to be.
- (2) By creating a classification of praising locutions, an attempt might be begun to explore in more detail differing effects on behaviour of various locutions.
- (3) Different locutions may have differential effects on behaviour by virtue of the specific information conveyed to the praisee in these locutions. Examples used were attributional praise, and expression of an expectation about future behaviour.
- (4) Individuals' self-concepts, both in childhood and adulthood, are likely to be affected by the receipt of specific attributions from others, particularly significant or credible others.
- (5) Should there be differential effects of the varieties of praise, potential mediating mechanisms might be (a) an attempt by the praisee to maintain consistency between self-concept and behaviour, or (b) the desire to self-present so as to please the praiser and project a positive self-image.
- (6) Further, the view of the self-concept being explored is that in which it is regarded as both process and structure, an information-processing model. Thus variables like one's personally judged prior status on a given characteristic could be expected to interact with any observed effects of praise on behaviour.
- (7) There may be different effects of attributional praise on behaviour depending upon whether what is praised is perceived to be within the range of behaviours which can be chosen by the praisee. That is, attributing a characteristic which directly implies an ability may not result in the same outcome as attributing a characteristic which implies a behavioural tendency or propensity.
- (8) A variety of individual difference variables may also interact with observed effects.

It should be noted that unlike the other propositions which were constructed after surveying the literature, and prior to the initiation of the research, (7) was added on the basis of some of the empirical work (see Chapter 8). Points (7) and (8) will be discussed in more detail in Chapter 4. Specific hypotheses generated within each of these propositions will be set out in turn as the empirical work is presented in subsequent chapters.

## CHAPTER 4

### INDIVIDUAL DIFFERENCES AND MODERATING VARIABLES

A large number of individual difference and other moderating variables might conceivably interact with type of praising locution to affect behaviour. A subset of these - reinforcement history, attributional style, and some self-concept variables, including having prior schemas or constructs in certain domains, and self-monitoring - was selected for investigation. A brief review of studies relevant to the particular emphases of the present project is presented for each variable in turn. Measuring instruments are also discussed. In addition, the nature of the attributed characteristic and possible dimensions along which it may vary are considered in Section 4.6. It is argued that some characteristics are such that they will imply behaviours which it is relatively easy for an individual to choose to do, whereas others cannot so easily be expressed, at will, in behaviour. Other variables which have been investigated in some studies, but which are not pursued in the present work, are discussed briefly in the final section of the chapter.

Since some of those variables under consideration probably interrelate in a complex manner and indeed overlap conceptually, it is difficult at times to separate them out in discussion. For example, reinforcement history might be expected to relate to attributional style, and attributional style to being schematic in certain domains. At least one researcher (Carver, 1979) postulates a relationship between self-awareness and "schematism" (see Section 4.3.1). Thus the sectioning imposed within the chapter does not as clearly delineate topics as it might appear to do.

#### 4.1 Reinforcement History

Part of the philosophical stance of behaviourists in explaining behaviour is to opt for inferences about past observable events in preference to current cognitions (e.g., Rachlin, 1977). However, contemporary theorists (e.g., Lacey and Rachlin, 1978) reject the notion that a cause must be in temporal contiguity with its effects. Antecedent influences on behaviour are now said to include both the current external events and the individual's past history of environmental interaction. The effects of consequent events are now regarded by some as governed by a revised law of effect. Baum (1973), for example, rather than stressing the necessity of immediate, temporally contiguous reinforcement, proposes a correlation-based law which operates in an aggregate fashion over time.

The term "reinforcement history" has generally been used by behaviourists to refer to a specific sequence of events presumed to underlie the presently observable behaviour. A similar concept, although not always under the identical name, is frequently used by psychologists of all schools to account for current behaviour. For example, in the area of attitudes, Kleinke (1984) outlines two models for conceptualizing the relationship between attitudes and behaviours. One of these might be regarded as a "cognitive" model, in which the attitude is presumed to be primary in the causal chain leading to behaviour. In the other,

which follows the operant conditioning paradigm, the sequence is reversed, with the attitude being caused by the behaviour. In both models "past experiences" or "learning history" are incorporated as important underlying causes of the attitudes which are now available for measurement. In both models, as in any theoretical description of the causes of a behaviour, such a history cannot be observed directly.

Presumably partly because of the difficulty of measurement, reinforcement history as it has been studied in the laboratory has generally meant the treatment of the subject immediately prior to the experimental manipulation(s). Thus Weiner (1971), for example, in investigating the interaction of reinforcement history with the effect of reinforcement on children used an "analogue" of that history. This manipulation was "a series of 3 Success(S)/Failure(F) pretraining experiences". Other studies are summarized by Waters (1980). Certainly "reinforcement history" in this sense is plainly observable, but it does seem a very weak analogue to the myriad of reinforcing events an individual would have experienced throughout a lifetime, which events are assumed by behaviourist and cognitivist alike to shape responsiveness to ongoing experiences.

Perhaps an important point of divergence between behaviourists and cognitivists lies in the insistence by the former on the causal role of these inaccessible experiences. That is, to the behaviourist what is presently observable has been shaped up by a specific history of reinforcement, which is unfortunately unobservable. The cognitivist, on the other hand, may hypothesize that some unspecified prior events may play a causal role in shaping behaviour, but as long as these events are not measurable, s/he looks for relationships among those aspects of current behaviour which are accessible to measurement. These might include the expressions of cognition and perception which are reflected in responses to questionnaires.

In this study, then, "reinforcement history" is operationalized as responses on certain questionnaires. It could be that it is therefore inappropriate to use this term, and that "perception or memory of past experiences" might be nearer to the construct under consideration. However the term "reinforcement history" has been retained since one of the questionnaires used is called the "Reinforcement History Questionnaire" (Sewell, Farley, Manni and Hunt, 1982; Sewell, Chandler and Smith, 1983). It should be noted, nevertheless, that this is not exactly what is being measured.

There is a dearth of attempts to relate subjects' perceptions of, and feelings about, reinforcement attempts by others in the past to presently observable behaviour. The work of Sewell and his co-workers with black adolescents, while not directly relevant to the present work, provides a basis upon which to build. These researchers (1983) devised a questionnaire from which three scores could be derived, one relating to positive experiences, one to negative, and the third to indifferent reactions from four socializing agents - mother, father, teacher and peers. The adaptation of this scale for use in the present study is discussed in Chapter 5. However, it is appropriate at this point to refer briefly to Sewell's work.

After examining the relationships between locus of control (LOC) and the three factors (one reflecting positive influences, one reflecting negative peer influences, and one suggesting authority influences) incorporated in their scale the authors concluded that "the consistent pattern that emerges....is that the attribution of success or failure is likely to be related highly to a positively perceived reinforcement history...." (1983, p. 43). Other conclusions, relevant to black achievement orientation, are not of interest in the present context. It was on the basis of Sewell's work, in conjunction with the theoretical rationale underlying this project, that the work reported in Chapter 5 was undertaken. That is, it was considered plausible that perception of reinforcement history would be related to attributional style, and whether or not either variable reflected actual experiences, it might also relate to responsiveness to praise.

Nevertheless, Sewell's conception of reinforcement history can be regarded as limited in only allowing the derivation of positive and negative scores. Since the dependent variable of interest in this project is response to various praising locutions, of greater interest would be an instrument which measured perception of a quite specific praising history, the actual locutions which were used by parents for given behaviours. An attempt to devise such an instrument was made and this work is described in Chapter 11.

#### **4.2 Attributional Style**

A great deal of work has been done on the construct "Locus of Control" (LOC) and a variety of instruments produced to measure it, and recently further related and compelling cognitive theories have been outlined. Attribution theory is one such cognitive approach, although its history (see Antaki, 1982), intertwined with that of LOC, in fact goes back two or three decades.

There is no one systematic theory which is "attribution theory"; rather there are a number of models converging on some of the same ideas. The basic assumption underlying attribution theories is that we seek to understand why an event has occurred, and this is particularly so when an outcome is unexpected or unsatisfactory (Weiner, 1982). Causes were for convenience originally classified into two groups, those which were internal to the person and those which were external. Other similar or overlapping dichotomous distinctions such as person-environment, disposition-situation, origin-pawn, intrinsic-extrinsic, and freedom-constraint have also been made. Weiner (1979, 1982) recognized, however, that the dimensional structure of the perception of causes was more complex than this. Taking Heider's (1958) internal-external causal dimension, he added two others, stability and control (1979) because some causes with the same locus apparently had other different properties. The addition of "stability" meant that causes could be differentiated in relation to their endurance over time, while "controllability" added an implication relating to whether or not the individual was able to do otherwise.

In relation to the latter dimension, it could be noted that in his review of much of the literature examining relationships between LOC and other variables, Lefcourt (1982) suggests that perhaps the use of "control" in the name of the construct is misleading, and that it is rather "contingency" which is at its core. That is, instruments measuring LOC are really measuring the extent to which a contingency is perceived between one's own behaviour and outcomes. Since a great deal of relevant research has been done using LOC, examples of relevant experimental studies of it, and of the more extended construct "attributional style", will be reviewed. The latter might in some sense be regarded as a more refined version of the former. Instruments measuring LOC are only relevant to the perception of control along the internal-external dimension, whereas those measuring attributional style have a broader focus.

Weiner's most recent theory (Weiner, 1982) is a cognitive theory of motivation. He is concerned with the attributions of causality made by individuals for success and failure outcomes. He points out that there may be a large number of perceived causes but that we tend only to consider a subset of them. For example, in the achievement context we might consider ability, motivation, physiological factors, task factors, and luck. In the affiliation context our own prior behaviours, our physical appearance, and aspects of the other person(s) might be considered. Motivation to do a given task is a function of how successfully the individual has done it previously and to what s/he attributes that past success (ability or effort). A basic premise is that causal attributions, varying in stability, locus of causality (internal/external) and controllability, in part determine behaviour.

Studies investigating resistance to interpersonal influence have shown some interesting relationships with LOC. Gore (1962) found that while those with a high internal locus of control ("internals") are not more resistant to the experimenter's bias in general, they do resist a certain kind of influence technique more than do "externals". As reported in Lefcourt (1982), they resist "subtle manipulation as opposed to explicit suggestion" (p. 48). Alegre and Murray (1974) found that among "aware" subjects, externals condition more easily than do internals. That is, when internals recognize that the experimenter is deliberately trying to manipulate them, they resist the attempt and deny being influenced. Strickland (1970) had also found that internals are more likely than externals to deny having been influenced during a verbal conditioning experiment.

However, there appears to be another rule in effect, too, one which results in internals, under some circumstances, being more amenable to influence. Thus Mausner and Platt (1971) report more success at influencing the smoking behaviour of internals than externals. And Sherman (1973) found, in an attitude-change study comparing the effects of persuasive messages with those of self-generated counter-attitudinal essay-writing, that internals were more changed under the latter condition than under the former. The reverse was true for externals.

Apparently there are also likely to be interactions between LOC and responsiveness within the experimental setting. Lefcourt (1982) reports that externals are more ready to behave according to the experimenter's instructions. Felton (1971) found that the effect of an experimenter's expectancies on a subject's performance was maximal when the subject had an external, and the experimenter an internal, orientation.

Summarizing his overview of the literature in this area, Lefcourt (1982) concludes that internals "do yield to pressures, but not to the same pressures as externals....(I)nternals....readily respond to directives that seem congruent with their own perceptions" (p. 55).

Some research has focussed on the interaction between social reinforcement condition and LOC. Thus Baron and Gantz (1972) report that internal students made significantly more correct responses in a condition which provided for self-discovery of results, but externals were more responsive when personal praise was provided by the experimenter. However, Clark (1980), who compared the effectiveness of a cognitive problem-solving strategy with that of social reinforcement for correct responses for anagram-solving, found no significant main effect, although internals who said they had used the cognitive strategy improved more than did those who said they had not. Although it was hypothesized that internals would improve more than externals under the cognitive strategy and that externals would improve more than internals under social reinforcement, no difference was found.

Bugental, Whalen and Henker (1977) predicted that children's causal attributions would act as mediators of the differential effectiveness of two behaviour change programmes (self-control compared to social reinforcement). They found that a self-control intervention (internal regulation by self-controlling speech) produced significantly greater error reduction for children not medicated for their hyperactivity, and for children with high perceived personal causality. External control by social reinforcement resulted in trends towards greater error reduction for medicated children and those with low perceived personal causality. They found that behaviour change was greater when the child's causal attributions matched the implicit attributional emphasis of the intervention. Thus children with high attributions to external causes were significantly more responsive to the reinforcement intervention than to self-control procedures. It does seem likely then that some measure of "attributional style", or the tendency to attribute causes differentially, will interact with individuals' responses to praise.

Some of the work on LOC is also relevant to another facet of the present thesis. Researchers have been concerned with possible relationships between LOC and intrinsic motivation. Earn (1982) hypothesized that internals would assign greater weight to the competence aspects of rewards and would therefore increase in intrinsic motivation as pay increased. Externals, on the other hand, are more likely to focus on the controlling aspects of the reward and should therefore decrease in intrinsic motivation as pay increases. This hypothesis was supported in Earn's first study, but in his second, when pay was made



contingent on performance, high pay undermined the intrinsic motivation of both internals and externals. Earn argues that only when the controlling aspect of pay is not salient will intrinsic motivation of internals and externals be differentially affected.

Danner and Lonky (1981) investigated the relationships between cognitive level, intrinsic motivation, and responses to extrinsic rewards and praise in 4-10 year old subjects. Highly motivated children with an internal locus of control increased in intrinsic motivation after praise, while highly motivated children with an external locus of control decreased in intrinsic motivation following praise.

In a study of Iranian children at grade 5 level, Salili, Maehr, Sorensen and Fyans (1976) were interested in the effects of three evaluation conditions on anagram task performance and continuing motivation (CM). While evaluation condition appeared to make little difference in the case of performance, it had significant effects on CM. When subjects attributed their achievement to themselves they were more likely to display CM. However, neither achievement motivation nor causal attributional style moderated subjects' responses to evaluation.

In relation to the predictive value of "LOC" and "attributional style", Lefcourt (1982) draws a number of conclusions from his extensive review of the LOC literature. Most importantly, the LOC construct "should not be expected to account for a lion's share of the variance in most situations. The perception of control is but a single expectancy construct" (*ibid.*, p. 186). In addition, he says, it should be realized that people are not totally internal or external. And further to this point, he suggests that because people hold internal and external "control" expectancies about different aspects of their lives, the researcher who wishes to use perception of contingency as a predictor ought perhaps to design her/his own assessment instruments.

Partly on the basis of observations like these, a questionnaire based on the work of Weiner (1979) was adapted and used in this project in an attempt to measure the extended construct "attributional style". The work of a research group (Peterson, Semmel, von Baeyer, Abramson, Metalsky and Seligman, 1982) was combined with that of another researcher (Russell, 1982) to produce the instrument.

In reformulating the learned helplessness model, Seligman and his colleagues (1979) hypothesized that the kinds of causal attributions people make to account for their apparent lack of control will influence whether or not their helplessness entails low self-esteem, and whether it will generalize across situations and time. The three dimensions they were concerned with were internality-externality, stability-instability, and globality-specificity. Individual differences should exist in the tendency to use the extremes of these dimensions. An individual with a depressive attributional style, for example, is likely to attribute bad outcomes to internal, stable and global factors (or good outcomes to external, unstable and specific factors).

Attempts have been made to devise an instrument that will measure attributional style. Peterson et al (1982) report means, reliabilities, inter-correlations and test-retest stabilities for their Attributional Style Questionnaire (ASQ). The questionnaire consists of twelve hypothetical events, half having good outcomes, and half having bad outcomes. The good outcomes are further subdivided into "good affiliation" and "good achievement" outcomes. Similarly, there are three "bad affiliation" and three "bad achievement" outcomes. Subjects were required to write down one major cause for each hypothetical event; then they rated this cause along the three attributional dimensions (they were also asked to rate the importance of the situation described). Since no differences were found between males and females in any analysis the data for the two genders were pooled. Good events were explained in general more internally, stably and globally than bad events. The authors suggest that composite scores can be derived by collapsing across subscales. Thus alpha coefficients of .75 and .72 were obtained for the good events and the bad events respectively. The 6-item subscales (e.g., good-internality) and the 3-item subscales (e.g., good-affiliation-internality) did not result in high enough alphas to warrant their use as separate scales.

Ratings for internality, stability and globality for achievement events correlated to a reasonable extent with those ratings for affiliation events. The authors thus suggest that researchers not make a distinction between these areas unless there is some specific interest in comparing achievement or affiliation subscales with external criteria.

Since there was a lack of correlation between corresponding ratings of good and bad events (e.g., high internality for good does not imply high internality for bad) they argue that this distinction should be kept. Moreover, Peterson et al suggest that measurement tools which confound good and bad outcomes (e.g., Rotter, 1966) "are not maximizing the power of the concept" (1982, p. 295).

The results of intercorrelating the three dimensions suggested that their questionnaire did not manage to distinguish among the good events. The three dimensions were more clearly distinguishable for bad events. The authors suggest that people do not spend as much time pondering good events as they do bad, and thus may not make such fine discriminations in relation to these events.

Test-retest correlations were good, ranging from .57 to .70 for the individual dimensions and the composite scores. Finally, the authors present some promising evidence of the validity of their questionnaire, including the fact that scores on the ASQ are associated with the subsequent development of depressive symptoms.

The ASQ was adapted for use in the current project by combining it with Russell's (1982) Causal Dimension Scale which was designed to assess how the respondent perceives the causes s/he has given for a specific event or situation. Thus each of the situations of Peterson et al were rated by respondents along Russell's dimensions. The

adaptation of the scale and some of the empirical work using it is described in Chapter 5. Further work is noted in Chapter 11.

Some evidence is available which suggests that attributional style does relate to behaviour. For example, Dweck and Goetz (1978), in their research on teacher practices, found that children who attribute failure to insufficient effort (that is, an internal controllable cause) worked harder and longer than ability attributors (ability being a factor which is not subject to personal control). The so-called "helpless" or ineffective learners were those who attributed failure to inadequate ability rather than to lack of effort (the authors note that this was more characteristic of girls than of boys).

After considering the work described above it was hypothesized that the effect of attributional praise (essentially the attribution of an internal, stable and global cause for behaviour) might be different depending on the attributional style brought to the experimental room by the subject. It was also hypothesized that this attributional style might relate to the perception of earlier experiences that the subject had had. These general hypotheses underlay the research strategy described in Chapter 5. And given that it was an essentially exploratory study, it was decided, at least initially, to retain the distinction between achievement and affiliation situations.

Some of the observations that have been made of developmental relationships between LOC and other variables are also peripherally relevant to work on parent praising patterns reported in Chapter 11. Lefcourt discusses the social antecedents of LOC, citing the work of Crandall (1973) and Katkovsky, Crandall and Good (1967). Katkovsky et al rated parents' behaviour in the home. Four of their nine scales were consistently related to Crandall's Intellectual Achievement Responsibility Scores (IAR), a measure for children of LOC in relation to academic achievement. Thus stronger internality was associated with more "babying" mothers, and more "general protectiveness" and "affectionateness" by mothers and "approval" from both parents. This last variable refers to the degree to which parents offered praise and approval rather than criticism and disapproval; there was a stronger relationship with internality for boys than for girls. As the authors conclude, it seems that the "child's beliefs in internal control of reinforcements are related to the degree to which their parents are protective, nurturant, approving, and non-rejecting" (Katkovsky et al, 1967, p. 774). However, Crandall (1973), according to Lefcourt, argues that while parental warmth and protectiveness during childhood are necessary for the development of internality, this protective behaviour can militate against such a stance later. She suggests that some parental coolness and criticality in later childhood are associated with internality. In relation to the self-report work described in Chapter 11, it should be noted that directly observed maternal behaviour proved to be more highly related to children's IAR score than were the self-report measures from either parent.

### 4.3 Self-Variables (1)

In the previous chapter it was suggested that the attitude-behaviour relationship could be seen as having parallels with the self-concept-behaviour relationship. Kleinke (1984) believes that it is most fruitful to view the attitude-behaviour relationship as an interactive system in which attitudes and behaviours exert a reciprocal influence on one another. He describes two models which are helpful in conceptualizing the relationship. In the first, an attitude is a product of past experiences which interact with persuasive arguments and various kinds of communications or information (cf. the attribution of a characteristic, that is, information about some personal aspect of the self). The attitude underlies the behaviour; to change the behaviour, the attitude must be changed.

In the second model behaviours are a function of the person's learning history, the stimulus situation (discriminative stimuli), and the present consequences. Attitudes are labels, or behavioural attributions, that are given to the behaviour if (a) the individual is aware of the behaviour and wants to seek its cause, and (b) the behaviour is viewed as a product of her/his own free will. Attitudes are thus changed by changing behaviours. Labelling experiments, within this model, accentuate attitudes and their corresponding behaviours by focussing attention on particular "freely chosen" behaviours. A plausible parallel might be drawn between such models of the attitude-behaviour relation, and models of the predicted relationship between self-characteristic and behaviour.

Currently models like Kleinke's are being expanded to incorporate the observation that individual differences can modify the attitude-behaviour relationship and the trait-behaviour relationship. This latter relationship is discussed more fully in Section 4 of this chapter. To recall the question posed by Scheier and Carver (1980), it is now a matter of determining whose behaviour will fit well with their attitudes and whose won't. At least two individual difference constructs have been identified as moderating the attitude-behaviour relationship, and these are discussed in the next section.

#### 4.3.1 Self-Consciousness Theory

Duval and Wicklund (1972) first outlined a theory of self-awareness, describing some of the cognitive and behavioural consequences of self-focussed attention. A tenet of this theory, which evolved over the next decade (e.g., Wicklund, 1982), is that most people focus on the environment because (1) the environment usually provides a high degree of perceptual stimulation, and (2) thinking about oneself may be aversive because it can give rise to such negative cognitions as self-doubts. This characteristic outward orientation apparently greatly limits the capacity of most individuals to become self-observers of the kind described by Bem (1972), and therefore, consistent with this analysis, the explanations most people offer about their own behaviours are likely to emphasize situational factors rather than their own personal characteristics (Jones and Nisbett, 1972 - but note that

Moore, Sherrod, Liu and Underwood, 1979, identified a "dispositional shift" such that when asked to explain an action in which they had just engaged, subjects interpreted it in terms of situational demands, but when asked to explain the identical behaviour several weeks later, these same subjects interpreted it in terms of their own characteristics). Given the implication that people do not immediately relate their behaviours to their personal characteristics, Wicklund and Frey (1981) proposed that devices that remind one of oneself, such as a mirror, could be used to sensitize people to this relationship.

Self-attention, according to Scheier and Carver (1980), evokes a "matching-to-standard" in the self-regulatory process that controls the intensity and direction of ongoing behaviour. If self-focus is increased, the result is a greater correspondence between behavioural standards and behaviour. If no standard is salient, increasing self-focus simply enhances the person's awareness of the relevant self-dimension to which her/his attention is directed. As subsequent work revealed, however, in addition to there being a situational form of increased self-awareness, there was also a corresponding disposition to be more or less self-reflective.

Fenigstein, Scheier and Buss (1975) describe self-consciousness theory and the development of a scale to measure this disposition to focus inward. After factor analyzing their scale Fenigstein et al found three factors with substantial test-retest correlations. They called these factors, or subscales, Public Self-Consciousness, Private Self-Consciousness, and Social Anxiety. They conclude that there appear to be two separate aspects of self-consciousness - one is a contemplation of the self, and the other is an awareness and concern over the self as a social stimulus.

Duval and Wicklund (1973) argue that causality for an event is attributed to the stimulus that is the focus of attention. In some situations a person's degree of public self-consciousness is likely to determine her/his focus of attention. For example, if an individual who is high in public self-consciousness is rejected by her/his peers s/he is more likely to accept responsibility for that rejection than is one who is low in public self-consciousness. Apparently self-reports and behaviour correlate more highly when self-awareness is manipulated, and individuals who are dispositionally high in private self-consciousness show a stronger relationship between attitudes and behaviours, and between traits and behaviours, than do those who are dispositionally low on that variable. According to Buss and Scheier (1976) the former group also attribute more causality to themselves. Franzoi and Sweeney (1986), however, report three studies in which they could not replicate this relationship between the habitual self-focus of the individual high in private self-consciousness and the tendency to attribute positive or negative outcomes to internal causes.

Scheier and Carver (1980) report that public self-consciousness is independent of need-for-approval and only moderately (positively) related to self-monitoring (see next section). They suggest that this is because the subscale deals only with the individual's awareness of how s/he comes across in social contexts. While there may be an awareness of

the impression being made, this does not necessarily entail using that knowledge to gain approval, or as a guide for self-presentation.

Wicklund and Gollwitzer (1987) question the validity of the public-private distinction, but Carver and Scheier (1987) refute a number of their arguments. They dismiss the criticism that what they, Carver and Scheier, consider to be a process theory is simply a "naming-is-explaining" theory. Other arguments rejected include the view that when measuring public self-consciousness they are actually measuring "social dependency", and that using the terms "self-awareness" and "self-consciousness" to refer to the manipulated state and the disposition, respectively, should be decried (see also Fenigstein, 1987). Carver and Scheier suggest that Wicklund and Gollwitzer have quoted selectively from the writings of Buss, rather than considering their own theory in total.

Buss (1980) also propounds a theory of self-consciousness, private and public, and reviews other perspectives on the self which are complementary to his approach (sociological perspectives including looking-glass self, self-presentation theory and institution vs. impulse; psychological perspectives including self-monitoring, self-schemata and self-focussed attention). He distinguishes between the sensory and the cognitive self, and the private and public self. The private self is that self which can only be observed by the experiencing person, whereas the public self is overt and can be observed by others. He believes that attention to the private self intensifies the "affective charge of bodily stimuli, moods, motives, fantasies, and self-esteem" (*ibid.*, p. 13), and that it makes all private events more distinct.

Buss assumes that there will be variation among individuals in the tendency to attend to, and reflect upon, the "inner self". He calls the transient state of thus reflecting "private self-awareness" and the disposition or trait "private self-consciousness". Introspection, diary-writing, daydreaming, meditation, and looking into a small mirror all produce private self-awareness.

On the other hand, the knowledge that one is exposed or observed can produce public self-awareness. Those high in public self-consciousness are assumed to be more responsive to manipulations that induce public self-focus. Buss predicts that those high in public self-consciousness should be inconsistent in public contexts because of their concern about others' opinions of them. People who are high in private self-consciousness, by contrast, should be consistent since they really know their own attitudes. The two kinds of self-consciousness act in opposite directions then - consistency is linked with high private self-consciousness and low public self-consciousness. Empirical work supports these predictions, according to Buss.

Buss reviews the relationships between his work and that of others. He refers to Turner (1976) who suggests that the sociologist's tendency to define the self in social terms (roles, status and institutions) is not applicable for all people. For some the self is anchored

in impulse, that is, "to varying degrees, people accept as evidence of their real selves either feelings and actions with an institutional focus or ones they identify as strictly impulse" (Turner, 1976, p. 990). The goal of those with an institutional focus is to adhere to standards and to match their behaviour to what is expected of them, whereas those high in impulsiveness do what they want. To the extent that they are self-conscious, it would be private self-consciousness.

Buss mentions the theory of self-focussed attention as being relevant to his own. According to Duval and Wicklund (1972, revised by Wicklund, 1979) self-focussed attention causes an immediate self-appraisal and this reveals a discrepancy between one's current condition or behaviour and one's standards or goals. The usual response to this situation is escape, leaving the situation, or directing attention elsewhere; if this is not possible, the individual will try to reduce the discrepancy by changing her/his behaviour. But, Buss suggests, Duval and Wicklund do not distinguish between private and public manipulations (e.g., mirror cf. camera) which he believes lead to different predictions (private vs. public self-consciousness). Of course, as was mentioned above, Wicklund and Gollwitzer (1987) elaborate an argument against the making of the public-private self-consciousness distinction at all.

Carver (1979) postulates a relationship between self-awareness and "schematism", and the Self-Consciousness scale was considered to be an appropriate tool for investigating this hypothesized relationship (see Section 4.4). Relevant empirical work is discussed in Chapter 7. Although no investigation of the interaction between self-awareness and response to different praising locutions was undertaken within this project it could be argued that those who are high in private self-consciousness might be less amenable to behaving in accordance with an attributed characteristic.

#### 4.3.2 Self-Monitoring Theory

According to Scheier and Carver (1980) much of the theorizing within social psychology is concerned with the way in which individuals make decisions about how to behave in a given social situation. A "self-monitoring" concept developed out of a consideration of the differences between people in their tendency to use social comparison information in such situations. According to Festinger (1954), social comparison is the tendency, especially in highly ambiguous circumstances, to "define reality" by social consensus.

A sociological perspective which is complementary to this approach is self-presentation theory, originally proposed by Goffman (1959). This theory has already been referred to in Chapter 3 in relation to models of the self-concept. Goffman suggested that we present ourselves in a manner consistent with the role we are currently playing. We become aware of ourselves as social objects when (1) others are observing us closely and/or (2) we are trying to maintain composure in the face of an upsetting occurrence. The high self-

monitor is considered to be flexible in behaviour and very likely to seek out social comparison information to assist in appropriate self-presentation.

Snyder (1974) describes a series of studies in which the construct "self-monitoring of expressive behaviour and self-presentation" was defined, measured, and validated. He concludes that individuals differ in the extent to which they observe and control their expressive behaviour and self-presentation. It seems that individuals who are particularly sensitive to "social appropriateness" have also learned self-monitoring skills to enable them to control their self-presentation "to fit the situation". This style can be compared to that of an individual who "express(es) it as (s/he) feel(s) it" (*ibid.*, p. 527), truly projecting her/his internal state.

Snyder points out that the dimension underlying his construct has some similarity to the "traits versus situations" dichotomy - is behaviour controlled by situational factors (and therefore variable across situations) or is it controlled by inner dispositions (and therefore stable across situations)? He notes that Bem (1972) suggests that attention should rather be directed towards finding moderating variables "which would allow the specification for an individual of equivalence classes of situations and responses across which he monitors his behavior with respect to a particularly central self-concept. In those areas he would show trait-like cross-situational and interresponse mode consistency; in others he would not" (Snyder, 1974, p. 528). Self-monitoring of expressive behaviour would be one such moderating variable. The high self-monitor will be one who "is particularly sensitive to the expression and self-presentation of others in social situations and uses these cues as guidelines for monitoring his own presentation" (*ibid.*).

After comparing individuals high and low in need-for-approval Snyder concludes that "although high need-for-approval individuals may be motivated to modify their expressive self-presentation in order to gain approval, they may lack the necessary self-control abilities and skills" (*ibid.*, p. 529). He therefore devised a scale to discriminate individual differences in concern for social appropriateness, sensitivity to the expression and self-presentation of others in social situations as cues to social appropriateness, and use of these cues as guidelines for monitoring and managing self-presentation and expressive behaviour. As he sees it, these are the basic elements of "self-monitoring". The scale used in the present project consisted of 25 true or false items scored in the direction of high self-monitoring. Subsequent to the carrying out of this research, however, Snyder and Gangestad (1986) produced an 18-item version of the scale based on the results of further psychometric work and the interpretation of a number of empirical studies.

Having obtained peer ratings of individuals, Snyder is able to sketch a high self-monitoring individual - "he is a person who, out of a concern for acting appropriately in social situations, has become particularly skilled at controlling and modifying his social behavior and emotional expression to suit his surroundings on the basis of cues in the situation which indicate what attitudes and emotions are appropriate. The low self-



monitoring individual, as perceived by his peers, is less able and/or less likely to control and modify his self-presentation and expressive behavior to keep it in line with situational specifications of appropriateness" (Snyder, 1974, p. 532). Snyder has validated his scale by comparing actors and psychiatric patients, and by carrying out experimental studies. He has shown, for example, that high self-monitors seek out more social comparison information.

Although Snyder conceived of himself as looking at the single factor underlying self-presentation, Briggs, Cheek and Buss (1980) found that the scale rather than measuring a single factor, actually measures "acting", "extraversion" and "other-directedness", all of which are relatively independent. This implies that there are different ways to achieve a high score on the Self-Monitoring scale.

Nevertheless, in view of Snyder's own work, it was decided that the scale was likely to be a useful tool for predicting which individuals might be more susceptible to a situation in which an opportunity for self-presentation is available. For example, it was thought that there might be an interaction with responsiveness to praise in a situation in which the subject has an opportunity to self-present consistently with the praise.

The recent work of Snyder and Gangestad (1986) includes evidence of the independence from other constructs of that measured by the latest version of their scale. However, it should be noted that Briggs and Cheek (1986), in a very thorough analysis of the earlier scale, found that the correlations between the total score and a number of other scales were generally slight. After assessing various kinds of evidence they argue that it is the factors of the Self-Monitoring scale rather than the total score which more reliably relate to other measures, and that simply shortening the scale "does not articulate the multiple dimensions inherent in the scale and in the concept" (*ibid.*, p. 129). They believe that a new set of items is needed.

#### **4.4 Self-Variables (2): Being Self-Schematic, Importance and Schematism**

Markus believes that self-schemas have two main functions. Firstly, they are generalizations about one's own behavioural tendencies, especially enduring traits and attributes, and secondly, they determine how future information about oneself is attended to, stored, and weighed on a scale of importance. If so, an individual's self-schemas are very likely to play a basic role in determining the outcome when specific characteristics are attributed to her/him. A number of researchers have considered the role of self-schemas and the importance of the environmental interaction in moderating the trait-behaviour relationship.

Carver's (1979) information processing analysis of self-attention processes is applicable in the context of individual differences, as is the work of Fazio and his colleagues. According to Carver, self-directed attention results in the categorization of stimuli in terms of pre-existing self-schemas. The outcome is that a response schema which acts as a behavioural standard is evoked. After a "matching-to-standard" process, behaviour

is altered to more closely fit that standard. In relation to trait-to-behaviour processes, conditions of increased self-awareness are likely to lead to the accessing and consideration of self-dimensions. Sherman and Fazio (1983) argue further that only subjects schematic for a given characteristic or trait would demonstrate an enhancement of the trait-behaviour relationship. Aschematics would not.

Sherman and Fazio maintain that once an individual becomes (presumably situationally) self-aware, s/he is motivated to select a behavioural option that accords with her/his self-schema. The process envisaged is again one wherein the individual compares the self-schema with a template for each available behavioural option and selects the one providing the closest match. They argue that if traits are conceived of as affect towards, and/or beliefs about, a situation/class of situations, not all traits are clearly linked to specific situations. "Energetic" is an example they give of a trait which might not be thus linked.

However, for those that are so linked, what individuals might be indicating when they describe themselves as having a given trait, is that they hold certain beliefs, or experience certain affective responses in relation to the situation. Traits, then, within this model, are actually associations between certain beliefs, or affect, and certain situations, and their strength can vary. If the association is sufficiently strong, the belief (affect) will be accessed upon entering the situation. A distinction is made between an automatic and a controlled process, the latter seeming to require some motivational force. The key variable which might set off a controlled process is very likely to be importance. That is, behaviours with very important consequences might be considered very carefully, and in relation to a clear focussing of attention on the self. Sherman and Fazio consider that deciding what job to pursue or what university to attend might result in such a process. Perhaps in making these important decisions we are also guided by our "possible selves".

Recently Markus and Nurius (1986) have elaborated the concept of "possible selves". They argue that structures of self-knowledge are constructed creatively and selectively from an individual's past experiences in a particular domain. These structures reflect concerns which are salient to the individual, and in which s/he has some investment. The role of these structures in influencing the processing of information about the self has been referred to in a previous chapter. "Possible selves", on the other hand, "function as personalized carriers (representations) of general aspirations, motives, and threats and of the associated affective states. They serve to select among future behaviors" (ibid., p. 955) and "they serve as incentives for future behavior (i.e., they are selves to be approached or to be avoided)" (ibid.).

If the self-concept is regarded not as a single, generalized view of the self, argue Markus and Nurius, but as a current or working self-concept, the role of possible selves becomes clear. Since not all self-knowledge is available for thinking about the self at one point in time, the working self-concept can be seen as that set of self-conceptions which is presently available in thought and memory. This set will be continuously active, changing in

relation to ongoing experiences, internal states and social circumstances. While the self that is part of the public domain may remain relatively stable, due to such factors as invariances in social feedback and the targets of social comparison, according to the authors, our possible selves are not so tied to social reality and may thus be quite responsive to environmental changes. Our possible selves may be the elements of the self-concept that reflect such change.

Further, while the presently available array of self-cognitions may be in fairly constant flux, there are likely to be some self-conceptions which are more easily available to awareness because they are especially important - one's self-schemas. People with specific self-schemas should find it easy to predict their own future behaviour, attend to and remember self-related information and resist evidence which conflicts with the self-schema. On the basis of such arguments it was hypothesized that praisees who were schematic on any attributed characteristic would respond to the praise in a different manner from that of aschematics. Moreover, whether or not that characteristic is regarded by the praisee as personally important should also interact with the effect of attributional praise.

Although Markus incorporates "importance" in her technique for determining whether individuals are self-schematic in various domains, she has to date confounded self-schematism with extremeness on the characteristic. In relation to the current project a different approach to operationalizing self-schemas was thus taken. These issues are elaborated in Chapter 10.

"Schematism/Self-Construction", or the number of domains in which an individual is self-schematic is itself independently interesting as an individual difference variable and it is also investigated. According to Buss (1980), people who are high in private self-consciousness will have many self-schemata simply because they think about themselves so often. This prediction was tested using the Self-Consciousness scale and a Self-Concept Questionnaire specifically devised for use in this project. Chapter 10 contains a description of this work.

#### **4.5 Situational and Task Variables**

If they are to act as valid analogues of the real-world situation, laboratory tasks or expected behaviours must meet more than a criterion of personal importance; they must also meet one of "prototypicality" in relation to the behaviour domain in question. Buss and Craik (1980, 1981) were interested in the "multiple-act criterion" or the total set of behaviours a person might perform with respect to a given attitude object. They had subjects list behaviours exemplifying a given trait (gregariousness, for example). A hundred acts relevant to the category were then compiled and shown to judges who rated each act on prototypicality of the given trait category. They found a high degree of composite reliability across subjects, and were thus able to compile series of multiple-act criteria, ranging from the most to the least prototypical. Then a third group of subjects indicated whether or not

they had performed each of the hundred acts and also completed a relevant personality trait measure. Correlations revealed a linear trend with the greatest predictive accuracy being observed for the multiple-act criteria of the 25 most prototypical behaviours. It seems reasonable to suppose on this basis that individuals will not always see a given action option as representative of a given trait. Thus whether or not an individual regards her/himself as having a specific trait, s/he can only be expected to behave consistently with it if the available action option does seem prototypical.

Abelson (1982) looks at two lines of argument which he considers are commonly raised to account for the observation that attitudes apparently do not predict behaviours. Firstly, there is the possibility that attitudes may be characterized on many different levels of specificity. Secondly, situational context factors are important. That is, the circumstances surrounding the expression of the attitudes or the manifestation of them in behaviour can vary between occasions, along with such variables as stress, social pressure, anonymity, and motivation to reflect. Accordingly, in relation to mediating situational contexts, which Abelson discusses in some detail, recent research has shown that "sharpening" the individual's preparation to respond in line with private values and beliefs increases the consistency of attitudes with behaviour. This process, termed "individuation", essentially involves increasing an individual's awareness of her/his self-orientations. There are obvious parallels here with private self-consciousness discussed above. Abelson, however, is more interested in the implication in the generally low correlation between attitudes and behaviours that normally responses may not be individuated. It is interesting to note that individuation may vary between content areas for some people. Thus Schwartz (1977), for example, argues that the domain of helping is one in which certain individuals are typically more aware of the moral consequences of their behaviour and are more likely to exhibit attitude-behaviour correlations (and, for example, health behaviour and energy conservation behaviour may not be consistent with attitudes, according to Snyder, 1982, whereas certain social behaviours may be - see Wegner and Vallacher, 1980). It is noteworthy that a large proportion of the foot-in-the-door and labelling studies have been conducted in the helping domain. The issue of the behaviour domain in question is discussed in more detail below in relation to the nature of the attributed characteristic.

Abelson regards the notion of "scriptedness" of the behaviour to be a relevant one in this context. "A script is an organized bundle of expectations about an event sequence" (Abelson, 1982, p. 134). Once a script has been activated the individual is better able to cope with ongoing environmental demands. If the behaviour required is controlled by a particular script for which the attitude under consideration is not relevant to its action rule (a set of criteria which, if affirmed, will lead the individual to enter the script), then attitudes may in principle not be able to affect the behaviour. Since Abelson argues that it is important to analyze the behaviour to determine whether, and where, attitudes can enter in it seems that "scriptedness" is a context factor which can affect the relationship between attitude and

behaviour. Presumably such a variable in an experimental context might also moderate the potential effectiveness of an attributional, or other praising, manipulation. Some individuals may behave in a socially determined, stereotyped manner in certain situational and task contexts, whereas others may not.

Further to considering the variable of self-monitoring, Snyder (1982) describes a "thinking person's environment" in which "individuals were encouraged to adopt a contemplative orientation to choosing a course of action" (p. 111). For example, in a judicial decision-making task in which subjects prepared written communications about their judgments of liability, there was a high correspondence between attitudes and actions. There are, according to Snyder, two principles at work here, availability and relevance. According to the availability principle, if thought is to lead to action, then individuals must know their thoughts and the implications of those thoughts for their behaviour. And, individuals can only be expected to act on attitudes when they judge that it is relevant and appropriate to do so. Thus if the attitude is made more available, consistency should increase, just as "increasing the relevance of attitudes as guides to action ought to enhance correspondence between an individual's general attitudes and his/her specific actions" (ibid., p. 114). Conceivably there will be variations between individuals in the extent to which the experimental situation, tasks, and manipulations will enhance these variables.

Motivation in relation to the specific task could also be an underlying factor in observed effects. Harackiewicz and Manderlink (1984), referred to in an earlier chapter, hypothesized that competence valuation, or the importance of doing well, would be an important mediator of interest in situations where performance feedback was available. They found an interaction with achievement motivation, such that the promise of a performance-contingent reward positively affected importance for low achievers relative to high achievers. In no-reward conditions where competence was not defined or evaluated, achievement-oriented subjects cared about doing well on the task puzzles; and the extent to which they valued competence determined their task enjoyment. In reward situations where competence was externally defined and instrumental to reward attainment subjects low in achievement-orientation felt it was more important to do well, and their task enjoyment depended on how much they valued competence.

The researchers note that this pattern of results is consistent with a theory of ego-involvement advanced by Greenwald (e.g., Breckler and Greenwald, 1986). Greenwald argues that situations differ in the kind of ego-involvement they evoke. Such involvement can basically be of two kinds, intrapersonal in which the concerns are related to self-evaluation, and social, in which the concerns are instead evaluation from external sources. As individuals differ in their predisposition to become intrapersonally or socially ego-involved, this may well be a relevant variable. In relation to the work of Harackiewicz and Manderlink (1984) the interaction with achievement could have been predicted on the basis that low achievers would be characteristically socially oriented and would therefore become

most involved in reward situations, whereas high achievers who are assumed to be intrapersonally oriented would become most involved in no-reward situations. Although importance and ego-involvement will not be investigated as variables in their own right, in the work described in Chapters 6 and 9 some reference is made to such task variables as importance of doing well, and interest. Another factor which Harackiewicz (e.g., Harackiewicz, Abrahams and Wageman, 1987) has found to be relevant, but which could not be investigated within the scope of the current project, is that of the communication of the contingencies to subjects before the experimental task is undertaken. Her 1987 results indicate that intrinsic interest can be enhanced by this procedure.

In a study by Lintner and Ducette (1974) the importance of the specific task, performance on which was to be praised, became apparent. They were investigating the responsiveness to praise of elementary school children as a function of task variables and subject characteristics. They found that the effects of praise differed considerably between an ambiguous coding task and an academic reading task. There was an interaction with LOC such that male subjects with an external LOC responded to praise on the coding task, while females were unresponsive generally, regardless of individual characteristics. They concluded that the task variable was an important one. In a situation where the task is a demanding one, personality variables may be less predictive than they are in a situation where the task is a familiar and relatively easy one. The importance of task variables in this project is discussed further in relation to the empirical work described in Chapters 6 and 9.

Finally, situational demand characteristics have been mentioned by Shrauger and Schoeneman (1979) specifically in relation to manipulated feedback studies. They argue that the functional utility of accepting or rejecting others' impressions of one may vary from situation to situation. They believe that "the factors that most limit the interpretation of these manipulated feedback studies are the demand characteristics of the situation in which changes in self-perception are assessed" (ibid., p. 564). Similarly, the demand characteristics of an experimental setting are likely to moderate the applicability of the findings in real-world situations. In considering methods to overcome the problem in this particular area, Shrauger and Schoeneman suggest that "....the appraisal might be woven into some other aspect of the experiment supposedly unrelated to the portion in which feedback was given...." (ibid., p. 565). It is hoped that in the work described in subsequent chapters the manipulation was "woven in" in as natural a manner as possible.

#### **4.6 The Nature of the Attributed Characteristic**

Every attributed characteristic will have some position on a wide variety of dimensions. Some of those relating to the self-concept have already been considered (having a self-schema, level of self-rating, importance), but others could also be mentioned. For example, meaningfulness of the characteristic to subjects, its desirability, the complexity of entailed behaviours, and the availability of those behaviours within a behavioural repertoire are all likely to affect the issue of whether an individual would behave consistently with that

characteristic were it to be attributed. In Chapter 1 some aspects of the argument of Kanouse et al (1981) were discussed. Their ideas require further consideration in the context of a distinction that was not made by Kanouse et al but is relevant to the application of their ideas. This is the distinction between attributional praise of an ability and attributional praise of a behavioural propensity, or of a particular configuration of physical attributes for that matter.

As indicated previously, Kanouse et al define praise as a "positive evaluations made by a person of another's products, performances or attributes, where the evaluator presumes the validity of the standards on which the evaluation is based" (ibid., p. 98). Because they are emphasizing "products and performances" throughout their discussion, the authors are generally also implying "abilities" to be an interchangeable term with "attributes". There are, however, a range of human attributes, from physical dimensions to behavioural propensities, all of which could be praised, but none of which need necessarily imply "ability" in the sense of innate or acquired talent or skill.

"Behavioural propensity" is being used here to mean the range of attributes or characteristics which, when praised, would not leave the recipient of the praise feeling particularly that s/he had an ability as such. These may include the propensities to be kind, to be obedient, polite, neat and tidy, or persistent. In contrast, to be labelled musically gifted, or intelligent, or even a skilful cook, would lead the recipient to consider that s/he had some kind of ability, possibly innate, but certainly not able to be counterfeited, or evoked *de novo*, by an act of will.

As was implied above, there may be a number of dimensions on which this ability/behavioural propensity distinction could be elaborated. For example, it may be that the potential number or range of behaviours implied by the term, could prove to be a suitable level of conceptualization. However, while individuals are likely to have a global feeling about whether or not they can decide to behave in certain ways they may not necessarily have access to their reasons why. These reasons might ultimately be described in other terms (such as the complexity of the behaviour, for example). But, from the individual's perspective, it seems clear that, within a given context, s/he is likely to feel able to choose to be neat and tidy or kind or persistent, if s/he desires to do so. In relation to an ability, on the other hand, although s/he may at one level know what it is to be musically gifted, intelligent or a good cook, that is, it is simply a matter of producing impressive compositions, giving correct answers, or producing perfect cakes and quiches, it is not necessarily possible to choose to do these things by "taking thought". Thus, as a starting point, the extent to which individuals are likely to feel that they can choose to act in accordance with the attributed characteristic was investigated.

The argument outlined has implications for the likely outcome of the "deservingness" search which Kanouse et al (1981) believe is always set off by praise. They believe that praise is not always accepted uncritically, that inevitable assessment of its credibility ensues.

In illustrating their specific/general praise distinction they use the example of a child who has done well at school. The child who is told "Say, you had a good term. We're proud of you" (ibid., p. 105) need only look at her (they consider the child to be female) report-card to agree. In contrast, the comment "See! Your performance in school is really outstanding. You are obviously very bright" (ibid., p. 105) will set off a larger search to determine credibility, a search that is quite likely to encounter instances when brightness was not exhibited. As Kanouse et al argue, the child is likely to gain satisfaction from this latter form of praise "only to the extent that she can be certain that her performance indicates the presence of the ability that has been praised" (ibid., p. 106).

Perhaps one important process that leads to a feeling of confidence that her performance does indicate the presence of an ability is a consideration of the question of whether she could choose to do it again. Knowing that one could in principle do so is quite likely to lead to different outcomes of the praise than concluding that one might well be unable to do so. Specific and general praise invoke "logically different evidentiary domains" (ibid., p. 106), the former leading to a search of fewer behavioural instances which might discredit the praise, and the latter initiating a wider search. It is conceivable that, analogously, the nature of the attributed characteristic would lead to a search the purpose of which is to examine evidence for the choosability of associated behaviours.

The kind of cognitive sequence envisaged is likely even in the terms of the authors' argument; they assert that praise of person (in contradistinction to praise of product) naturally focuses attention on the self and is likely to lead to self-evaluation and a consideration of future evaluation by the other. If such is anticipated, presumably the individual may attempt to maintain the previous level of performance or behaviour. The idea is expressed succinctly by Farson (1963) who is quoted by Kanouse et al:

"Undoubtedly, the most threatening aspect of praise is the obligation it puts on us to be praiseworthy people....For if we really believe it when we are told that we are competent, or intelligent, or beautiful, then we are continually on the spot to be competent, or intelligent, or beautiful, not only in the eyes of the person who praised us, but, even worse, in our own eyes" (Farson, 1963, p. 63).

In this statement the link between a self-consistency and a self-presentational view of possible responses to attributional praise is well expressed, and it is clear that much hinges on the issue of choosability. If we cannot choose to display the attributed characteristic then we can neither project an image which includes it, nor can we convince ourselves that we possess it.

The argument set out so far is not without difficulties in terms of accounting for any observed differences in outcome of attributed ability and attributed behavioural propensity. Miller, Brickman and Bolen (1975), for example, suggest that while non-littering is of some social importance, the primary focus of schools is to teach skills. The question is then



whether attribution will have the same positive effect for a range of characteristics as they found it to have for neatness and tidiness, in their case putting litter in the bin rather than on the floor. They tried to influence math(s) self-esteem and math(s) ability, finding that math(s) self-esteem increased after an attribution treatment relative to the improvement due to persuasion. Math(s) scores also increased in the immediate post-test, with a slight tendency to increase further after a 2-week delay. The persuasion group showed the immediate increase, but failed to maintain it. A reinforcement condition resulted in a similar pattern to that of the attribution conditions but with a lesser degree of improvement. The attribution-persuasion difference was significantly greater for low-ability students than for those with initially higher ability.

This may be contrasted with findings concerning the relationship between self-efficacy and skill level. Lee (1983) investigated the relationships among efficacy, outcome expectancy, CSES (a measure of assertiveness) and performance at varying levels of skill. Using multiple regression analyses, and comparing subjects above and below the median on the independent measure, she found no very clear variation in the relationships within the two groups. That is, although Miller et al did find an interaction between attribution and skill, and attributional praise can be regarded as one (weak) source of efficacy information, the mediation that occurs directly after receipt of the praise may not be in terms of an alteration in efficacy expectations.

The technique employed by Miller et al was not attribution of a characteristic in the sense of a trait term, but rather there were an attribution-of-ability group and an attribution-of-motivation group. In the former condition both verbal and written messages were delivered, for example "You are doing very well in arithmetic", "You are a very good arithmetic student" and "You seem to know your arithmetic assignments well" (verbal) and "You're doing very well", "Excellent work" and "Very good work" (written). In the latter condition the messages were, for example, "You really work hard in arithmetic", "You're working harder in arithmetic" and "You're trying more in arithmetic" (verbal) and "You're trying more, keep at it" (written). In contrast, the reinforcement group received such praise as "I'm proud of your work", "I'm pleased with your progress in arithmetic" and "Very good" (verbal) and "Excellent", "Very good" and "I'm very happy with your work" (written).

The fact that Miller et al make a distinction between skill-type behaviours and what have been termed behavioural propensities, indicates that this is not an idiosyncratic categorization. And evidence presented by Kirsch (1982) from within the framework of Bandura's (e.g., 1977) self-efficacy theory, lends further credence to such a distinction. There are strong parallels between the constructs comprising self-efficacy theory and the notion of behavioural choice outlined. Bandura suggests, and there is certainly some evidence to support his view, that so-called feelings of self-efficacy, or "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura,

1977, p. 193) are the immediate determinant of a particular behaviour in a given setting. There is some debate as to the relationship between these feelings and an individual's expectations concerning the outcome of the behaviour, with Bandura asserting that measures of efficacy will always better predict behaviour than will a knowledge of outcome expectations, provided the individual has "appropriate skills and adequate incentives" (Bandura, 1977, p. 194). Whether an individual feels that s/he can choose to perform the behaviour, or display the characteristic, may depend on feelings of efficacy, self-perceived skill level, and feelings about ability to maintain motivation, among other factors. Thus having a choice may be seen as depending directly on feelings of efficacy and indirectly on the factors that contribute to those feelings.

Given that Bandura and other writers and investigators (e.g., Kirsch, 1982, 1985) have found sufficient problems to dispute among the constructs generated within the original formulation, it seems unreasonable to clutter the theory with further constructs. However, in the present context, Bandura's theory is not quite applicable. Bandura's stated concern is to predict specific behaviour in a specific situation. The main thrust of the current discussion is a consideration of the possibility that there may be different types of characteristic which may be reflected in various behaviours or behavioural tendencies, and that the nature of the characteristic might relate to the probability that an individual will feel able to choose to display that characteristic. Thus the present problem is strictly outside the realm of a pure version of Bandura's theory and methodology. It may nevertheless be instructive to consider some of the tenets of Bandura's theory further, particularly in relation to Kirsch's work. That author presents empirical evidence bearing on the question being considered.

In two papers (1982, 1985) Kirsch makes a very similar distinction to that being made here between skill-type behaviours and behavioural propensities. He presents evidence that there are at least two kinds of task, and that the self-efficacy ratings associated with each should be interpreted differently. According to Kirsch, where a skill is involved the self-efficacy ratings of subjects can be justifiably so regarded. In relation to a task which involves approaching a feared object, however (many of the studies investigating Bandura's theory involve subjects working through a behavioural hierarchy from a relatively easy task up to a relatively difficult one), the so-called self-efficacy rating might more accurately be considered as a behavioural prediction or a rating of the subject's willingness to carry out the behaviour. Kirsch reached these conclusions after he compared the effects of hypothetical incentives on two tasks. One was a task typically used in self-efficacy Behavioural Approach Tests (BAT), and the other was a skill task, throwing a wad of paper into a waste-paper basket from varying distances.

Further, Kirsch notes that the definition of self-efficacy quoted above, while appropriate when applied to skill tasks, is not the one used by Bandura in relation to BAT situations. In essence, Kirsch is arguing that Bandura is confounding efficacy expectations and outcome expectations. In BAT situations, increased efficacy is the sense "that they can

cope with what they feared" (Bandura, 1978 b, p. 241-2), that is, with the outcomes of handling the snake (for example). Just as the feeling that one cannot hold a snake is unlikely to "concern one's capability to perform elementary motor acts such as walking, grasping and moving limbs" (Bandura, 1978 b, p. 241), so "the response that one is not able to toss a wad of paper into a basket from some particular distance does not relate to one's ability to bend an elbow, swing an arm, and release an object from one's grasp" (Kirsch, 1985, p. 828).

The important issue in the first case is what will be experienced while one is handling the snake and as a result of having handled it, and in the second case the issue is simply whether or not one believes oneself capable of putting the actions together into a sequence which will result in the paper landing in the basket. When he offered hypothetical incentives from \$5 to one's life being at stake Kirsch found that efficacy judgments could be altered in relation to the approach task but not the skill task. Despite the failure to alter efficacy judgments in relation to the skill task, Kirsch was able to induce subjects to become more willing to try the apparently impossible task with the added incentives. When asked why the incentive could affect efficacy judgments in relation to one task and not the other, most of the subjects referred to the skill involved in the paper-tossing task. The few who compared the tasks and are quoted verbatim by Kirsch can be interpreted as saying that with the snake task, but not the skill task, outcome expectations are an issue, and that the one task is a possibility (within their choosing) whereas the other may simply not be within their range of behaviour choices. For example, "One is a possibility. A snake is there. I know that I could do that (holding snake in front of face), but throwing things is different", and "Because I have terrible aim. I could never do it, but I could do the thing with the snake" (Kirsch, 1982, p. 136). On the basis of these results, Kirsch reaches his conclusion that in the case of a skill task, efficacy ratings are genuine reflections of the subject's feelings about her/his capability of performing the task, whereas in the case of an approach task, they are more likely to be simple response predictions.

In commenting on this work, Lee (1983), who has done fairly intensive research into the application of Bandura's theory, suggests that Kirsch is confusing efficacy expectations, outcome expectations, and knowledge of skill level. Obviously the physical skill required to handle the snake is minimal, whereas that needed to throw the paper accurately is greater. She suggests that after referring to their knowledge of their level of throwing skill, subjects realize that no amount of incentive will improve it, but since "efficacy expectations, however, are only indirectly predictors of ability level: more directly they are predictors of effort and persistence, and through them the development of skill" (*ibid.*, p. 58), were one to seek projected efficacy expectations (say for a week later), these might increase as the incentive increased, since there would be time to practise. What has been avoided in this analysis is the fact that subjects were still prepared to try, despite low efficacy ratings, and thus in this case outcome expectations would have predicted the behaviour better than

efficacy expectations. She does subsequently comment further on the issue, and in her own empirical work pits efficacy expectations and outcome expectancies against one another as predictors of behaviour. However, what is puzzling about her suggestion is that she has herself moved outside Bandura's realm of discourse, namely the relationship between a specific efficacy expectation on a specific occasion in relation to a specific behaviour.

In his later article (Kirsch, 1985), Kirsch replies to some criticisms made by Bandura of the 1982 work. He points out that Bandura is himself inconsistent in his use of terminology and distinguishes two types of outcome expectancy, one which might be better termed "perceived environmental contingency", the person's "knowledge of what leads to what" (Bandura, 1978 b, p. 238) and which is independent of self-efficacy judgments. Kirsch believes that others of Bandura's statements can be interpreted as meaning that outcome expectations refer to people's beliefs about the consequences of their own actions, rather than to their beliefs about environmental contingencies in a more general sense. He thus draws attention to what he regards as an obvious overlap between the constructs used by Bandura and those used by Rotter (1954) in his earlier social learning theory. Rotter defined expectancy as "the probability held by an individual that a particular reinforcement will occur as a function of a specific behavior on (her/his) part" (1954, p. 107). The operationalization of the constructs of self-efficacy (Bandura) and expectancy (Rotter), according to Kirsch, are essentially the same, that is, individuals estimate whether they will be successful at a task. He is arguing that whether one feels able to do a task is the same construct as whether one feels one will be successful at it.

It may be, as Lee suggested, that in making this distinction he is confusing skill level and self-efficacy. However, in the context of this discussion his subsequent points are relevant. Kirsch refers to some studies which suggest that when individuals estimate their probable degree of success at a task, they add their motivational level into the equation. For example, Manning and Wright (1983) found a high correlation between women's predictions that they could control labour pain without medication, and their ratings of the importance of a drug-free delivery. Motivation and choice are interdependent. If the choice of performing a behaviour is available, the higher the motivation the more likely that the behaviour will be performed. No matter how high the motivation, if there is no feeling that the choice is there, then the behaviour will not be attempted (unlike the situation where efficacy is low, but behaviour can still be manipulated by increasing incentives). If even given time people would not feel able to behave in certain ways or display certain characteristics, it would seem unlikely that praise would have a great impact. An alternative controlling mechanism would be warranted.

The empirical work reported in subsequent chapters was underway before the importance of the issues outlined above was appreciated. Then, both experimental and questionnaire studies were undertaken with reference to the preceding analysis. This work is described in Chapter 8.

#### 4.7 Other Variables

There are numerous other variables related to both the subject and the experimenter which could potentially moderate any effects of different praising locutions on behaviour. Only a few of these, with some examples, will be mentioned here.

Even in the very earliest reported work, that by Hurlock (1924), the researcher was interested in the interaction of praise and reproof with intelligence. Hurlock found a significant overall benefit of praise on learning performance but, in addition, she found that while the average and "inferior" intelligence groups improved when praised, those who were above average benefited more from reproof. Kennedy, Turner and Lindner (1962) also examined the effectiveness of praise and blame as a function of intelligence; subjects were high school children. They found that for those of average or slightly above average intelligence, blame had "a somewhat variable but generally strong inhibiting effect on performance" (ibid., p. 148). For those of high intelligence this relationship did not hold, and there was no difference between the effects of praise and blame. In the context of the present thesis one theoretical rationale for expecting an interaction with intelligence might relate to a hypothesized mediation by past experiences and self-concepts of the individuals concerned, such that their awareness of the implication of the locutions for their ability affects their behaviour (note the study of Meyer, Bachmann, Bierman, Hempelmann, Ploger and Spiller, 1979).

In relation to "intelligence", Sherman and Fazio (1983) argue that one's "level of cognitive functioning" should modify the attitude-behaviour relationship. That is, attitudes derived from deeper levels of reasoning should be more stable and form closer-knit structures with other attitudes and behaviour. Whether there may a parallel process operative in relation to self-schemata is open to consideration.

Another early area of interest was that of the interaction of the effects of praise and blame with the personality characteristic introversion/extraversion. Thompson and Hunnicutt (1944) found no significant difference between praise and blame in their effects on behaviour, and only distinguished between the responsiveness of introverts and extraverts to the treatments after more than three trials. When the praise or blame was repeated often enough, the introverts achieved a higher level of performance with praise, whereas the extraverts did so when reproofed. They concluded that "the results of this study indicate that praise, as well as blame, can be used unwisely by the elementary school teacher if he does not fully appreciate and understand the different personalities present in his classroom. Praise and blame should not be judged on an either-or basis, but should be used to fit the case" (ibid., p. 266).

Recent work by Harackiewicz, Abrahams and Wageman (1987) underscores the necessity of taking individual factors into account, particularly when evaluation might be expected to affect subsequent interest in the task. Comparing a task focus (feedback about

performance based on score norms) with a normative focus (feedback about performance based on social comparison norms) they found, among other results, that individual differences in achievement orientation moderated subjects' responses, although this effect was independent of evaluative focus.

Demographic and other variables may also relate to the response to praise. Fischer, Herschberger and Winer (1971), for example, found, using praise and criticism of subjects doing a digit-symbol substitution task, that subjects from small families responded to evaluation, and specifically to praise, more than did the others. This sort of effect might well covary with early experiences of parent-child interaction.

Bee, Van Egeren, Streissguth, Nyman and Leckie (1969) investigated social class differences in maternal language behaviour and teaching strategies. In an observational study in a waiting-room situation, significant differences were found between lower and middle-class mothers in rate of control statements, rate of disapproval, of information statements, attention and acceptance. Middle-class mothers more often told their children what they were doing correctly or wrongly. Their suggestions were less specific and more often given in the form of questions. Undoubtedly, given findings like this, social class variables would be an important area of investigation were a large-scale study of the use of parental praising locutions to be undertaken.

Swann and Pittman (1977) suggest that socioeconomic status might also relate to the response to tasks in experimental settings. They believe that the children in their second experiment were less likely overall to select the rewarded drawing task than other toys and games because they came from a lower socioeconomic group. They argue further that individuals from these groups are more likely to have an external LOC, and would thus be less likely to demonstrate intrinsic motivation.

In relation to cognitive self-instruction, Copeland (1981) suggests that there is a need to explain the relevance of individual difference factors as they influence responsiveness to cognitive self-instructional training. Factors found to relate to such responsiveness in some manner include age, with younger subjects needing more structured approaches, IQ, with those higher on the scale improving more, and socioeconomic status, with the training proving to be a more useful technique for middle-class as opposed to "disadvantaged" subjects.

Scheier and Carver (1980) speculate that the differential sensitivity between individuals to social rewards and punishments may relate through the need-for-approval to a wish to do the thing that is socially desirable. They say that people who are high in social desirability responding improve their performance on difficult tasks more after receiving positive evaluations. They would be more likely in general to be "conditioned" by social reinforcement and to conform to others' opinions.

According to Darley and Fazio (1980) little research has been done to examine variables that might determine whether a target will accept or try to dispel a perceiver's impression. Two factors, however, appear to be critical in determining the response. The first of these is the importance of the perceiver to the target, and the second is the target's beliefs about the validity of the perceiver's impressions. This latter variable has been noted above (e.g., the work of Baumeister and Jones, 1978). They argue that if the opinion is unimportant, then the target is not likely to attempt to dispel it. On the other hand, as suggested previously, if the perceiver's impression accords with the target's own, s/he is likely to behave in a manner consistent with that impression. As mentioned in a previous chapter, recent work by Hilton and Darley (1985) shows that, for a negative expectancy, when the target knows of the perceiver's expectancy, confirmation does not occur.

Perceiver variables such as the perceived competence of the evaluator may also moderate the effect of an evaluation. Webster and Sobieszek (1974) investigated subjects' responses to evaluations of their ability on a perceptual task. The evaluator's judgments had more effect on the rate of acquiescence when the evaluation was presented as "very competent" as opposed to "moderately competent" and had no effect when presented as "incompetent". Shrauger and Schoeneman (1979) conclude that "data suggest that others' expertise or competence has an impact on the acceptance of their evaluations only when that competence is specifically relevant to the judgment being made" (p. 562).

Obviously there are many other individual variables and those embedded in the relationship between subject and experimenter (such as appearance, liking, gender) might also moderate any experimental effect. It is never possible to control these completely, and thus, as in any series of studies, it is hoped that random assignment to conditions keeps them reasonably under control.

## CHAPTER 5

### STUDY 1

#### 5.1 Introduction

Study 1 was a combined experimental and questionnaire study. Broadly, the aim of the experimental study was to determine whether different praising locutions affected behaviour differently, whether "apparently subtle variations in the language of praise" (Kanouse et al, 1981, p. 98) have differential effects on behaviour. Four conditions were compared, attributional praise (attribution of "persistence"), the expression of an expectation of good performance by the experimenter, social reinforcement, and control. In addition, an investigation into whether certain individual variables moderated the effect of attributional praise was undertaken. Individual variables considered were "reinforcement history" and "attributional style". Thus subjects in the attribution group completed modified versions of the Reinforcement History Questionnaire (Sewell, Farley, Manni and Hunt, 1982; Sewell, Chandler and Smith, 1983) and the Causal Dimension Scale (Russell, 1982; Peterson, Semmel, von Baeyer, Abramson, Metalsky and Seligman, 1982).

The study was planned after reviewing the literature on social reinforcement, praise, labelling, and individual differences, and was intended as a pilot study. Although the experiment was conceived as an exploratory study which would clarify a research direction, at least one clear prediction was made. On the basis of the theoretical argument presented in Chapters 1, 2 and 3, it was predicted that the mean persistence score on the experimental tasks would be higher for Group A, the attributional praise condition, than for Group D, the control condition, and possibly higher than it was for the other two reinforcement conditions, Groups B, expectation, and C, social reinforcement. The dependent tasks, which are described below, were "open-ended", and there were no clear criteria for good performance. It was anticipated that this uncertainty would result in subjects' responding to the manipulations by spending more time at the tasks. Thus "persistence", defined as time spent on the tasks, was the main dependent measure.

The additional measures taken for Group A were predicted to interact with attributional praise. Competing predictions could be made in relation to reinforcement history. On the basis of the findings of Sewell et al it might be expected that receptivity to the attribution of a positive characteristic which has implications for future behaviour and potential success would relate to a positive perception of reinforcement history. On the other hand, if a positive reinforcement history relates to a strong sense of one's characteristics and abilities, which seems intuitively likely, the opposite relationship, a lack of receptivity to attributional praise, might be predicted.

A measure of the subject's interpretation of the locus of causality, stability and controllability of causes of achievement and affiliation events might also relate systematically to the response to the attribution of a characteristic. If the subject does not see her/himself as



the locus of events in her/his behavioural environment, s/he may not be receptive to a form of praise which has clear implications for future behaviour. Aspects of both achievement and affiliation might be seen to be represented in the experimental situation. Complete details of the questionnaires follow a description of the experiment.

### 5.1.1 The Experiment

5.1.1.1 Design: Successive subjects were assigned randomly to one of the following four conditions:

A. Experimental (attributional praise) - praise for performance, including the attribution of the characteristic "persistence".

B. Experimental (expectation) - praise for performance, including the experimenter's expectation that future performance would be good.

C. Experimental (social reinforcement) - praise, or social reinforcement, for performance.

D. Control - no praise.

Wording of the manipulations for each group are set out in the Method section. Manipulations were delivered regardless of subjects' performance or behaviour, so that the variable "behavioural evidence" was in no way controlled. That is, for some subjects who were told that they were persistent, or had done well, the experimenter's observation might have appeared to the subject to be veridical, whereas for others it would not have done.

5.1.1.2 Experimental Tasks: The tasks were designed in such a way as to lead subjects to believe that the experimenter was investigating cognitive abilities. Potential subjects received a letter asking that they participate in an experiment the purpose of which was to ascertain the relationship between performance on a variety of different tasks.

The three tasks, completed in invariant order, were:

- (1) An anagram task designed in such a way that all subjects would succeed at it.
- (2) A consequences task - "What if people could become invisible?"
- (3) The 25-dot problem - without taking pen from paper draw eight straight lines such that all dots are connected.

The tasks are displayed in Appendices 1.1.1 to 1.1.3.

The initial task, for which the experimental groups received praise, was designed to be relatively simple so that it would seem realistic to the subject that the experimenter had been impressed by her/his performance. An anagram task was chosen since this was considered both interesting and well within the competence of most Psychology I undergraduates. Using American norms (Tresselt and Mayzner, 1966) a set of five anagrams with one solution each, and with a median solution time of 7 seconds, or less, was selected. Five further anagrams each with two solutions and with median solution times of 10.5 seconds, or less, were included. However, on the basis of a pilot study the task was

changed twice, the experimenter ultimately adding her own anagrams when it was found that the American norms were inapplicable to Australian students. The final version of the task was set out in three lists to make it look "convincing" (that is, it could be seen as increasing in difficulty from list to list). The first list included 4-letter anagrams, the second 5-letter, and the third 6-letter anagrams.

The "persistence" tasks had to be open-ended in the sense that the subject should be able to spend as much or as little time on them as s/he desired. An idea taken from Torrance's (1966) creativity test ("Thinking creatively with words") was used, the virtue of the test being that tasks are presented which have no specifiable solution and are therefore "open-ended" in the sense required. Torrance uses tasks such as Ask-and-Guess, Unusual Uses, and Guessing Consequences. The task used in this study is a variant of Guessing Consequences, called "What If....?". The specific imaginary event was taken from an example used by Amabile (1982).

The second persistence task, the 25-dot problem, was selected as being interesting, and able to be worked upon for as long as the subject desired. In addition, the instructions were such as to give her/him scope to continue even if s/he hit on a solution early.

In selecting the experimental tasks the main aim of the experiment was the primary consideration, rather than any attempt being made to equate tasks. The aim of the study was to investigate the effect of various locutions delivered at specific points in a sequence of tasks. Thus tasks were included simply on the basis that they appeared *prima facie* to fulfil the experimenter's criteria, and that pilot subjects found them sufficiently engaging. That each group did the tasks in an invariant order might ordinarily give rise to a "task X order" confound. A complete factorial design would have overcome this problem, but it would have resulted in the inclusion of a number of groups whose data would not have been meaningful in the context of the experimental question. However, given the task order invariance, any observations of differences among tasks should be regarded with caution.

A post-experiment questionnaire was also used (see Appendix 1.1.4). Subjects were asked what they thought the purpose of the experiment was and, as a manipulation check, how well they thought the experimenter thought they would do at the tasks. They were also asked whether they believed that the experimenter judged them to be persistent. Finally, each subject rated her/himself on persistence.

## 5.1.2 The Questionnaires

### 5.1.2.1 Adaptation of the Reinforcement History Questionnaire

The Reinforcement History Questionnaire, developed by Baron (see Sewell, Chandler and Smith, 1983) and used by Sewell et al and Sewell, Farley, Manni and Hunt (1982), is designed to assess the respondent's perception of the reactions s/he usually receives in a variety of situations. The version of the questionnaire used by Sewell and his colleagues consists of 40 items each describing a situation which the respondent might have

experienced, together with a set of possible reactions from others in this situation. Characteristic reactions of father, mother, teacher and peers are included. The respondent is asked to circle that reaction which s/he usually encounters; a "does not apply" alternative is also available. For each item there is a positive and a negative reaction alternative, and a third "indifferent" alternative.

Sewell et al (1982) derived two scores from the questionnaire, one for positive reactions and one for negative reactions. Sewell et al (1983) derived three scores, positive, negative, and a third score for "indifferent" reactions.

It was judged, however, that many of the "indifferent" reactions of others were in fact negative, while others were merely neutral: it was therefore decided to create a "neutral" third category. Thus the Baron Reinforcement History Questionnaire was adapted to include this "neutral" category. A series of alternative responses was created for the items with non-neutral alternatives in the Sewell version. An attempt was made to ensure that they were as close as possible to the original reaction while reflecting "neutral" (that is, neither positive nor negative) rather than "indifferent" reactions.

Two sets of rating questionnaires were prepared for assessment by judges (psychologist colleagues of the researcher). In one set, for each item, the Baron/Sewell "indifferent" alternative was included plus the positive or negative alternative for that same item. The other set included, for each item, the researcher's "neutral" alternative and, in addition, the same positive or negative alternative reaction used in the equivalent item in the first set. Thus both sets of judges saw the significant alternative in the context of either a positive or a negative alternative reaction. Instructions to the judges appear in Appendix 1.2. Ten judges rated the Baron/Sewell version, and ten rated this researcher's new version.

For final selection of alternatives for inclusion in the questionnaire used here, the following criteria were used:

- for the "neutral" alternative, that reaction (either the Baron/Sewell version or the new version) which was closest to the midpoint on the 7-point scale (average of ten judgments).
- for positive and negative alternatives (this was included largely as a check on Baron's and Sewell's use), reactions were altered which fell into the neutral range, or to the opposite extreme (none did) - only one item, item 11, was altered by this criterion (wording was thus altered from "gave you what you wanted" to "gave you whatever you wanted").
- if the rating for the Baron/Sewell alternative was equal to that for the newly created alternative, and within the neutral range (points 3-5 on the rating scale), the former was retained.

In addition to consequent changes of some of the alternatives resulting from this process, the wording of the questionnaire was altered to the past tense. As the original version of the questionnaire is intended for use with school-age children, and indeed many

of the described situations reflect this, past tense was considered more appropriate for Psychology I undergraduates, for whom many of the situations would probably be in the recent past.

Minor changes of wording were also made to adapt the scale to Australian colloquial usage. The instructions were also rewritten. The final questionnaire, used in the present study, appears in Appendix 1.3.

#### 5.1.2.2 Adaptation of the Attributional Style Questionnaire

Attempts have been made to devise an instrument that will measure "attributional style". Seligman and his co-workers (e.g., Peterson, Semmel, von Baeyer, Abramson, Metalsky and Seligman, 1982) have been interested in the question of whether there is a depressive attributional style and their work was discussed in Chapter 4. It was decided that the situations used by Peterson et al would be suitable for use in the present study, but that their questionnaire could usefully be adapted by incorporating the Causal Dimension Scale of Russell (1982).

Russell's scale is designed to assess how the respondent perceives the causes s/he has given for a specific event or situation. The final version of the scale consists of nine dimensions, an equal number of which assess locus of causality, stability and controllability (dimensions described by Weiner, 1979). Russell describes two studies in which he tested and developed the scales. Respondents were given eight achievement situations consisting of an outcome (success or failure) and one of eight causal attributions. By subjecting each item to a separate analysis of variance he determined that the three subscales were adequately discriminable. A factor analysis confirmed these results, the factor structure clearly corresponding to the three causal dimension subscales. All three scales were found to be internally consistent. There was a difference between the evaluations of causes following success and failure outcomes. Respondents in general viewed the causes of success as more internal, more stable, and more controllable, than the causes of failure.

The final version of the scale presented in Russell "is designed for settings in which the investigator is assessing both the respondent's causal explanation for an event and the respondent's perceptions of the causes he or she has stated" (1982, p. 1143). It was thus ideal for use in the present context. Russell notes that caution is necessary in assuming the validity of the scale in contexts other than those relating to achievement.

In summing up, Russell notes the work of Seligman and his colleagues, and emphasizes that the Causal Dimension Scale does not assess attributional style as such. However, it was decided to use the questionnaire created by combining the situational format of Seligman et al with the rating scales of Russell; the resulting questionnaire is shown in Appendix 1.4. It was intended that any results obtained would be viewed with some degree of caution since the questionnaire does not measure attributional style per se, nor has it been validated in relation to affiliation contexts. It was nevertheless seen as an

experimental version of what might be regarded as a more "fine-grained" measure of causal perception than the existing global measures of Locus of Control (e.g., Rotter, 1966).

## **5.2 Method**

**5.2.1 Subjects:** Eighty Psychology I undergraduates enrolled in 1984 participated in the study. Of these, the 26 who were in the attributional praise group completed the questionnaires. There was an expectation that all enrollees would participate in five hours of experimentation during the year, and they were credited with time for doing so. They were, however, able to accept or refuse requests relating to individual studies. Thus those students who did respond were apparently interested by the description of the study. The mean age of participants was 20.96 years (s.d.=5.91). Fifty-seven were female and 23 were male.

**5.2.2 Operational Definition:** The characteristic attributed, "persistence", was operationally defined as "length of time spent at the tasks". Thus a comparison among groups was made of time spent on each of the experimental tasks.

**5.2.3 Procedure:** As has been indicated, subjects were contacted by letter and asked to sign up at the departmental office at a personally convenient time. They were led to believe that they would be participating in a study on cognitive abilities.

As each subject entered the experimental room the experimenter greeted her/him by name, introduced herself, and thanked her/him for coming. The experimenter also made some casual remark in a friendly manner, about the weather, for example, or the subject's ease or otherwise in finding the experimental room. The subject was then asked to sit at the desk set up for her/him about 10-12 feet away from the experimenter's desk. Experimenter and subject were thus seated at an angle from one another, and each could easily see the other.

The first task was described as an anagram task. The experimenter approached the subject's desk with the task, and explained that with this task, as indeed with all subsequent tasks (number not specified), s/he should read the instructions quietly, ask questions if necessary, but otherwise begin when ready, using the scrap paper as required. If the subject asked whether there was a time-limit, the experimenter answered "No, no time limit". If the subject asked what would happen if s/he were unable to do the task, the experimenter replied "Don't worry about it. Stop when you feel you want to".

The experimenter was easily able to determine when the subject had finished because generally the subject put down the pen and looked expectantly at her, or said "I've finished". Then the experimenter would approach the subject's desk and pick up the completed task, looking at it and saying the appropriate manipulation. If the subject interrupted, the experimenter would simply smile and nod, and wait, but would not specifically respond to the comment.

It should be noted that in this experiment, as in all experiments reported in this thesis, subjects were randomly allocated to groups. Computer-generated pseudo-random sequences were used.

The subject was then given the second task with the comment "See how you get on with this one, a completely different task this time". As the subject turned the page and put pen to paper, the experimenter surreptitiously started the digital stop-watch secreted in her right (capacious) skirt pocket. She also noted the time by her watch so that she could stop the subject after 25 minutes if necessary. This was a maximum time set for the task, after which the subject was stopped with the explanation that s/he had better finish that one off now so that s/he could continue with the next one. This procedure was adopted so that a running time of one hour per subject could be managed. Occasionally a subject would ask during this task "How many do you want?"; the experimenter would answer "Just until you run out of ideas". When the subject clearly signalled that s/he had finished (as above), the experimenter surreptitiously stopped the timer, and once again approached the subject's desk to pick up the completed task.

Again looking at the work, she delivered the appropriate manipulation, and introduced the third task in the same way as the second, as a "completely different task this time". The same timing procedure was adopted; this time the experimenter started the timer in her left-hand pocket. If the subject showed frustration during this task and said anything to the experimenter, she replied "Lots of people don't solve this one - I will show you a solution finally". All subjects were shown a solution once they had indicated to the experimenter that they had stopped working on the task.

Then the post-experiment questionnaire was given to the subject. If the subject had been in Group D, the control group, the experimenter then told her/him that s/he had done well on all the tasks. If the subject was in Group A, the attribution group, the experimenter asked her/him if s/he would mind taking away two other questionnaires to complete at home (the RHQ and the CDS described above). S/he was promised a further hour's time credit when these were returned completed. A subsequent 'phone call was made to Group A subjects who did not return the questionnaires within one week.

The experimenter then thanked the subject for participating and told her/him that she would write in due course explaining her hypotheses and outlining her results. The subject was also told that s/he would be credited with the participation time.

#### 5.2.4.1 Wording of Manipulations: After Anagram Task

Group A (attribution): "How did you get on - any problems? (looking at solutions). Yes, you've done well, you have a very good score (or, you have scored ten out of ten). It's interesting about anagrams - psychologists have found that people who solve anagrams well tend to have the personality characteristic of persistence. It seems to be related to persistence rather than to any specific intellectual characteristic. I guess you must be a persistent person." → 50?

Group B (expectation): "How did you get on - any problems? (looking at solutions). Yes, you've done well, you have a very good score (or, you have scored ten out of ten). It's

interesting about anagrams - psychologists have found that people who solve anagrams well tend to do well on a number of different tasks with no obvious verbal content, tracing with the non-dominant hand, for example. I expect you'll do well on this next task too."

Group C (social reinforcement): "How did you get on - any problems? (looking at solutions). Yes, you've done well, you have a very good score (or, you have scored ten out of ten). It's interesting the different sorts of tasks psychologists get their subjects to do. I guess it must be very puzzling for the subjects to see how they could relate to each other - one psychologist had subjects tracing with the non-dominant hand and learning nonsense syllables, for example."

Group D (control): "How did you get on - any problems? (looking at solutions). I'll let you know your score once all the tasks are completed. It's interesting the different sorts of tasks psychologists get their subjects to do. I guess it must be very puzzling for the subjects to see how they could relate to each other - one psychologist had subjects tracing with the non-dominant hand and learning nonsense syllables, for example. But of course we can't explain at the time."

#### 5.2.4.2 Wording of Manipulations: After Consequences Task

Group A (attribution): "Did you find that task interesting? Yes, you've written quite a bit, haven't you? Good. I think you must really be a persistent person to have stuck at it that long."

Group B (expectation): "Did you find that task interesting? Yes, you've written quite a bit, haven't you? Good. Judging on how you've gone so far I expect you'll do well on the next task too."

Group C (social reinforcement): "Did you find that task interesting? Yes, you've written quite a bit, haven't you? Good. Most subjects seem to enjoy that one - they say it's unusual and are often surprised at how much they can think up."

Group D (control): "Did you find that task interesting? It's rather an unusual task, don't you think? Most subjects seem to enjoy it. They're often surprised at how many consequences they can think up."

### 5.3 Results and Discussion

#### 5.3.1 Measures Obtained

The following scores were obtained for each subject:

- (1) Time spent on Consequences task (maximum 25 minutes).
- (2) Number of distinctly different ideas produced.
- (3) Time spent on Matrix problem (maximum 25 minutes).
- (4) Number of matrices attempted.
- (5) Number of correct matrix solutions.

- (6) Subject's rating of how well the experimenter thought s/he would do.
- (7) Subject's rating of how persistent the experimenter thought s/he was.
- (8) Subject's self-rating of persistence.

For Group A, the attributional praise group, the RHQ scores obtained were:

- (1) Number of negative experiences as a proportion of number of non-null ("does not apply" eliminated) experiences.
- (2) Number of positive experiences as a proportion of number of non-null experiences.
- (3) Number of negative experiences as a proportion of number of negative plus number of positive experiences.
- (4) Number of positive experiences as a proportion of number of negative plus number of positive experiences.

The CDS scores obtained were:

For good achievement situations

- (5) locus of causality
- (6) stability
- (7) controllability

For bad achievement situations

- (8) locus of causality
- (9) stability
- (10) controllability

For good affiliation situations

- (11) locus of causality
- (12) stability
- (13) controllability

For bad affiliation situations

- (14) locus of causality
- (15) stability
- (16) controllability

For all good outcomes (achievement plus affiliation)

- (17) locus of causality
- (18) stability
- (19) controllability

For all bad outcomes

- (20) locus of causality
- (21) stability
- (22) controllability



### 5.3.2 Analyses

A file of data was created on the Vax-B computer at the University of Adelaide and the statistical package, SPSS-X (SPSS Inc.,1983), was used to do the analyses. This is true for all major analyses described in subsequent chapters.

#### 5.3.2.1 Experimental Variables: Comparison of Groups on Persistence Scores

Three oneway analyses of variance were calculated. The four groups were compared on both persistence tasks (Consequences and Matrices), and on average persistence.

##### 5.3.2.1.1 Average Persistence

A significant F-ratio was obtained when groups were compared on their average persistence scores. Table 5.1 shows the results of the analysis of variance.

**Table 5.1:** Results of analysis of variance comparing groups on average of time spent on Consequences and Matrix tasks.

Source	df	SS	MS	F	F-prob.
Between groups	3	460.33	153.44	8.187	.00001
Within groups	76	1322.67	17.40		
Total	79	1783.02			

*any corrections in table missing in the cells?*

Post-hoc comparisons indicated that Groups A, attribution, and B, expectation, were significantly different from Groups C, social reinforcement, and D, control, but that neither Groups A and B, nor C and D, were significantly different from each other (Student-Newman-Keuls,  $p < .05$ ). Table 5.2 shows the means and standard deviations for each group.

**Table 5.2:** Means and standard deviations, by group, of the average of the time spent on Consequences and Matrix task.

Group	Mean	s. d.	N
A	16.76	4.03	26
B	16.94	4.13	18
C	11.91	4.65	18
D	12.12	3.90	18

It seems from this result that the attribution of a characteristic, when compared with the expression of a positive expectation for subjects' performance, does not relate to a

greater length of time being spent on the dependent tasks. Similarly, social reinforcement and control conditions do not differentially affect subjects' performance.

**5.3.2.1.2 Persistence at Consequences Task**

A significant F-ratio was obtained when groups were compared on time spent at the Consequences task: Table 5.3 shows the results of the analysis of variance.

**Table 5.3:** Results of analysis of variance comparing groups on time spent on Consequences task.

Source	df	SS	MS	F	F-prob.
Between groups	3	235.24	78.41	3.45	.021
Within groups	76	1726.87	22.72		
Total	79	1962.11			

Means and standard deviations appear in Table 5.4.

**Table 5.4:** Means and standard deviations, by group, of time spent on Consequences task.

Group	Mean	s. d.	N
A	13.62	5.13	26
B	13.13	5.19	18
C	12.21	5.19	18
D	9.15	2.99	18

Post-hoc comparisons indicated that groups A, attribution, and B, expectation, were significantly different from Group D, control, but not from Group C, social reinforcement (Student-Newman-Keuls,  $p < .05$ ). That is, it seems that the different praising locutions had not discriminated among groups at the first stage of the experiment, since there was no difference among the experimental groups. It can be concluded from this result that one delivery of a praising manipulation is insufficient to result in differences among groups, at least when time spent on this particular task is the dependent measure.

**5.3.2.1.3 Persistence at Matrix Task**

The results of the oneway analysis of variance comparing groups on their persistence at the Matrix task are set out in Table 5.5, and means and standard deviations for the groups are shown in Table 5.6.

**Table 5.5:** Results of analysis of variance comparing groups on time spent on Matrix task.

Source	df	SS	MS	F	F-prob.
Between groups	3	1002.36	334.12	11.045	.00001
Within groups	76	2299.16	30.25		
Total	79	3301.52			

**Table 5.6:** Means and standard deviations, by group, of time spent on Matrix task.

Group	Mean	s. d.	N
A	19.46	5.37	26
B	20.74	5.19	18
C	11.59	5.15	18
D	15.07	6.25	18

Post-hoc comparisons indicated that groups A, attribution, and B, expectation, were significantly different from Groups C, social reinforcement, and D, control, but that neither A and B, nor C and D, were significantly different from each other (Student-Newman-Keuls,  $p < .05$ ). It may be concluded, as it was on the basis of the average persistence result, that an attribution and an expectation manipulation did not differentially affect behaviour. Social reinforcement had no more effect on time spent on the matrix task than did a control condition.

Interestingly, Group C, social reinforcement, was the only group that did not spend longer on this task than on the Consequences task.

### 5.3.2.2 Comparison of Groups on Productivity

#### 5.3.2.2.1 Number of Consequences

A oneway analysis of variance comparing the groups on number of distinctly different consequences produced was not significant ( $F=1.44$ ,  $p=.24$ ), indicating that there was no significant difference among groups on productivity, although there were significant differences in time spent at this task. Table 5.7 shows the means and standard deviations on this variable for the four groups.

**Table 5.7:** Means and standard deviations, by group, of number of consequences produced.

Group	Mean	s. d.	N
A	12.62	5.22	26
B	12.67	5.30	18
C	10.50	4.39	18
D	10.28	4.01	18

#### 5.3.2.2.2 Number of Matrices

A oneway analysis of variance comparing the groups on number of matrices attempted was not significant ( $F=1.34$ ,  $p=.26$ ). This shows that there was no difference among the groups on productivity, although there were differences in time spent on the task. It is interesting to speculate as to the nature of the cognitive processes underlying these effects. Perhaps subjects were really thinking hard about the problems, or perhaps they were engaged in some form of "self-talk" (e.g., "I really should stick at this a bit longer").

Table 5.8 shows the means and standard deviations for all groups.

**Table 5.8:** Means and standard deviations, by group, of number of matrices attempted.

Group	Mean	s. d.	N
A	11.69	6.42	26
B	11.67	5.30	18
C	8.67	3.14	18
D	11.50	6.12	18

#### 5.3.2.2.3 Number of Correct Matrix Solutions

There were no significant differences among groups on number of correct matrix solutions, as indicated by a non-significant oneway analysis of variance ( $F=.49$ ,  $p=.68$ ).

In fact many subjects did not solve the problem at all, as can be seen from the means and standard deviations shown in Table 5.9. This result indicates that the task had indeed been suitable for its intended purpose, that of acting as a measure of persistence.

**Table 5.9: Average number of correct matrix solutions, by group.**

Group	Mean	s. d.	N	Max.solns
A	.23	.51	26	2
B	.39	.60	18	2
C	.22	.43	18	1
D	.22	.43	18	1

#### 5.3.2.2.4 Correlation of Number of Correct Matrix Solutions with Number of Consequences Produced

The shorter the time spent on the Consequences task ( $r=-.19$ ,  $p=.049$ ,  $N=80$ ), and the fewer consequences produced ( $r=-.25$ ,  $p=.012$ ,  $N=80$ ), the more matrix solutions the subject produced (however it must be noted that many subjects did not produce any solutions). Perhaps this result reflects a negative relationship between ability at the two different types of task.

#### 5.3.2.3 Correlation between Persistence and Productivity on the Consequences Task and on the Matrix Task

There were significant positive correlations between time spent on the Consequences task and number of consequences produced ( $r=.50$ ,  $p=.0001$ ,  $N=80$ ), and between time spent on the Matrix task and number of matrices attempted ( $r=.27$ ,  $p=.007$ ,  $N=80$ ).

#### 5.3.2.4 Correlation between Persistence at the Consequences Task and at the Matrix Task

There was a significant positive correlation between time spent on the Consequences task and time spent on the Matrix task ( $r=.38$ ,  $p=.0001$ ,  $N=80$ ). This indicates that, at least in the context of the experiment, there was an intra-subject tendency to be more or less persistent.

#### 5.3.2.5 Comparison of Groups on Experimenter Ratings

Oneway analyses of variance were calculated to compare groups on the rating tasks.

##### 5.3.2.5.1 Comparison of Groups on the Experimenter's Judgment of their Persistence

A significant F-ratio was obtained when groups were compared on their perception of the experimenter's judgment of their persistence; the results are shown in Table 5.10.

**Table 5.10:** Results of analysis of variance comparing groups on their ratings of the experimenter's judgment of their persistence.

Source	df	SS	MS	F	F-prob.
Between groups	3	65.23	21.74	13.31	.00001
Within groups	57	93.09	1.63		
Total	60	158.33			

Means and standard deviations for each group are shown in Table 5.11 (note that since subjects were given the opportunity not to make a rating if they really could not make a judgment, n's are less than the total N's of 26 for the attribution group, and 18 for every other group - this also applies to Tables 5.13 and 5.15).

**Table 5.11:** Means and standard deviations, by group, of subjects' ratings of their perception of the experimenter's judgment of their persistence.

Group	Mean	s. d.	n
A	7.84	.69	25
B	6.00	1.42	10
C	6.00	1.79	11
D	5.47	1.50	15

*This is likely a typo for 0.69*

As would be expected, post-hoc comparisons showed that Group A, attribution, was significantly different from all other groups (Student-Newman-Keuls,  $p < .05$ ). It is interesting to note, too, that the variability among the ratings of Group A is significantly less than it is among the ratings of all other groups ( $F = 5.51$ ,  $df = 35/24$ ,  $p < .01$ ). The results of these analyses indicate that subjects in Group A were indeed aware of the content of the experimenter's praising locution, and also perhaps that, as a group, they were more certain of that perception. Further, it seemed that a larger proportion of subjects in Group A were prepared to make a rating in relation to the experimenter's judgment of their persistence.

#### 5.3.2.5.1.1 Comparison of Numbers in Each Group of Subjects Not Completing the Rating Scales

Proportions were calculated, for each group, of subjects who felt unable to judge what the experimenter had thought about their persistence. These are shown in Table 5.12. These proportions are further evidence of the effect of the attributional praise on Group A, a point which is taken up in Section 5.4, the General Discussion.

**Table 5.12:** Proportions, by group, of subjects who felt unable to make a rating of their perception of the experimenter's judgment of their persistence.

Group	Proportion
A	.04
B	.44
C	.39
D	.17

#### 5.3.2.5.2 Comparison of Groups on the Experimenter's Expectation of Subjects' Performance

A oneway analysis of variance comparing the average ratings of the groups on whether the experimenter expected subjects to do well yielded a non-significant F-ratio ( $F=.65, p=.58$ ). This is interesting since it might have been expected that Group B, the expectation group, would rate higher than the other groups. Perhaps this indicates that, while it does affect behaviour, an expectation manipulation is in some sense less salient than is attributional praise.

The means and standard deviations are shown in Table 5.13 (Note: total N's are 18 for every group, except Group A,  $N=26$ ).

**Table 5.13:** Means and standard deviations, by group, of subjects' rated judgment of whether the experimenter expected them to do well.

Group	Mean	s. d.	n
A	7.19	1.20	26
B	7.24	1.44	17
C	6.53	1.91	17
D	7.28	0.96	18

#### 5.3.2.5.2.1 Comparison of Numbers in Each Group of Subjects Not Completing the Rating Scales

Proportions of subjects in each group who were unable to make a judgment about the experimenter's expectations are shown in Table 5.14.

**Table 5.14:** Proportions, by group, of subjects who felt unable to make a rating about the experimenter's expectations.

Group	Proportion
A	.42
B	.11
C	.11
D	.17

A value for chi-squared calculated after combining Groups B, expectation, C, social reinforcement, and D, control, for comparison with Group A, attribution, was significant ( $\chi^2 = 8.66$ ,  $df=1$ ,  $p < .01$ ). That is, significantly more subjects in the attribution group indicated that they could not make a judgment about the experimenter's expectations for their performance.

It is difficult to interpret this result in view of the fact that subjects in Group A were aware that the experimenter considered them to be persistent. Although that manipulation was obviously seen to have implications for subjects' behaviour, it was apparently not interpreted by them as meaning the same as that the experimenter thought they would "do well".

#### 5.3.2.6 Comparison of Groups on Self-Rated Persistence

A oneway analysis of variance was calculated to compare groups on whether they generally considered themselves persistent. A non-significant F-ratio was obtained ( $F=1.14$ ,  $p=.34$ ). This demonstrates that the groups were equivalent in self-rated persistence before coming to the experimental situation. Means and standard deviations of the groups are set out in Table 5.15 (Note: total N's are 18 for every group, except Group A,  $N=26$ ).

**Table 5.15:** Means and standard deviations, by group, of self-ratings of persistence.

Group	Mean	s. d.	n
A	5.80	1.08	15
B	6.06	1.69	16
C	5.44	1.26	16
D	5.73	0.88	15



### 5.3.2.7 Correlation between Persistence and Self-Rated Persistence

There was a significant positive correlation between persistence, defined as average time spent on the tasks, and self-rated persistence ( $r=.21$ ,  $p=.034$ ,  $N=78$ ). This implies that there is a relationship between self-concept and behaviour.

### 5.3.2.8 Correlation between Number of Correct Matrix Solutions and Self-Rated Persistence

The more generally persistent subjects rated themselves to be, the more matrix solutions they produced ( $r=.19$ ,  $p=.042$ ,  $N=80$ ), although this was not a high correlation and it should be noted that many subjects did not produce any solutions.

## 5.3.3 Attribution Group: Questionnaire Data

### 5.3.3.1 Comparison of Subjects Above and Below the Median of Average Persistence

The attribution group (Group A) was split at the median of average persistence (17.25 minutes). A series of 22 t-tests was carried out to determine whether high and low persisters in response to the manipulation differed on any of the questionnaire variables. Only one difference was significant. Those above the median had a higher average controllability score for bad achievement and affiliation situations combined (above median, mean=108.46, s.d.=27.25; below median, mean=89.31, s.d.=13.92:  $t=-2.26$ ,  $df=17.86$ ,  $p=.037$ ).

### 5.3.3.2 Correlation of Experimental Variables with Questionnaire Variables

Table A1.1, Appendix 1.5, shows the results of all correlations that were calculated between the 22 questionnaire variables and selected experimental variables. Number of "neutral" experiences was treated separately (see Section 5.3.3.3.3). Correlations between reported number of "neutral" experiences and the experimental variables do not appear on the table. Except for one referred to below, all correlations were less than .15.

#### 5.3.3.2.1 Correlation of Average Persistence with Questionnaire Variables

Average persistence correlated with locus of causality for good affiliation situations ( $r=.46$ ,  $p=.009$ ,  $N=26$ ), with controllability for good affiliation situations ( $r=.45$ ,  $p=.01$ ,  $N=26$ ) and with controllability for bad affiliation situations ( $r=.42$ ,  $p=.017$ ,  $N=26$ ).

That is, there was a relationship between behaving persistently in response to the manipulation and having an internal locus of causality in good affiliation situations, and seeing such situations as controllable. It also related to seeing bad affiliation situations as controllable.

The experimental situation could be seen as having components both of achievement and of affiliation. Perhaps subjects who see affiliation situations as controllable tend to behave consistently with an attribution (or any other apparent expectation) as part of a "strategy" for keeping them controllable. For subjects who see themselves as the locus of events in their environment it is likely to seem practicable to adopt an attributed characteristic

and behave consistently with it. Subjects with an external locus of causality on the other hand are less likely to believe that having a personal characteristic necessarily has any implications for their behaviour. However, such interpretations should not be given great weight in view of the small proportion of significant correlations obtained.

#### 5.3.3.2.2 Correlation of Self-Rated Persistence with Questionnaire Variables

Self-rated persistence correlated negatively with locus of causality for bad achievement situations ( $r=-.35$ ,  $p=.039$ ,  $N=26$ ), and positively with the proportion of positive (out of non-null) experiences reported on the RHQ ( $r=.39$ ,  $p=.025$ ,  $N=26$ ). That is, seeing oneself as generally persistent relates to having an external locus of causality in negative achievement situations, and with perceiving oneself as having generally good experiences with significant others. In addition, the fewer neutral experiences noted on the RHQ, the more persistent the subject is likely to rate her/himself ( $r=-.35$ ,  $p=.042$ ,  $N=26$ ).

#### 5.3.3.2.3 Correlations between Other Experimental Variables and Questionnaire Variables

Only selected significant correlations will be reviewed here. Subjects' awareness of the experimental manipulation (the experimenter perceiving them as persistent) related to some of the questionnaire variables. The greater the controllability of bad affiliation situations was seen to be the more subjects thought the experimenter perceived them as persistent ( $r=.35$ ,  $p=.039$ ,  $N=26$ ). However, the greater the perceived stability of bad situations in general (achievement and affiliation combined), the less subjects thought the experimenter perceived them as persistent ( $r=-.52$ ,  $p=.003$ ,  $N=26$ ). This implies that attributional style may influence a subject's interpretation of the experimenter's behaviour.

Many of the relationships between performance in the experimental situation and the attributional style variables were in an intuitively obvious direction. Thus, as might be expected, the higher the stability score for good achievement situations, the more matrices were attempted ( $r=.39$ ,  $p=.025$ ,  $N=26$ ), and the more consequences were produced ( $r=.49$ ,  $p=.005$ ,  $N=26$ ).

Similarly, the greater the controllability for bad achievement situations, the more matrices were attempted ( $r=.40$ ,  $p=.021$ ,  $N=26$ ), and the more controllable bad affiliation situations were seen to be, the more consequences were produced ( $r=.40$ ,  $p=.021$ ,  $N=26$ ).

The more stable bad achievement situations were seen to be, the less time was spent on the matrices ( $r=-.45$ ,  $p=.011$ ,  $N=26$ ), and the more controllable those situations were seen to be the more time was spent on the matrices ( $r=.41$ ,  $p=.02$ ,  $N=26$ ). In addition, the more controllable bad affiliation situations were seen to be, the more time was spent on the matrices ( $r=.44$ ,  $p=.013$ ,  $N=26$ ). (And the more controllable all bad outcomes were seen to be, the more time was spent on the matrices ( $r=.46$ ,  $p=.01$ ,  $N=26$ )).

The more internal the locus of causality for good affiliation situations, the more time was spent on the matrices ( $r=.37$ ,  $p=.03$ ,  $N=26$ ), and the more controllable those situations were seen to be, the more time was spent on the matrices ( $r=.48$ ,  $p=.006$ ,  $N=26$ ).

The more stable bad affiliation situations were seen to be ( $r=.45$ ,  $p=.01$ ,  $N=26$ ), and the more controllable these situations were seen to be ( $r=.44$ ,  $p=.013$ ,  $N=26$ ), and the more negative (out of non-null) experiences were reported ( $r=.35$ ,  $p=.038$ ,  $N=26$ ), the more time was spent on the Consequences task. Of all the observed relationships this pattern of results is the most difficult to interpret.

A general conclusion can be drawn from the overall pattern of relationships observed that attributional style apparently does relate to overt behaviour.

### 5.3.3.3 Correlation between Reinforcement History Questionnaire Variables and Causal Dimension Scale Variables

Table A1.2, Appendix 1.6, shows the correlations between the RHQ variables and the CDS variables.

#### 5.3.3.3.1 Positive Experiences

The proportion "positive experiences/total of non-null experiences" correlated significantly with locus of causality ( $r=.58$ ,  $p=.001$ ,  $N=26$ ), stability ( $r=.39$ ,  $p=.026$ ,  $N=26$ ) and controllability ( $r=.39$ ,  $p=.024$ ,  $N=26$ ) for good achievement situations.

It also correlated positively with controllability for good affiliation situations ( $r=.39$ ,  $p=.022$ ,  $N=26$ ). There were also significant correlations with locus of causality and controllability for all good situations (achievement plus affiliation), but these are partly accountable for with reference to the above correlations.

These results indicate that the more positive reinforcement experiences a subject perceives her/himself to have had, the more s/he perceives good achievement situations, and to some extent good affiliation situations, as internally caused, stable, and controllable.

Correlations of the proportion "positive experiences/positive + negative experiences" with locus of causality for good achievement situations ( $r=.34$ ,  $p=.044$ ,  $N=26$ ), and with stability for good achievement situations ( $r=.45$ ,  $p=.009$ ,  $N=26$ ), lent further support to this conclusion.

#### 5.3.3.3.2 Negative Experiences

The more negative experiences were reported, the more bad causes were seen as stable ( $r=.41$ ,  $p=.019$ ,  $N=26$ ), and controllable ( $r=.39$ ,  $p=.022$ ,  $N=26$ ). This result was obtained by correlating the proportion "negative experiences/total non-null experiences" with the CDS variables.

However, using the proportion "negative experiences/positive + negative experiences", it seems that the fewer negative experiences the subject had had, the more

stable good achievement situations were perceived to be ( $r=-.43$ ,  $p=.014$ ,  $N=26$ ). Locus of causality for good achievement situations approached significance too ( $r=.33$ ,  $p=.052$ ,  $N=26$ ).

#### 5.3.3.3.3 "Neutral" Experiences

Interestingly, some significant correlations emerged between the proportion of so-called "neutral" experiences (out of the total of non-null experiences) and the CDS variables. "Neutral" scores were calculated separately, as were these correlations, after a subjective observation of an apparent pattern in the data (Sewell et al, 1982, do not specifically recommend the calculation of an "indifferent" score from their questionnaire).

All correlations were negative except for that relating to the controllability of bad affiliation outcomes. Significant correlations were these - the fewer neutral experiences the subject had had the more internal was the locus of causality for good achievement situations ( $r=-.57$ ,  $p=.001$ ,  $N=26$ ), as it was for good affiliation situations ( $r=-.39$ ,  $p=.025$ ,  $N=26$ ); the fewer neutral experiences the subject had had, the more good achievement outcomes were seen as controllable ( $r=-.42$ ,  $p=.017$ ,  $N=26$ ), as were good affiliation outcomes ( $r=-.47$ ,  $p=.007$ ,  $N=26$ ). These correlations contributed to the significant correlations between neutral experiences and locus of causality for good situations ( $r=-.60$ ,  $p=.001$ ,  $N=26$ ) and controllability for good situations ( $r=-.55$ ,  $p=.003$ ,  $N=26$ ).

It seems that "neutral" responses are perceived in a more unfavourable manner than are negative responses. Perhaps they are perceived as indifference (despite the attempt to build the distinction between "neutral" and "indifferent" into the scale), a reaction which is experienced as more negative than those reactions actually classified as negative. This interpretation is consistent with Crandall's (1963) suggestion that ignoring mistakes (for example) is a neutral experience whereas silence or non-reaction following a positive reaction is negative. She found some support for the latter hypothesis with children, but not adults. At any rate, there is a clear pattern of relationships here between the perception of such responses by others in the past, and current attributional style.

The least intuitively comprehensible result, given the observed pattern, is the correlation between neutral experiences and stability of bad situations. The fewer neutral experiences were reported, the more stable bad situations were seen to be ( $r=-.37$ ,  $p=.031$ ,  $N=26$ ).

#### 5.3.3.4 Comparison of Males and Females

Although there was no theoretical reason to expect any gender differences, a series of 22 t-tests was calculated to investigate this variable. No significant differences were found between males and females in responding on either questionnaire.

### 5.3.3.5 Causal Dimension Scale: Comparison of Good and Bad Outcomes

Means and standard deviations were calculated separately for good and bad outcomes on the CDS. These are displayed in Table 5.16.

**Table 5.16:** Causal Dimension Scale - Means and standard deviations of good and bad outcomes by situation type.

Situation/Scale	Good Situations		Bad Situations	
	Mean	s.d.	Mean	s.d.
Achievement	51.69	15.93	50.73	13.79
Locus of Control	47.80	14.81	29.69	13.46
Stability	63.08	11.71	49.81	8.72
Affiliation				
Locus of Control	57.92	11.63	47.65	9.89
Stability	35.92	12.11	31.12	10.65
Controllability	68.73	9.49	45.23	11.53
All Situations				
Locus of Control	110.39	23.29	98.39	17.46
Stability	83.73	18.43	64.65	26.69
Controllability	131.81	16.89	98.88	23.34

To summarize the results of this analysis, good achievement and affiliation situations were seen as more internally caused, more stable and more controllable than were bad situations. There is, however, very little difference between good and bad achievement situations in terms of perceived locus of causality, or between good and bad affiliation situations in terms of perceived stability.

These results accord with those of Peterson et al (1982) who found that good events were perceived more internally, stably and globally than were bad events. As a result of the pattern of correlations obtained by these researchers, they concluded that there was "no evidence for the discriminability of achievement from affiliative goal areas" (1982, p. 294). However, the different pattern of correlations between CDS variables and perceived reinforcement history obtained in this study casts some doubt on this conclusion.

## 5.4 General Discussion

This study proved to be a fruitful one, both in its own right and in terms of providing a research direction. It was found that different praising locutions did indeed have different effects on behaviour, although it was not clearly determined that attributional praise and the expression of an expectation affect behaviour differently. However, although they were not distinguished in terms of the dependent variable, subjects obviously did not perceive the two locutionary forms in an identical manner. That is, when proportions of subjects in each group who chose not to complete the rating scales were compared, there were differences among the groups. It is clear that subjects in the attributional praise group did not interpret

the experimenter's judgment about their persistence as an expectation for their future behaviour, although they were well aware of that judgment.

Another finding which supports the hypothesis that a different psychological process is operative for the two forms of praise is that attribution of a personal characteristic appeared to be a more salient form of praise than was the expression of an expectation about future behaviour. When asked what the experimenter's expectations were, the expectation group was not significantly different from the other groups, but when asked whether the experimenter judged them to be persistent, the attribution group was significantly different from all other groups. It thus seemed important to compare attribution and expectation further in an attempt to discriminate between them more clearly, both behaviourally and in terms of cognitive processes which they might evoke.

In view of the contradictory results reported in the literature with regard to the effects of "social reinforcement", it was interesting to find no difference overall between this condition and the control condition. After one delivery of the manipulation the control group lagged behind all other groups, but spent as much time on the task as did the social reinforcement group after two manipulations. It seems, from this study at least, that if the perceiver is friendly and communicative, the target's behaviour is affected in the same manner as if that perceiver makes encouraging or evaluative remarks. It is certainly clear that social reinforcement with no definite informational content is not effective in controlling behaviour in the way that other forms of praise are.

A result which requires consideration is the effect of delivering the manipulation twice. One delivery was apparently insufficient to distinguish among the groups in terms of performance, but two clearly showed up a difference. An alternative interpretation of course is that there was a task X manipulation interaction such that an effect occurred with one type of task (Matrix task) but not with the other (Consequences task). However, in support of an interpretation in terms of the number of deliveries of the manipulation, Kinch (1968) notes that there is some evidence that repetition of an evaluation enhances changes in self-evaluation. It also seems intuitively unlikely that any form of praise manipulation would be so powerful that only one delivery would substantially affect behaviour. It would be interesting to investigate the question of whether further repetitions would clarify differences among the groups. Unfortunately, there is some difficulty in setting up a credible experimental situation in which such an evaluation can be repeatedly delivered.

The fact that more time was spent on the tasks according to locution delivered, but that no difference in productivity was evident, is somewhat surprising. It would be interesting to investigate the cognitive processes and/or "self-talk" which might underlie this effect.

The attempt to determine whether there was any interaction of the effect of attributional praise with reinforcement history or attributional style was on the whole

disappointing. However, there were sufficient significant correlations with the experimental variables to indicate that this is not a fruitless research area. There were also some interesting correlations between the questionnaire variables, most notably the findings with regard to supposedly neutral reinforcement experiences.

## CHAPTER 6

### EXPERIMENT 2

#### 6.1 Introduction

In order to clarify some of the results obtained in Experiment 1, and to further examine aspects of the thesis being investigated, Experiment 2 was planned. This experiment was in fact planned and conducted in conjunction with Experiment 3. Because of the different aims of Experiment 3 that study is discussed subsequently in Chapter 9 Part 1, but tasks and materials for the two experiments were identical. Basically the aim of Experiment 3 was to determine whether subjects with a prior self-schema in the praised domain responded differently to an attributional manipulation when compared with subjects without such a self-schema, and that question is examined in Chapter 9 Parts 1 and 2.

However, to return to the topic of this chapter, the main aims of Experiment 2 were twofold. It was an investigation to determine whether an attribution manipulation and an expectation manipulation could be distinguished in terms of their effects on subjects' behaviour; it was also an attempt at elucidating two mediation hypotheses proposed to account for any effect on behaviour of such manipulations.

Either of two major hypotheses could account for behaviour change in response specifically to the attribution of a characteristic. The first of these is a consistency hypothesis: individuals behave consistently with a self-concept which now "contains" the attributed characteristic (e.g., Grusec, Saas-Kortsak and Simutis, 1978), or, in a more refined variation of this notion, activation of a construct causes an attitude-to-behaviour process to occur in a manner similar to that outlined by Fazio (e.g., 1986). That is, having received praise of a kind which indicates that the individual has a certain disposition (attributional praise), s/he is more likely to filter subsequent stimuli in relation to this information and may then come to regard her/himself as the origin of acts of that kind, and therefore to act consistently with the praise or label. This is more likely to occur in the circumstance that the characteristic is a personally important one.

The alternative hypothesis for behaviour change in response to attributional praise is a self-presentational one: the individual seeks to behave so as to please the audience and to construct a public self (e.g., Baumeister, 1982). And, in relation to an expectation about future behaviour as a form of praise, a self-presentational hypothesis is the more straightforward explanation of the mediating mechanism. However, were the subject to interpret an expectation as implying something about her/his characteristics or abilities, conceivably a consistency hypothesis might also be applicable.

It was hoped that this experiment would elucidate the extent to which praise apparently affects, or interacts with, some more lasting self-schematic structures, and the extent to which it has a relatively short-term effect, only affecting specific behaviour in the presence of the praiser. That is, one aim was to determine whether any observed effect of



attributional praise was primarily a consistency phenomenon or a self-presentational phenomenon, or whether the two hypothesized mediating mechanisms might interact. It may be that different locutions evoke different mediating mechanisms. For example, while the effect of an attributional praise manipulation might be mediated by self-schema restructuring, perhaps an expectation manipulation might lead only to a temporary self-presentational outcome.

A 6-group experiment was therefore designed to explore these two positions further, while at the same time comparing an attribution and an expectation manipulation in terms of behavioural outcome. The independent variable relevant to the two mediation hypotheses was "experimenter presence or absence" during a specific task. For half of each group the experimenter was present in the experimental room while the subject played three of four computer games, while for the remaining subjects she was absent during the playing of the third and fourth games. Subjects also completed a short Computer Attitude Questionnaire and some games' rating scales (ideas for items included were taken from the Pinball Game Questionnaire, courtesy of Judith Harackiewicz - see Harackiewicz, Manderlink and Sansone, 1984). The characteristic attributed was "persistence", operationally defined as the length of time spent on the third of four computer games (after the manipulation had been delivered twice).

The basic question to be answered by the experiment was whether the variable "experimenter presence" had a differential effect on behaviour when combined with an attribution manipulation or an expectation manipulation. Thus, the main aim was to determine whether the effect of either on behaviour was more pronounced given the experimenter's presence in the room after delivery of the manipulation.

If the established effect of greater persistence in response to both an attribution and an expectation manipulation, as compared to a social reinforcement manipulation, is a self-presentational phenomenon, one would expect that the "experimenter present" groups would be more persistent than the "experimenter absent" groups.

But if there is some kind of intra-psychic or consistency phenomenon occurring, one might expect that an "Attribution, experimenter absent" group would be as persistent as an "Attribution, experimenter present" group (the experimenter's presence is not necessary for the attribution to have an effect). Such an effect would be in line with the hypothesis that the subject was maintaining consistency between her/his self-concept and behaviour. On the other hand, there is no equivalent intra-psychic possibility for any expectation effect, in that if the experimenter leaves the room her expectation becomes unimportant. Thus it might be anticipated that an "Expectation, experimenter present" group would spend more time than an "Expectation, experimenter absent" group since the experimenter is there during the task.

A reasonable prediction would be both attribution and expectation main effects, with an interaction between the praise factor and the experimenter factor. In view of competing

theories such an interaction would be interesting. That is, an interaction would tend to support a self-presentational mediation hypothesis, while no interaction would be in line with a consistency hypothesis.

Although the games' ratings scales were used partly to give a reason for having the subject play the games, some tentative predictions might be made about likely ratings. For example, on the basis of Deci's (e.g., 1975) ideas about internally controlled behaviour leading to feelings of competence and intrinsic motivation one might expect the attribution groups to say they enjoyed the games more, that they tried hard and so on. On the basis of work comparing the effects of informational and controlling messages (e.g., Ryan, Mims and Koestner, 1983) one might anticipate that the expectation groups would enjoy the games less and feel more tense. On the basis of self-perception theory (Bem, 1972) one might expect that the longer the subject spent on a game the more s/he would perceive it as enjoyable and interesting.

### 6.1.1 Description of Experiment

6.1.1.1 Design: Subjects were assigned randomly to one of six groups -

1. Attribution + experimenter present
2. Attribution + experimenter absent
3. Expectation + experimenter present
4. Expectation + experimenter absent
5. Control, no treatment + experimenter present
6. Control, no treatment + experimenter absent

"Experimenter present" was defined as the experimenter being present in the experimental room during the playing of the first three games. "Experimenter absent" was defined as the experimenter being present during the playing of the first two games. That is, in the "present" condition the experimenter was there during the playing of "Word Search", while in the "absent" condition she was absent. Thus conditions were as near as possible equivalent in that the subject always had the experience of the experimenter leaving before the games were complete and had to finish off playing and rating on her/his own.

6.1.1.2 Tasks: A BBC computer was programmed in such a way that four games were chained together. The games were ostensibly to be played so that the subject could rate them to help the experimenter select the most appropriate one(s) for a later study. The games were (in order of playing):

1. Alien Blaster - the player has to prevent aliens from landing and taking over the planet.
2. Maze - the player must find a route through the maze and out.
3. Word Search - a cloze task in which the player must complete a story ("Mouse" - see Appendix 2.3).
4. Zombies - the player must evade zombies who are out at midnight, otherwise become zombified.

The computer recorded time spent on each of the games. Subjects were not aware that they were being timed.

**6.1.1.3 Dependent Measures:** The main dependent measures were time spent on each of the second, third, and fourth computer games which were played after the manipulations, time on "Word Search" (third game) being of greatest interest, since in Experiment 1 it was found that two manipulations were necessary to distinguish among groups in performance.

However, time spent on "Maze" (second game) was also of interest in determining whether that effect was repeated, and time on "Alien Blaster" (first game) can be conceived as a "baseline" measure of "persistence". For these reasons, time measures were taken for all six groups on the first and second tasks, too, despite the fact that only the praise factor (three groups) was operative during their playing.

Time spent on "Zombies" (fourth game) might indicate to what extent there was any carry-over effect from the manipulations.

Other measures to be examined included a "Computer Attitude Questionnaire" which was considered useful for misdirection if the subject wondered about the "real" purpose of the games-playing, and the actual ratings of each of the games. The Computer Attitude Questionnaire is shown in Appendix 2.1 and the Games' Ratings scales in Appendix 2.4.

## **6.2 Method**

**6.2.1 Subjects:** Sixty Psychology I undergraduates, enrolled in 1985, who had not completed a Self-Concept Questionnaire in testing sessions at the beginning of the year (see report of Experiment 3 in Chapter 9), and who responded to a request to participate, contributed data to the analyses reported here. Their mean age was 21.79 years (s.d.=7.08).

**6.2.2 Procedure:** The experimenter wrote to potential subjects explaining that she would be doing an experiment later in the year for which she needed to select suitable computer games. For this reason she required the ratings of a large number of people from the same population as that from which subjects would come. Therefore, what the experimenter was asking the subject to do was to come along to the laboratory for about an hour and play a variety of computer games in order to rate them on a range of dimensions, for example, their level of interest and degree of difficulty. In addition, it was stated that the subject should not worry if s/he was not at all familiar with computers or computer games, since the experimenter would explain in detail at the time, and in any case she wanted the ratings of many people of varying experience. It was suggested to the subject that this might be an enjoyable learning experience.

When subjects arrived at the experimental room, the experimenter introduced herself in a friendly manner, addressing them by name and always making some sociable remark. Initially the subject was seated beside the computer and instructed not to look at it just yet,

while s/he completed a short questionnaire which would tell the experimenter about her/his experiences with computers and attitude to them.

Once this was done, subjects were shown the General Instructions (see Appendix 2.2) which described the games. In addition, depending upon the subject's prior experience with computer keyboards, the experimenter did or did not indicate the relevant keys to the subject. The subject was told that s/he would play four different games, and that s/he would rate each one immediately it was finished, pressing the "break" key "so that the computer (could) get the next game ready". The instruction was given to "play each game long enough that you feel you can then rate it, or as long as you like if you're enjoying it". The experimenter also reassured subjects that she would "be here, at least at first, to make sure that everything (goes) all right". This was added so that the subject would not be surprised when the experimenter made her excuses and left the subject to finish on her/his own.

When it was clear that the subject could continue on to the first game unassisted, the experimenter went and sat at her table which was situated about three feet away from the experimental tables. She was in such a position that she could easily see both the subject and the computer's screen. Although she was obviously working, it would have been clear to the subject that s/he was being overseen, since the experimenter did make occasional remarks (including the manipulations) relating to the state-of-play.

#### 6.2.3.1 Wording of Manipulations - Phase 1 (after "Alien Blaster")

Group 1 (Attribution, experimenter present): "Did you enjoy that game? I think that one requires some persistence, don't you, to work out the best way to play? I thought you seemed to be very persistent at it. You must be a persistent sort of a person."

Group 2 (Attribution, experimenter absent): As in 1.

Group 3 (Expectation, experimenter present): "Did you enjoy that game? I think that one really requires you to practise on the keys to work out the best way to play, don't you? Given how you got on, I'm sure you'll enjoy and do well at the other games."

Group 4 (Expectation, experimenter absent): As in 3.

Group 5 (Control, experimenter present): "Did you enjoy that game? I think that one really requires you to practise on the keys to work out the best way to play, don't you? All the games are different - I had to type in a range of games to find the ones I wanted."

Group 6 (Control, experimenter absent): As in 5.

#### 6.2.3.2 Wording of Manipulations - Phase 2 (after "Maze")

Group 1: "I find that one really frustrating sometimes, especially if you get stuck in the middle. But you seemed to be very persistent at it. You really must be a persistent person."

Group 2: As in 1.

Group 3: "I find that one really frustrating sometimes, especially if you get stuck in the middle. I guess you worked out some strategy. I'm sure you'll enjoy and do well at the other games."

Group 4: As in 3.

Group 5: "I find that one really frustrating sometimes, especially if you get stuck in the middle. But it's an unusual game to play. That's why I included it amongst the games to be rated."

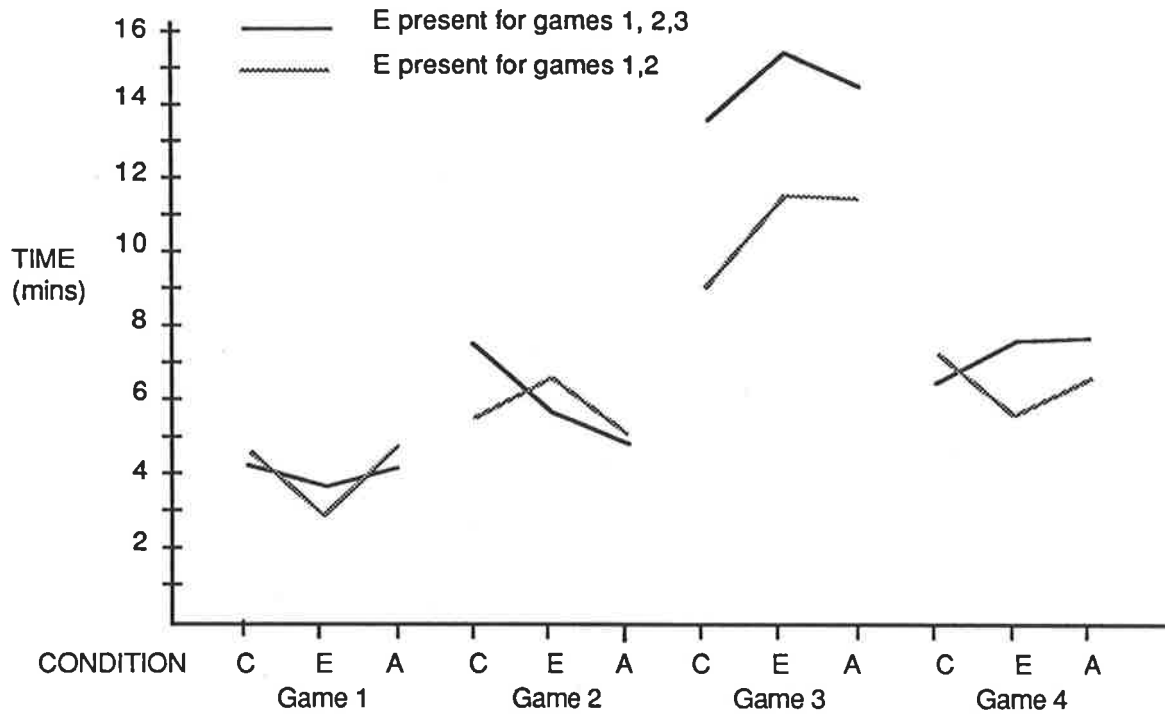
Group 6: As in 5.

6.2.4.1 Experimenter Absent Groups - Phase 3 Procedure: After the delivery of the manipulation the experimenter gathered together her papers and said to the subject "Since you seem to be getting on fine, I think I'll leave you to play the other games on your own, if you don't mind. I've got plenty of work to do upstairs. Thank you very much for your time. I appreciate it. And I'll write to you later to tell you what I found out." (There was, in addition, a notice taped to the inside of the door indicating where the experimenter could be found if need be. Two subjects sought her out because they had pressed the incorrect keys - their data were therefore excluded, although at the time the experimenter simply set the games up again for the subject).

6.2.4.2 Experimenter Present Groups - Phase 3 Procedure: After the playing of "Word Search" the experimenter went through the same procedure as above for the "experimenter absent" groups. During the playing of the game, she was as friendly in manner as previously, without volunteering any comments, but simply responding briefly if the subject spoke to her.

### **6.3 Results and Discussion**

Ten subjects were assigned to each of the six groups, by a random process. Unless otherwise stated, in all the analyses described below, group N=10. In this section games are discussed in a logical rather than a sequential order. That is, results are presented in the order Game 3, Game 2, Game 4, Game 1, since on theoretical grounds there is a decreasing likelihood that effects will be found through that sequence. Figure 6.1 summarizes the results for all times for all games in graphical form. It should be noted that although the experimenter was present in the experimental room for all groups during the playing of the first two games, in the analyses relating to time spent on these games the six groups have been retained. This was done so that the status of groups prior to the manipulations could be examined, that is, to ascertain that the randomization procedure had been satisfactory. Figure 6.1 shows clearly the value of adopting this procedure, considering that it is only on Game 3 that a very clear difference among groups would be anticipated.



**Figure 6.1:** Times spent by all groups on Games 1 to 4 (Key: A=Attribution, E=Expectation, C=Control).

### 6.3.1 Main Comparison: Comparison of Groups on Time Spent Playing Game 3 (Word Search)

A 3 X 2 analysis of variance was carried out to determine whether there were any significant differences among groups. The factors are "Condition", of which there are three levels, and "Experimenter Presence or Absence", two levels. The means and standard deviations of the groups are set out in Table 6.1.

**Table 6.1:** Means and standard deviations, by group, of time spent playing Game 3 (Word Search).

Group	Mean	s.d.
1. Attribution E present	14.46	5.49
2. Attribution E absent	11.68	6.18
3. Expectation E present	15.36	6.18
4. Expectation E absent	11.74	5.05
5. Control E present	13.73	4.99
6. Control E absent	8.79	3.12

As Table 6.2 shows there was an experimenter effect, but no condition effect and no interaction. That is, in all conditions subjects played Game 3 for a longer time when the experimenter was present in the room. The standard deviations for Groups 1 to 4 do suggest that there was greater variability in times than in Groups 5 and 6, the control groups,

although this was not a significant effect. The differences in the group means and the Experimenter effect can be seen very clearly in Figure 6.1 above.

**Table 6.2:** Results of analysis of variance comparing groups on time spent playing Game 3 (Word Search).

Source of variation	SS	df	MS	F	p
Within cells	1417.82	54	26.26		
Constant	9570.26	1	9570.26	364.49	0.010
Condition	58.13	2	29.06	1.11	0.338
Experimenter	214.23	1	214.23	8.16	0.006
Condition by Experimenter	11.85	2	5.92	0.23	0.799

### 6.3.2 Comparison of Groups on Time Spent on Game 2 (Maze)

There was no significant difference among groups on time spent on the second game, thus replicating previous findings that one manipulation is insufficient to distinguish among groups in terms of their subsequent behaviour (in this study of course the additive effect of the second manipulation did not show a difference either). The times are set out in Table 6.3.

**Table 6.3:** Means and standard deviations, by group, of time spent playing Game 2 (Maze).

Group	Mean	s.d.
1. Attribution E present	4.76	1.80
2. Attribution E absent	4.91	2.69
3. Expectation E present	5.97	3.39
4. Expectation E absent	6.50	4.32
5. Control E present	7.79	4.59
6. Control E absent	5.69	2.74

It could be argued on the basis of the lower means in Groups 1 and 2 (bearing in mind that differences are not significant of course - Condition  $F=1.69$ ,  $p=.194$ ) that should the experiment be repeated using a larger number of subjects, evidence of reactance against the experimental manipulation might be found.

### 6.3.3 Comparison of Groups on Time Spent on Game 4 (Zombies)

There were no significant differences among groups in time spent on Zombies; Table 6.4 shows the group means.

**Table 6.4:** Means and standard deviations, by group, of time spent playing Game 4 (Zombies).

Group	Mean	s.d.
1. Attribution E present	7.85	5.36
2. Attribution E absent	6.68	5.11
3. Expectation E present	7.82	2.87
4. Expectation E absent	5.81	3.69
5. Control E present	6.32	4.61
6. Control E absent	7.39	3.81

There was somewhat more variability in Groups 1 and 2 compared to all the other groups, but this was not a significant effect.

#### 6.3.4 Comparison of Groups on Time Spent on Game 1 (Alien Blaster)

There was no significant difference among groups on time spent on the first game. Thus groups can be regarded as equivalent on entering the experimental room (see Table 6.5 for means and standard deviations).

**Table 6.5:** Means and standard deviations, by group, of time spent on Game 1 (Alien Blaster).

Group	Mean	s.d.
1. Attribution E present	4.22	1.62
2. Attribution E absent	4.91	2.71
3. Expectation E present	3.83	1.01
4. Expectation E absent	2.82	1.41
5. Control E present	4.24	3.72
6. Control E absent	4.43	2.69

#### 6.3.5 Comparison of Groups on Time Spent on Game 3 with Time Spent on Game 1 as a Covariate

The effect on the analysis of variance comparing groups on Time 3 while holding Time 1 constant was to increase Experiment F to 8.62 ( $p=.005$ ) (refer to Table 6.2).

#### 6.3.6 Comparison of Groups on Time Spent on Game 3 with Time 2 as a Covariate

The effect on the analysis of variance comparing groups on Time 3 while holding Time 2 constant was to decrease Experiment F to 7.7 ( $p=.008$ ) (refer to Table 6.2).



### 6.3.7 Overall Comparison of the Games

A two-way analysis of variance with repeated measures showed that the games were rated significantly differently and that the means of each of the rating scales were significantly different. There was also an interaction between games and the use of the rating scales, which indicates that subjects were engaged in a meaningful way in the task of discriminating among games, as requested. These results are displayed in Tables 6.6 to 6.8.

**Table 6.6:** Results of repeated measures analysis of variance - games effect.

Source of variation	SS	df	MS	F	p
Within cells	865.55	171	5.06		
Games	46.44	3	15.48	3.06	0.03

**Table 6.7:** Results of repeated measures analysis of variance - rating scales effect.

Source of variation	SS	df	MS	F	p
Within cells	3026.63	855	3.539		
Scales	1097.29	15	73.153	20.67	0.01

**Table 6.8:** Results of repeated measures analysis of variance - interaction between games and rating scales.

Source of variation	SS	df	MS	F	p
Within cells	4867.79	2565	1.89		
Games by Scales	675.47	45	15.01	7.91	0.01

### 6.3.8 Comparison of Groups on Ratings of Game 3

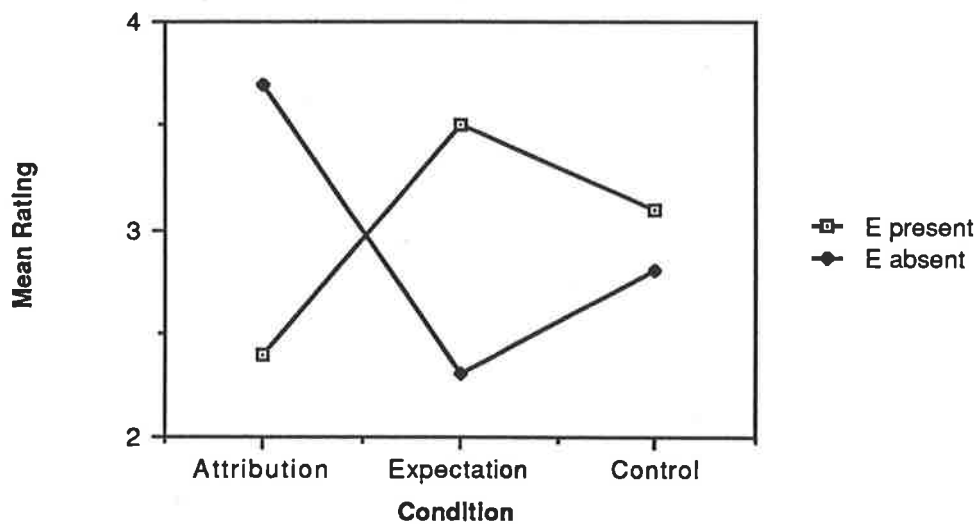
A series of analyses of variance was performed to determine whether there were significant differences among the six groups in the way they rated Word Search. Only significant results are reported. Generally results are presented in tabular form. However, where effects may be difficult to visualize, as in the case of interactions, figures only are presented.

#### 6.3.8.1 "I felt tense while playing this game"

As Table 6.9 shows there was an interaction between Condition and Experimenter in the ratings of "I felt tense while playing this game". As Figure 6.2 shows this interaction was such that the Attribution group, experimenter absent (Group 2) agreed more with the statement than did either the Expectation or Control groups, experimenter absent (Groups 4 and 6).

**Table 6.9:** Results of analysis of variance comparing groups on ratings of Game 3 (Word Search) "I felt tense while playing this game".

Source of variation	SS	df	MS	F	p
Within cells	139.60	54	2.59		
Constant	528.07	1	528.07	204.26	0.010
Condition	0.23	2	0.12	0.05	0.950
Experimenter	0.07	1	0.06	0.03	0.870
Condition by Experimenter	16.03	2	8.02	3.10	0.053



**Figure 6.2:** Graph of means, by group, of ratings of Game 3 (Word Search) "I felt tense while playing this game".

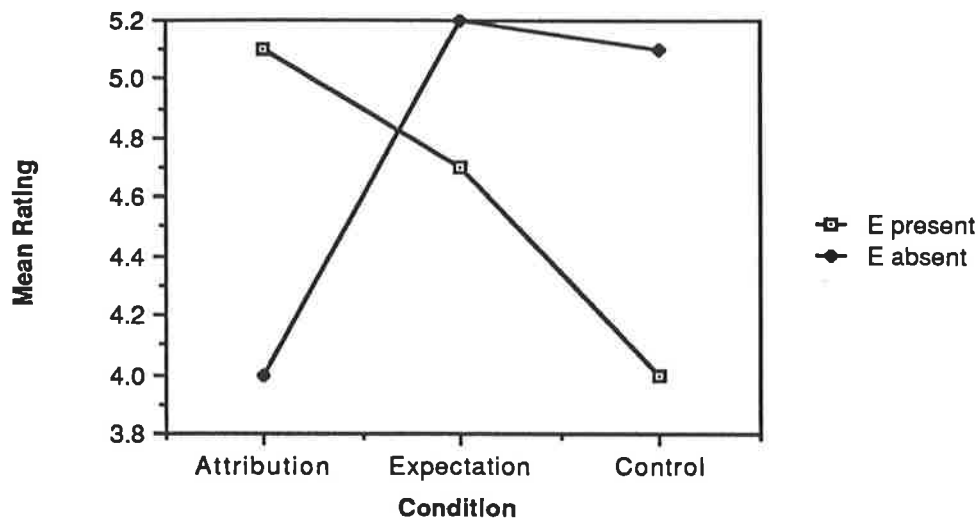
### 6.3.8.2 "Other students would try hard while playing this game"

There was a significant interaction between Condition and Experimenter on the mean ratings of the statement "Other students would try hard while playing this game". Results of the analysis of variance can be seen in Table 6.10.

**Table 6.10:** Results of analysis of variance comparing groups on ratings of Game 3 (Word Search) "Other students would try hard while playing this game".

Source of variation	SS	df	MS	F	p
Within cells	85.50	54	1.58		
Constant	1316.02	1	1316.02	831.17	0.01
Condition	2.13	2	1.07	0.67	0.51
Experimenter	0.42	1	0.42	0.26	0.61
Condition by Experimenter	12.93	2	6.47	4.08	0.02

The means for the groups are depicted in Figure 6.3.



**Figure 6.3:** Graph of means, by group, of ratings of Game 3 (Word Search) "Other students would try hard while playing this game".

This result is interesting, since again the pattern of means for the Attribution groups was opposite to that for the Expectation and Control groups, but this time the means were higher in the latter two groups and lower in the former (cf. 6.3.8.1 above where the opposite was true). These emerging results are particularly significant, since they are the first indication of something being different about the attribution manipulation compared to the expectation manipulation.

#### 6.3.8.3 "It would take most students a little while to work out the best way of playing this game"

There was a significant Experimenter effect, with subjects agreeing more with the statement "It would take most students a little while to work out the best way of playing this game" when the experimenter was absent than when she was present (see Tables 6.11 and 6.12). Perhaps this is a self-presentational phenomenon, with subjects trying to please the experimenter, and thinking it desirable that she not think her games would be too difficult - of course, this is not a completely satisfactory explanation since presumably subjects knew at some level that the experimenter would examine all the ratings eventually.

**Table 6.11:** Results of analysis of variance comparing groups on ratings of Game 3 (Word Search) "It would take most students a little while to work out the best way of playing this game".

Source of variation	SS	df	MS	F	p
Within cells	213.10	54	3.95		
Constant	889.35	1	889.35	225.40	0.010
Condition	2.10	2	1.05	0.27	0.770
Experimenter	18.15	1	18.15	4.59	0.037
Condition by Experimenter	4.30	2	2.15	0.55	0.580

**Table 6.12:** Means and standard deviations, by group, of ratings of Game 3 (Word Search) "It would take most students a little while to work out the best way of playing this game".

Group	Mean	s.d.
1. Attribution E present	3.20	2.39
2. Attribution E absent	4.90	1.19
3. Expectation E present	3.40	2.07
4. Expectation E absent	3.80	1.93
5. Control E present	3.30	2.21
6. Control E absent	4.50	1.90

**6.3.8.4 "It took me a little while to work out the best way of playing this game"**

As Table 6.13 shows, there was an Experimenter effect in relation to "It took me a little while to work out the best way of playing this game". The means and standard deviations of each group are shown in Table 6.14. The effect again seemed to have self-presentational connotations, but this time perhaps subjects were trying to present a good image of themselves to the experimenter.

**Table 6.13:** Results of analysis of variance comparing groups on their ratings of Game 3 (Word Search) "It took me a little while to work out the best way of playing this game".

Source of variation	SS	df	MS	F	p
Within cells	173.50	54	3.21		
Constant	952.02	1	952.02	296.03	0.01
Condition	6.93	2	3.47	1.07	0.35
Experimenter	22.82	1	22.82	7.10	0.01
Condition by Experimenter	5.73	2	2.87	0.89	0.42

**Table 6.14:** Means and standard deviations, by group, of ratings of Game 3 (Word Search) "It took me a little while to work out the best way of playing this game".

Group	Mean	s.d.
1. Attribution E present	3.50	1.96
2. Attribution E absent	4.20	1.39
3. Expectation E present	3.20	1.48
4. Expectation E absent	4.10	1.79
5. Control E present	3.40	2.27
6. Control E absent	5.50	1.72

### 6.3.9 Comparison of Groups on Ratings of Game 2

Oneway analyses of variance were performed in order to determine whether the manipulations related to differences in rating the games. Since at the stage of the playing of Game 2 the experimenter was in the room for all groups, Condition was the only relevant factor. In relation to these variables, it was not considered as important as it had been for the times to determine that randomization into the six groups had been achieved. Therefore the more powerful analysis was used. Both significant results and those approaching significance are reported since with larger numbers of subjects trends might well be confirmed as significant.

#### 6.3.9.1 "I felt tense while playing this game"

Tables 6.15 and 6.16 show that the Attribution groups rated themselves as feeling more tense while playing than did the Expectation groups.

**Table 6.15:** Results of analysis of variance comparing groups on their ratings of Game 2 (Maze) "I felt tense while playing this game".

Source of variation	df	SS	MS	F	p
Between groups	2	13.90	6.95	3.40	0.04
Within groups	57	116.50	2.04		
Total	59	130.40			

**Table 6.16:** Means and standard deviations, by group, of ratings of Game 2 (Maze) "I felt tense while playing this game".

Group	N	Mean	s.d.
1. Attribution	20	3.05	1.61
2. Expectation	20	1.90	0.85
3. Control	20	2.25	1.68

A Student-Newman-Keuls post-hoc test indicated that Groups 1 and 2 were significantly different from one another ( $p < .05$ ). Again this result suggests that the attribution manipulation was having a different effect from the expectation manipulation.

#### 6.3.9.2 "I enjoyed playing this game"

At the same time as feeling more tense, the Attribution groups also enjoyed Maze less than did the Control groups. The results of the analysis of variance are shown in Table 6.17, while Table 6.18 shows means and standard deviations.

**Table 6.17:** Results of analysis of variance comparing groups on their ratings of Game 2 (Maze) "I enjoyed playing this game".

Source of variation	df	SS	MS	F	p
Between groups	2	10.53	5.27	3.09	0.053
Within groups	57	97.20	1.71		
Total	59	107.73			

**Table 6.18:** Means and standard deviations, by group, of ratings of Game 2 (Maze) "I enjoyed playing this game".

Group	N	Mean	s.d.
1. Attribution	20	4.70	1.34
2. Expectation	20	5.40	1.27
3. Control	20	5.70	1.30

Post-hoc comparisons showed that Groups 1 and 3 were significantly different (Student-Newman-Keuls,  $p < .05$ ). Thus an attribution manipulation resulted in less of a feeling of enjoyment when compared to a control condition. The picture becomes even more interesting in view of the results for Game 4 (Zombies - see 6.3.10 below), and indeed for Game 1 (Alien Blaster - see 6.3.11 below).

#### 6.3.10 Comparison of Groups on Ratings of Game 4

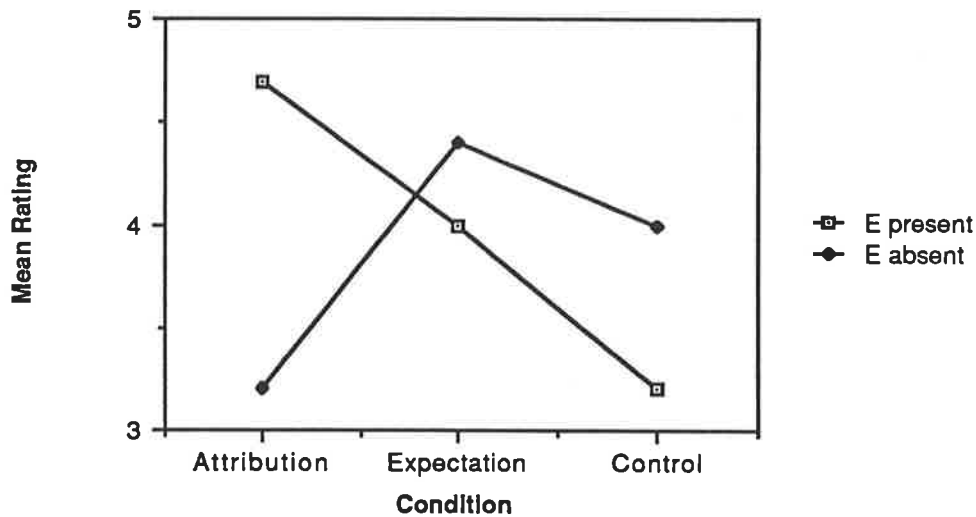
Analyses of variance were carried out to determine whether there were any differences among groups in their ratings of Zombies. At the stage that subjects were playing this final game all groups were equivalent to the extent that the experimenter had left the room. Thus any differences among groups must be as a result of some carry-over from the manipulation.

##### 6.3.10.1 "I thought I would do well while playing this game"

There was a significant interaction such that in the Attribution, experimenter present group the mean was higher, while in the other two conditions the experimenter absent means were higher. Table 6.19 shows the results of the analysis of variance and Figure 6.4 depicts the interaction.

**Table 6.19:** Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I thought I would do well while playing this game".

Source of variation	SS	df	MS	F	p
Within cells	111.66	53	2.11		
Constant	912.27	1	912.30	433.03	0.01
Condition	3.16	2	1.58	0.75	0.48
Experimenter	0.22	1	0.22	0.11	0.75
Condition by Experimenter	14.69	2	7.34	3.49	0.038



**Figure 6.4:** Graph of means, by group, of ratings of Game 4 (Zombies) "I thought I would do well while playing this game".

#### 6.3.10.2 "I felt tense while playing this game"

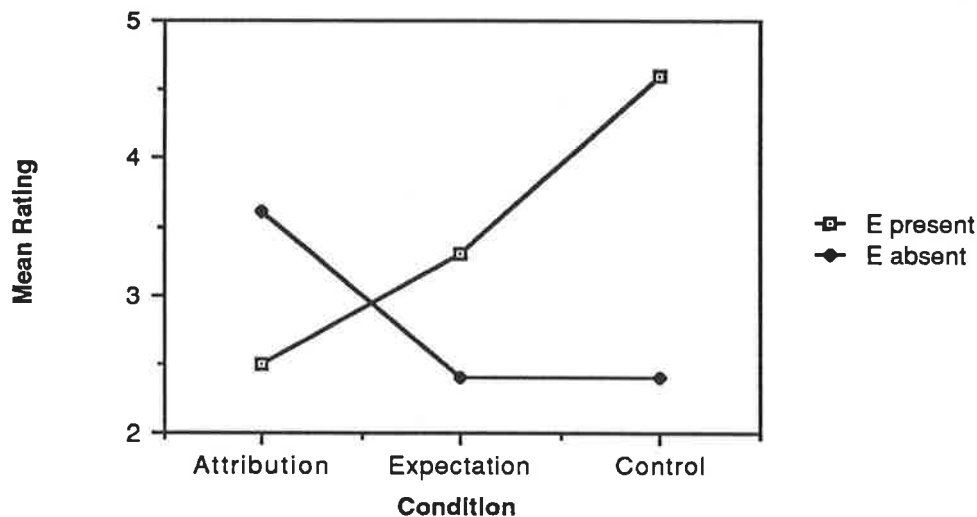
Table 6.20 shows that in relation to "I felt tense while playing this game" there was a similar interaction as there was for the same rating of Word Search.

**Table 6.20:** Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I felt tense while playing this game".

Source of variation	SS	df	MS	F	p
Within cells	128.02	53	2.42		
Constant	567.61	1	567.61	234.98	0.010
Condition	3.26	2	1.63	0.67	0.510
Experimenter	5.76	1	5.76	2.38	0.130
Condition by Experimenter	26.35	2	13.18	5.45	0.007

Figure 6.5 shows the means graphically. Group 1, Attribution experimenter present, is obviously different from Groups 3, Expectation experimenter present, and 5, Control experimenter present, thus showing a contrast between the attribution and expectation

manipulations again. The means indicate that the subjects in the Attribution group, experimenter present felt less tense (as they did on Word Search) relative to the experimenter absent group, whereas the means are the opposite way around for the other two groups. This may also be contrasted with the ratings for Maze which suggested that both Attribution groups felt more tense than did the other two groups.



**Figure 6.5:** Graph of means, by group, of ratings of Game 4 (Zombies) "I felt tense while playing this game".

If this were some kind of self-presentational effect (for example, it may not be socially desirable to indicate feelings of tension), one might expect all experimenter present groups to exhibit the same effect. Perhaps, then, it is a reflection of some sort of reactance, or defensiveness. That is, while after Maze the rating was made without any contamination, once the manipulation had occurred again, subjects were beginning to feel somewhat negative, and this carried over into the last game although the experimenter was no longer present.

#### 6.3.10.3 "I would like to play this game for recreation"

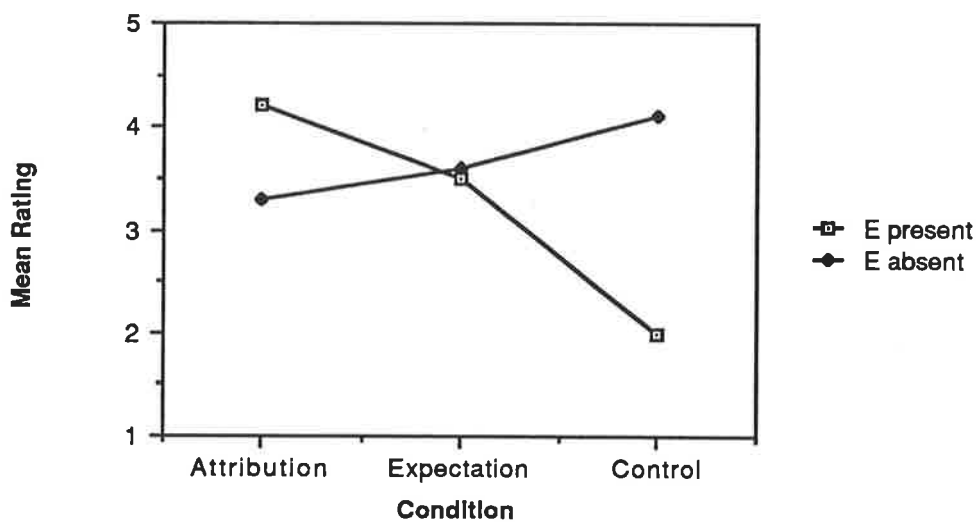
When considering the statement "I would like to play this game for recreation" the Attribution groups produced ratings which were the opposite way around compared to those for the Control groups. Thus as Table 6.21 shows there was an interaction between Condition and Experimenter.



**Table 6.21:** Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I would like to play this game for recreation".

Source of variation	SS	df	MS	F	p
Within cells	193.50	53	3.65		
Constant	712.29	1	712.29	195.09	0.010
Condition	4.22	2	2.11	0.58	0.560
Experimenter	2.40	1	2.40	0.66	0.420
Condition by Experimenter	22.59	2	11.29	3.09	0.054

Figure 6.6 shows the graph of the interaction.



**Figure 6.6:** Graph of means, by group, of ratings of Game 4 (Zombies) "I would like to play this game for recreation".

When combined with the results described in 6.3.10.4 below, this could be taken as some support for the idea that an attributional manipulation increases feelings of competency and self-determination even after the rewarding stimulus has been removed (cf. Deci). However, it is difficult to explain why such an effect would not also hold for the Attribution, experimenter absent group. It therefore seems more likely that subjects are expressing some sort of relief against the initial feelings of tension when the rather unexpected manipulation was delivered.

#### 6.3.10.4 "I played this game well"

There is a significant Condition effect with both experimental groups agreeing to a greater extent than did the control group that they had played the game well (see Table 6.22).

**Table 6.22:** Results of analysis of variance comparing groups on their ratings of Game 4 (Zombies) "I played this game well".

Source of variation	SS	df	MS	F	p
Within cells	155.30	53	2.93		
Constant	691.59	1	691.59	236.02	0.010
Condition	20.63	2	10.31	3.52	0.037
Experimenter	0.03	1	0.03	0.01	0.910
Condition by Experimenter	8.45	2	4.22	1.44	0.250

Table 6.23 shows the means.

**Table 6.23:** Means and standard deviations, by group, of ratings of Game 4 (Zombies) "I played this game well".

Group	Mean	s.d.
1. Attribution E present	4.20	1.62
2. Attribution E absent	3.20	1.55
3. Expectation E present	3.60	1.65
4. Expectation E absent	4.30	1.83
5. Control E present	2.30	2.00
6. Control E absent	2.80	1.62

### 6.3.11 Comparison of Groups on Ratings of Game 1

Oneway analyses of variance were carried out to compare the groups on their ratings of the first game. Since the experimenter was actually delivering the manipulation just as subjects were picking up pen and paper to rate this game, the rating measures may have been affected by the experimental condition and are not "pure" in the same sense as are the times.

#### 6.3.11.1 "I wanted to keep playing this game"

Table 6.24 shows the results of the analysis of variance comparing groups on their ratings of Alien Blaster, "I wanted to keep playing this game", and Table 6.25 shows the group means.

**Table 6.24:** Results of analysis of variance comparing groups on their ratings of Game 1 (Alien Blaster) "I wanted to keep playing this game".

Source of variation	df	SS	MS	F	p
Between groups	2	23.43	11.72	4.72	0.02
Within groups	57	141.50	2.48		
Total	59	164.93			

The group means again suggest some kind of self-presentational effect (e.g., "the experimenter thinks I am persistent, I'd better agree with this to go along with her").

**Table 6.25:** Means and standard deviations, by group, of ratings of Game 1 (Alien Blaster) "I wanted to keep playing this game".

Group	N	Mean	s.d.
1. Attribution	20	4.75	1.52
2. Expectation	20	3.40	1.47
3. Control	20	3.45	1.73

Post-hoc comparisons revealed that Group 1 was significantly different from both Groups 2 and 3 (Student-Newman-Keuls,  $p < .05$ ).

#### 6.3.11.2 "I only felt like playing this game for a short time"

The results of the analysis of "I only felt like playing this game for a short time" are explicable in the same way as were those in 6.3.11.1 above. Table 6.26 shows the analysis of variance results, and Table 6.27 shows the group means.

**Table 6.26:** Results of analysis of variance comparing groups on their ratings of Game 1 (Alien Blaster) "I only felt like playing this game for a short time".

Source of variation	df	SS	MS	F	p
Between groups	2	49.63	24.82	10.55	0.0001
Within groups	57	134.10	2.35		
Total	59	183.73			

**Table 6.27:** Means and standard deviations, by group, of ratings of Game 1 (Alien Blaster) "I only felt like playing this game for a short time".

Group	N	Mean	s.d.
1. Attribution	20	2.65	1.31
2. Expectation	20	4.50	1.43
3. Control	20	4.65	1.81

Post-hoc comparisons revealed that the Attribution group was significantly different from both the Expectation and Control groups (Student-Newman-Keuls,  $p < .05$ ). These results tend to suggest that subjects were perceiving the manipulation, however they subsequently chose to respond to it.

#### 6.3.11.3 "Other students would try hard while playing this game"

Of all the differences among ratings, that in relation to "Other students would try hard while playing this game" is the most difficult to interpret. The analysis of variance results are shown in Table 6.28, and the group means in Table 6.29. Post-hoc comparisons revealed that the Attribution group was significantly different from the Control group

(Student-Newman-Keuls,  $p < .05$ ). Perhaps subjects in the Attribution group were using an indirect way of communicating the fact that they themselves had tried hard.

**Table 6.28:** Results of analysis of variance comparing groups on their ratings of Game 1 (Alien Blaster) "Other students would try hard while playing this game".

Source of variation	df	SS	MS	F	p
Between groups	2	9.23	4.62	3.14	0.051
Within groups	57	83.70	1.46		
Total	59	92.90			

**Table 6.29:** Means and standard deviations, by group, of ratings of Game 1 (Alien Blaster) "Other students would try hard while playing this game".

Group	N	Mean	s.d.
1. Attribution	20	5.65	0.82
2. Expectation	20	5.05	1.19
3. Control	20	4.70	1.53

#### **6.4 General Discussion**

The results of this experiment provide some evidence that the two different kinds of praise, attribution of a characteristic and expectation regarding future behaviour, do affect behaviour differently. However, it seems that whether behaviour is affected depends on the situation. That is, the number of manipulations delivered, the position of the game in the sequence, and the presence or absence of the experimenter in the room may all interact, but not in clearly predictable ways. In addition, the behaviour that is affected is primarily the evaluation of tasks in the form of paper-and-pencil ratings.

Although the experimental predictions were not confirmed and it was not possible to distinguish between the two competing mediation hypotheses, the main effect of more time spent in the "experimenter present" conditions strongly suggests that all subjects were to some extent acting on the basis of self-presentational motives. Experimenter effects on some of the task ratings of Game 3 which have been examined in the Results section are also consistent with self-presentational motives. To the extent that such motives were operating, it seems that attribution evoked them to a greater extent than did the other two conditions. Looking at the ratings of Game 1, the Attribution groups agreed significantly more than did the other groups that they wanted to keep playing the game. On the other hand, given that they had just been told that they were "persistent", this effect is also in line with a consistency interpretation.

An aspect of the results that requires comment is the differential task-rating pattern among groups after one and two manipulations. After one manipulation (ratings taken after Game 2, Maze) the Attribution and Control groups rated themselves as feeling more tense

than did the Expectation group, and the Attribution group enjoyed the game less than did the Control group. In the "experimenter present" condition, after two manipulations (ratings taken after Game 3, Word Search) subjects agreed less that "it would take most students a little while to work out the best way of playing" the game, and that "it took me a little while". There were also some interactions such that the pattern of ratings on "I felt tense" was the opposite way around for the Attribution groups when compared to the other two groups. This is some evidence that attribution and expectation have a different effect on behaviour. Similarly, the pattern of ratings in relation to "other students would try hard" was different for the attribution group in comparison to the other two groups.

These odd interactions carried over into the final game such that the pattern of ratings was again the opposite way around on some of the rating variables for the Attribution conditions in comparison to the Expectation and Control conditions. Those on which this pattern occurred were "I thought I would do well...." (the Attribution, experimenter present group agreed more), "I felt tense...." (the Attribution, experimenter present group agreed less), and "I would like to play for recreation" (the Attribution, experimenter present group agreed more). There was also a significant main effect of condition on "I played well", such that the experimenter present groups agreed more.

Looking at the ratings of the first game, there is some evidence that an attribution and an expectation manipulation have different effects in that the Attribution group agreed more that they wanted to keep playing the game, and that other students would try hard while playing (recall that they were picking up the pen to make the rating as the manipulation was delivered).

The question could be raised as to whether these effects could be the result of a perception of the relative salience of informational or controlling intent in the manipulation, although it is difficult to argue that this could be so given the shifting patterns of ratings as the manipulation was repeated. Researchers in the area of intrinsic motivation do not report such an effect, although they conduct 3-phase studies similar to that described here. Ryan, Mims and Koestner (1983), for example, in investigating whether informational versus controlling rewards enhance intrinsic motivation had subjects work on a hidden-figures task under various conditions. Half the groups in a 6-group design received a communication in which information was emphasized (for example, "Do as well as you can on each puzzle. I'll give you feedback on how well you are doing", "You did very well on that one"), and the other half heard a controlling communication (for example, "You should try as hard as possible because I expect you to perform up to standard on these puzzles", "You did very well on that one, just as you should"). Subjects worked on three puzzles with feedback after each one. The primary dependent measure was the amount of free-time spent on the puzzles, but a post-treatment questionnaire was also completed. Subjects in the controlling conditions spent less time in seconds at the task in a choice condition, and reported significantly more pressure and tension than did those in the informational conditions.

Ryan (1982) and Ryan et al (1983) distinguish between a task-contingent (controlling) reward, given simply for doing the task, and a criterion-contingent (informational) reward, given for "the attainment of an ostensible level of skilled performance" (1982, p. 451). Ryan described the former type of outcome like this; "an environmental event that is perceived as controlling is one that is interpreted by the recipient as pressure to attain a particular behavioural outcome; in other words, one that is interpreted as attempting to induce or coerce the recipient into acting in a specific manner" (Ryan, 1982, p. 451). "An environmental event that is perceived as informational (on the other hand) is one that provides people with behaviourally relevant information in the absence of pressure for a particular outcome" (ibid.). He reports that several studies show these types of reward to have opposite effects on intrinsic interest. In Experiment 2, the apparently casual remarks of the experimenter might have been interpreted as either by different subjects, and indeed alternately at different phases of the study. As Ryan argues, it is important to understand what the reward means to the subject.

It could be noted that while the wording of Ryan's controlling conditions is superficially similar to the wording used in the expectation conditions in Experiment 2, there was nevertheless not a great difference between the Expectation groups and the Control groups in that experiment. Overall these groups were more similar to each other than were the Attribution and Expectation groups to each other. In fact, Ryan's communications were not praise within the terms of Kanouse et al (1981), and perhaps the admonition in his conditions that subjects "*should* try as hard as possible" makes a great difference when compared to a straightforward expectation about behaviour. At any rate, the result found in Experiment 2 is further evidence that an attribution manipulation has a different effect on behaviour than does an expectation manipulation.

An alternative way of conceiving of the procedure in Experiment 2 is that it was a study of the effects of "surveillance". It has been found, again by researchers in the area of intrinsic motivation, that "even a relatively unobtrusive presence of the experimenter during the initial task session can lead to decreased task engagement" (Pittman, Davey, Alafat, Wetherill and Kramer, 1980, p. 232). Pittman et al compared three levels of surveillance and two types of cue, informational and controlling, in a study in which subjects were to reproduce geometric configurations from Soma blocks. They reached their conclusion when they found clear main effects, with informational rewards and lower surveillance relating to increased amount of free time spent on the task. However, results reported here in relation to time spent and to task evaluation are not consistent with an interpretation in terms of the effects of surveillance. For this hypothesis to be feasible there would have to be significant main effects rather than the interactions that were actually found.

The effect of the expectation manipulation can be understood when compared to results such as those of Clair and Snyder (1979) who investigated the effects of instructor-delivered evaluative feedback on college students' subsequent performance at a task. They

were specifically interested in the effect of directly communicated performance expectations, and gave feedback of the form "You're doing real well, you'll probably do very good on our other task" (compared to "You're not doing well, you'll probably do poorly on our other task"), and "Well, you did real well on this task, you'll do excellently on the next one since they are very much alike" (compared to "...poorly...."). They found that subjects receiving the positive feedback reported more positive affect and less negative affect than did subjects in the negative condition. On the basis of these findings they concluded that an instructor's assessment and feedback "may have effects upon the student that go beyond simply providing information concerning that student's performance" (*ibid.*, p. 56). There is no doubt that this conclusion can be supported by the results of Experiment 2, but it is clear that such effects are more complex than has been envisaged. It is difficult to explain the similarity in pattern between the Expectation and the Control condition. Given that there is such a similarity the question could be raised of whether the results of an experiment such as that of Clair and Snyder are really only reflecting the positive versus negative tone of the message, rather than the actual expectational information conveyed in it.

No further experiments were specifically designed to clarify the mediation hypotheses investigated in this experiment, but other issues were pursued in subsequent studies. Differences between attribution and expectation were examined in subsequent experiments as were the effects on task ratings of differential praising locutions. These studies are discussed in chapters to follow.

**CHAPTER 7**  
**PART 1**  
**EXPERIMENT 4**

**7.1.1 Introduction**

Prior to the planning of Experiment 4 three experiments had been conducted. The effects on behaviour of three types of praise, the attribution of a characteristic, an expectation about behaviour, and social reinforcement, were compared in Experiment 1. This experiment and its outcomes were discussed in Chapter 5. Experiment 2 was undertaken to compare attribution and expectation in relation to two mediation hypotheses (see Chapter 6). In Experiment 3 the effect of having a prior self-concept in the praised domain was investigated. This experiment is described and discussed in a subsequent chapter, Chapter 9 Part 1.

After assessing the outcomes of these three experiments, it was decided to repeat each of them, at least in part. This was seen as necessary for these reasons:

- (1) As yet no distinction had been made, in terms of effect on the main dependent measure, between an attribution manipulation and an expectation manipulation (but see results of Experiment 2 with respect to games' ratings).
- (2) Although the tasks of the first experiment had obviously been appropriate, the method of timing used was subject to human error.
- (3) The experimental procedure which was then adopted, that using the computer games task, did overcome the timing problem but had an unforeseen problem. The dependent measure, time spent on the games, related to other variables in the situation (interest, for example).
- (4) Inadequate numbers had participated in both Experiments 2 and 3.

After considering these problems it was decided to use a totally different approach. An experimental task was devised which, it was hoped, would be interesting to subjects, which could realistically set the scene for an attribution, and from which a dependent measure could be derived which was independent of such variables as interest. Person perception tasks in which subjects would be asked to make various judgments on the basis of audio- and video-tapes of stimulus people were devised. Subjects would be told that the purpose of the experiment was to determine the effects of varying amounts of information on the ability to make person judgments. After making categorical judgments in two phases of a three-phase study they would then be asked to make some quite specific judgments about the stimulus people. To give plausibility to the tasks varying amounts of information (i.e., video-only, audio-only, and video-plus-audio) would indeed be available, with the manipulation, namely some variety of praise, being delivered after the first two categorical judgment tasks. The experimental task would then be to rate the stimulus people seen on the third tape on a variety of dimensions with the dependent measure being the number rated in



the specified category. In Experiment 4, to be described in this chapter, the categorical judgment made concerned the "artistic talent" of the stimulus people (see "Preliminary Work: Selection of Category" below). A similar type of task was used by Aronson and Carlsmith (1962) who were interested in the effect of feedback consistent and inconsistent with established performance expectancy. They manipulated subjects' expectancies concerning their ability to judge "schizophrenia" from photographs, and subsequently manipulated their performance in a manner which was consistent or inconsistent with the expectancy.

To refer briefly here to a procedural detail which is covered in full in Chapter 9, a questionnaire was to be administered in testing sessions at the beginning of the year with subjects then being selected on the basis of their responses to key items, namely those relating to the ability to make the categorical judgment in question, that of being able to make "first impression" judgments of the artistic talent of other people. The questionnaire was developed after analysis of the first version of a Self-Concept Questionnaire and was called the Self-Concept Questionnaire (Version 2). Shown in Appendix 6.2, it was developed as part of the work relevant to another strand of this thesis, that relating to the interaction between praise and the praisee's prior self-concept. It contained certain items from the first version (the psychometric procedure is discussed in detail in Chapter 10), plus four items relating to Experiment 4 and what was to be Experiment 5 (both general e.g., "I am a perceptive person" and specific e.g., "I can tell straight away if a person is artistically talented"). The category of greatest interest ("artistically talented"), because it is the subject of the attribution in the study, was compared with a control category ("intelligence") about which, according to preliminary work, most people have previously considered their ability to make a judgment. Thus a specific item relevant to the ability to judge intelligence also appeared in the Self-Concept Questionnaire (Version 2).

The Self-Concept Questionnaire (Version 2) was designed in such a way that a comparison could be made between Markus' (e.g., 1977) criteria for selecting respondents who are schematic in certain domains of the self, and the criterion used by this researcher, viz. whether the statement was part of the respondent's prior self-description. The results of the comparisons between these criteria are discussed in greater detail in Chapter 10. However, it should be noted that the term "Self-Construction score" used throughout the current chapter refers to the number of items in the questionnaire which respondents agreed were part of their prior self-description, while "Schematism score" refers to the number on which the extremeness and importance criteria, Markus' (e.g., 1977) criteria, were fulfilled.

It was also considered interesting to investigate the question of whether there were any relationships between response to the experimental task and scoring on Snyder's (1974) Self-Monitoring scale because Snyder and Cantor (1980) suggest that high self-monitors have larger stores of social comparison and other-person information than do low self-monitors who tend to respond "dispositionally" (see also Geizer and Rarick, 1977, who

found that high self-monitors were more accurate than low self-monitors at judging interpersonal deception). It was expected that high self-monitors would show less correspondence between their prior schema and behaviour, and that low self-monitors would have a higher Schematism or Self-Construction score because they are likely to spend more time organizing their self-knowledge. Relationships between Self-Monitoring and Self-Construction were also investigated.

Broadly, then, the aim of Experiment 4, described in this chapter, was to determine whether there was any differential effect on behaviour of different kinds of praise and feedback. In addition, it was hoped to gain some preliminary information about any difference in performance between subjects who were already "schematic" in relation to the ability required for the task and those who were not. That is, those subjects who had previously considered themselves in terms of their ability to make a "first impression" judgment of the artistic talent of another person would be compared with those who had not. This was seen as a suitable precursor to an experiment to determine whether there was any interaction between being schematic in a given domain and attributional praise in that domain. This had been the original aim of the experiment, but despite pilot work an unexpectedly low proportion of individuals who were schematic on the relevant variable were available in the sample - see note at the end of Part 1 of this chapter. The separation of the Control condition into two groups, Groups 6 and 7 (see below), could thus be regarded as a "mini-experiment", one which was carried out in order to make as full a use as possible of the subject resources available. The decision to incorporate these two groups in a redesigned Experiment 4 was made after the problem in the pilot work, which is discussed in that note, emerged.

#### 7.1.1.1 Description of Experiment and Preliminary Work

7.1.1.1.1 Design: The experiment was a three-phase study. Initially the subject saw a "video-only" tape, made rankings of the intelligence and artistic talent of the stimulus people in the tape, and the first manipulation was delivered. Next s/he listened to the "audio-only" tape, made the rankings, and received the second manipulation. Then s/he watched the "video with audio" tape and completed the person judgment task with reference to each stimulus person. Finally, a brief self-rating task was completed.

There were seven groups. Within each group half made the artistic talent ranking first, and then the intelligence ranking, and the other half completed these tasks in the reverse order. The groups were as follows:

- (1) Attribution (to the subject of the ability to make a specific "first impression" person judgment, namely the ability to judge the artistic talent of another person)
- (2) Expectation (that the subject would do well at the judgment task)
- (3) Social comparison (the subject's ability compared to that of "other students")
- (4) Social reinforcement (that the subject is doing well)

- (5) Feedback (about the subject's judgment accuracy)
- (6) Control (aschematics - those who had not previously thought about themselves in terms of the ability to make the judgment)
- (7) Control (schematics - those who had previously thought about themselves in terms of the ability to make the judgment)

Essentially Experiment 1 was replicated, with the addition of two groups, an accuracy feedback condition (such a condition had not been relevant to the tasks of Experiment 1), and a "social comparison" condition. This type of praise was selected as being interesting because, according to the results of two small studies in which groups of tertiary students rated the likelihood of use of praising locutions by their parents when they, the students, were about twelve years old, it is one of the least frequently used locutions. "Social comparison" received a rank of 16 out of 19 in the case of one study and 19 out of 19 in the case of the other (the RHQ/Parent Praise study is described in Chapter 11). It was hoped that some differential effect of praise might be observed, and that frequency of earlier reported use might be a relevant variable.

In the main dependent task the subject judged, for each of four stimulus people, some quite specific characteristics (see "Person Judgment Task" and descriptions below), but was instructed to leave blank those on which s/he felt unable to make a judgment. The instructions made it clear that this was fine and to be expected, given that we only make some judgments when we feel we have the relevant information. Eight items from each of three different categories were devised, one category being the dependent judgment category, "artistic talent", the other two being controls, "intelligence", and a general one not referred to in the first two phases of the experiment, "temperament". Over four stimulus people a total score of 32 was thus available for each category. Subjects also rated their confidence after each judgment so that it could be determined whether this was affected by the manipulation.

7.1.1.1.2 Preliminary Work: Selection of Category: There were three data collection phases prior to the devising of the specific tasks. A free-response questionnaire was initially distributed to tertiary students asking them to write down up to five characteristics or abilities that they felt (a) they could, and (b) they couldn't, judge as a first impression of another person. The questionnaire is shown in Appendix 3.1.1. Twenty-eight of these were returned and the data were combined into an alphabetized list of "characteristics, attributes and abilities".

The questionnaire shown in Appendix 3.1.2 was then completed by a further group of tertiary students. They were asked to tick "can" or "can't" make a first impression judgment for each of these person characteristics (the option was also given to leave blank if unsure). Frequency tallies, which also appear in the Appendix, were made in order to determine one on which almost everyone felt they could not make a judgment. That is, it was decided to select a judgment category on which all subjects were likely to be equal in

their prior estimation of their ability. Twenty-four students returned this preliminary questionnaire. It seemed that almost no-one felt that it was possible to make a judgment about artistic talent, musical talent, politics, hobbies and interests, outlook on life, or likes and dislikes. Most people felt that they could make a judgment about whether the person was anxious, arrogant, confident, enthusiastic, friendly, likeable, outgoing, shy, or trendy. Many of those in the latter group were not easily able to be adapted to the present task however, in that they reflected sometimes transient states rather than more enduring characteristics.

A further task was then devised. It related to "being schematic" in relation to judging the artistic talent of another person. Another group of tertiary students was asked to consider, for each of the same list of characteristics, whether or not they had previously considered their ability to make such a judgment. The questionnaire and response tallies are shown in Appendix 3.1.3. Those who had previously considered their ability to make a judgment about the artistic talent of another person would then be considered to have an "artistic talent judging schema". It subsequently emerged, as explained in the note at the end of Part 1 of this chapter, that it was very important to align the specific wording of this task with that of the instrument subsequently used to select schematics, the Self-Concept Questionnaire (Version 2). At the stage of planning the experiment, a decision was made to select a person characteristic about which almost no-one felt able to make a judgment (so that the ability to do so could then be attributed to them, or praised), but one about which there was likely to be an even split in terms of having a schema. At that stage the wording problem was unforeseen.

7.1.1.1.3 Experimental Tasks and Predictions: On the basis of the preliminary work, the characteristic "artistically talented" was selected. Ability to judge this characteristic would be attributed. It was selected because most people felt that they could not make a first impression judgment on it (see Appendix 3.1.2), whereas individuals were fairly evenly divided as to whether they have considered themselves in terms of the ability to make such a judgment (see Appendix 3.1.3). For control purposes, judgments about "intelligence" of stimulus people were also requested (people are evenly divided over whether they can make the judgment, but a majority of people are likely to be "schematic" on their ability to make this judgment - see Appendices 3.1.2 and 3.1.3). This control was included because of findings that activation of judgment categories can affect subsequent person judgments (see Srull and Wyer, 1979). The preliminary judgment tasks used in Experiment 4 are shown in Appendices 3.1.6.1 and 3.1.6.2. In the third phase of the experiment when quite specific judgments were requested from subjects, a third, more general category, "temperament", was added to the "artistic talent" and "intelligence" categories for control and comparison. This task is shown in Appendix 3.1.7.

To devise the task for the third phase some further preliminary work was undertaken. A series of statements was devised to represent the three categories, artistic talent,

intelligence and temperament. Thirteen judges (colleagues of the experimenter) completed the "Statement Classification Task" (see Appendix 3.1.4) to determine whether the categories were discrete. Numbers agreeing with the experimenter's judgment are included in the Appendix. The final statements were selected on the basis of this task and some informal comments by judges (where possible those eliciting perfect agreement were included). There were eight per category (see "Person Judgment Task" in Appendix 3.1.7). The major prediction in the experiment was that subjects would mark more items in the category, artistic talent, when they had been praised for making a correct judgment earlier. As will be outlined in the following paragraphs, other peripheral hypotheses were also investigated.

It seems from various lines of research that there may be some relationships between self- and other-perception. For example, Lemon and Warren (1974) found that the same traits are used in the perception of others as of oneself. Earlier work by Snygg and Combs (1959), among others, indicated that the self seems to function as a reference point against which others are compared. Thus, "people are not really fat unless they are fatter than we are" (Snygg and Combs, 1959, p. 145). Comparison between self and others is of course a central notion in Festinger's (1954) social comparison theory and also in Jones' and Gerard's (1967) "comparative appraisal" theory of self-development.

Although Markus, Smith and Moreland (1985) reviewed the literature relevant to the interaction between the self-concept and the perception of other people and concluded that "the precise nature of the contact between self-perception and the perception of other people remains something of a mystery" (p. 1495), some recent work indicates certain clear relationships. For example, Lewicki (1984) found that perception of others on a given trait may be related to the desirability of that trait in oneself. If so, it may be this variable, rather than the experimenter's praise or attribution, which evokes any observed effect. Thus, a brief desirability self-rating task on the characteristics "artistic talent" and "intelligence" was planned as the final task (see Appendix 3.1.8). The purpose of this task was to determine how personally desirable the subject considered it to be to possess the characteristics about which s/he was making a judgment.

Markus and Smith (1981) concluded that the relationship between self- and other-perception is more complex than might be summarized by the homily "as you judge yourself, so shall you judge others". Broadly, these investigators found that if the target person's behaviour is relevant to the perceiver's, and in areas considered important to the self, then similar dimensions or categories for judgment will be used. It should be noted that the forced nature of the tasks used in the present study militate against the drawing of any comparable conclusions to those of Markus and Smith. Nevertheless, the 1985 work of Markus et al bears on this study. In their article, Markus et al draw an analogy between the schematic and the expert who organizes information systematically and in a manner which maximizes the possibility of retrieval. On this basis it might be anticipated that Group 7,

subjects who have previously thought about their ability on the dimension in question, would differ in terms of number of judgments made, or confidence in those made, when compared to Group 6, subjects who have not previously made the self-judgment.

To reiterate, the primary aim of Experiment 4 was, broadly, to determine whether there were any differences in performance related to the type of praise received, and specifically whether the number of items checked in the "artistic talent" category differed among groups. A secondary aim related to the attempt to determine whether there were any differences in performance between those who did, and those who did not, have a schema in relation to the key judging category. A final aim was to eliminate other explanations for any observed effects, and was thus to determine whether the subject's own position with regard to the key characteristic related to performance.

7.1.1.1.4 The Experimental Material: With the co-operation of a colleague of the experimenter, twelve students from another tertiary institution were recruited to act as stimulus people for the study. Six of these were male and six were female, two of each gender serving in each phase. For Phase 1, a videotape was prepared and edited, and this was shown without audio (stimulus people were identified with the letters I, J, K and L). For Phase 2 an audiotape was made, and later edited and dubbed by the experimenter to identify individuals by letters of the alphabet (persons E, F, G and H). For Phase 3 a further video was made and edited, and both sound-track and picture were utilized (persons A, B, C and D). In editing 30 minute tapes into five minute tapes, an attempt was made to display an approximately equivalent amount of involvement in the discussion by each stimulus person, without obvious breaks in continuity. This was managed reasonably successfully, since the discussion topic, "The effect of women's liberation on society", generated lively debate.

## 7.1.2 Method

7.1.2.1 Subjects: Of the 185 students who completed the Self-Concept Questionnaire (Version 2) (most of these also completed the Self-Monitoring scale at the same time), 88 responded to a request that they participate in a "person perception study". They were unaware of any link between the questionnaire they had completed and this study. These subjects were from the 1986 Psychology I undergraduate subject pool at the University of Adelaide. Their average age was 20.38 years (s.d.=5.83). There were 24 males and 64 females. Subjects were assigned to a group and a condition (artistic ranking first, or intelligence ranking first, for the first two phases) on the basis of a predetermined random number system.

7.1.2.2 Procedure: The Self-Concept Questionnaire (Version 2) and the Self-Monitoring scale (see Appendix 6.5) were administered during the preliminary testing sessions at the beginning of 1986. In order to increase the number of returns, students were subsequently given an opportunity to return completed questionnaires to the departmental office.

Respondents were initially contacted by letter through the University's internal mail system and asked to sign up to participate in a person perception study. They were informed that the researcher was interested in the effects of the availability of different amounts of information on the ability to make judgments about other people.

When subjects came to the experimental room they were greeted in a friendly manner, and asked to read some "General Instructions" (see Appendix 3.1.5). The three phases of the study (see Section 7.1.1.1.1 above) were explained to them and they then completed the tasks for each phase, with the manipulations being delivered at the appropriate times.

Once they had completed all tasks, they were thanked and informed that they would receive details of the purpose and results of the study when it was finished. In fact, there were two feedback phases, the first relating to the questionnaires, and the second to the experiment itself. Each subject received two letters with the offer to approach the experimenter for any further information.

7.1.2.3 Wording of Manipulations: For each group the manipulation after the intelligence ranking tasks was identical; in the first phase, "That's fine. Did you find that one difficult? I haven't been able to get scores for all the people yet so I'll have to match up your rankings later", and in the second phase, "O.K., fine. Let's go on to the next task/tape now". The differences between the groups in terms of manipulations occurred after the artistic talent ranking task. As had been done in the previous experiments, an effort was made to equalize the length of locutions across groups. For this reason there was a slight variation in comments made to each group once the actual manipulation has been incorporated in the locution.

#### 7.1.2.3.1 Wording of Manipulations - Phase 1

- (1) Attribution: "Well done - those rankings are correct. You seem to be very good at judging artistic talent in people. You're obviously pretty perceptive about that particular characteristic".
- (2) Expectation: "Well done - those rankings are correct. I guess you'll do well on the next tape, too. I feel pretty confident that you'll do just as well on the next tape".
- (3) Social comparison: "Well done - those rankings are correct. Very few students get the rankings entirely correct. That means that you've done better than most others will do/have done".
- (4) Social reinforcement: "Well done - those rankings are correct. That's very good, very good indeed. It's amazing how many judgments we actually go round making about other people all the time."
- (5) Feedback: "Well done - those rankings are correct. It's amazing how many judgments we actually go round making about other people all the time - and it's hard to say what cues we are using".

(6) and (7) Control (Aschematic) and Control (Schematic): "It's amazing how many judgments we actually go round making about other people all the time - and it's hard to say what cues we are using. I'll be matching up everyone's rankings later".

#### 7.1.2.3.2 Wording of Manipulations - Phase 2

(1) Attribution: "You're absolutely right again. You really do have an ability to judge artistic talent, don't you".

(2) Expectation: "You're absolutely right again. I'm confident you'll continue to do well on the next tape".

(3) Social comparison: "You're absolutely right again. Really very few students are so accurate on these rankings".

(4) Social reinforcement: "You're absolutely right again. Good, you're really doing well".

(5) Feedback: "You're absolutely right again. Those rankings are in the correct order".

(6) and (7) Control (Aschematic) and Control (Schematic): "When I match up the rankings I'll be interested to see whether we get more information from the video- or the audio-tape".

### 7.1.3 Results

The numbers in each group are shown in Table 7.1.1.

**Table 7.1.1: Numbers of subjects run under each condition, Experiment 4.**

	Condition	1	2	3	4	5	6	7	Total
Ranking	Artistic	7	7	7	7	7	7	5	47
First	Intelligence	6	6	6	6	6	6	5	41
	Total	13	13	13	13	13	13	10	88

#### 7.1.3.1. Comparison of Groups on Artistic Judgment Scores, Intelligence Scores and Temperament Scores

For each of the categories "artistic talent", "intelligence" and "temperament", a total score was calculated which was the absolute number of judgments made. Oneway analyses of variance were calculated to determine whether there were significant differences among groups in number of judgments made.

There were no significant differences among groups in number of judgments made in any category.

##### 7.1.3.1.1 Comparison of Judgment Scores With Self-Concept Items as Covariate

The analyses on number of judgments made in each category were repeated using "I am a good judge of people" and "I am a perceptive person", as they were rated on the Self-Concept Questionnaire (Version 2), as covariates. This did not alter the result.

Overall means and standard deviations were calculated for the three categories of judgment. These are shown in Table 7.1.2.



**Table 7.1.2:** Means and standard deviations, over all groups, of number of judgments made in each category.

Judgment Score	Mean	s.d.
Artistic	21.03	8.78
Intelligence	25.29	5.77
Temperament	24.88	6.09

### 7.1.3.2 Comparison of Groups on Confidence in Artistic Talent, Intelligence and Temperament Judgments

A mean score for confidence in judgments in each of the categories was calculated by adding up total confidence scores within each category and dividing by the number of judgments made in that category. Oneway analyses of variance revealed no significant differences among groups.

### 7.1.3.3 Comparison of Groups on Self-Rating Variables

A series of oneway analyses of variance was performed to determine whether there were any differences among groups in self-rating on intelligence and artistic talent, or in the importance and desirability of these characteristics.

There were no significant differences among groups except in the desirability of artistic talent. The analysis of variance results are shown in Table 7.1.3, and Table 7.1.4 shows means and standard deviations. A Duncan's multiple range post-hoc test showed Groups 4, 5 and 6 to be significantly different from Group 7 ( $p < .05$ ). It thus appeared that the self-ratings were not distributed perfectly evenly across groups.

**Table 7.1.3:** Results of analysis of variance comparing groups on their ratings of the desirability of artistic talent.

Source of variation	df	SS	MS	F	p
Between groups	6	138.93	23.16	2.23	0.048
Within groups	81	839.78	10.37		
Total	87	778.72			

**Table 7.1.4:** Means and standard deviations, by group, of ratings of the desirability of artistic talent.

Group	N	Mean	s.d.
1	13	8.46	2.73
2	13	7.62	3.15
3	13	7.85	3.36
4	13	6.38	3.23
5	13	5.77	3.49
6	13	6.00	3.76
7	10	9.60	2.46

#### 7.1.3.4 Comparison of Groups on Self-Construction and Schematism Scores

A detailed description of the derivation of "Self-Construction" and "Schematism" scores appears in Chapter 10. For the purpose of some analyses set out below it should be reiterated that these scores were derived from the Self-Concept Questionnaire (Version 2). A Self-Construction score was a simple total of the number of items which respondents noted as being part of their self-description. A Schematism score was calculated according to an adaptation of Markus' (1977) procedure. It was the total of items on which subjects rated themselves as extreme and which were also personally important to them.

Table 7.1.5 shows the results of the significant oneway analysis of variance comparing groups on Self-Construction. A Student-Newman-Keuls post-hoc contrast test showed that Group 7 was significantly different from all other groups ( $p < .05$ ). That is, as might be expected, subjects in Group 7 who were schematic on the experimental variable were significantly different from all other groups on overall Self-Construction score. A similar result was not found for Schematism ( $F = 1.8$ ,  $p = .1$ ). Means and standard deviations of the groups are shown in Table 7.1.6.

**Table 7.1.5:** Results of analysis of variance comparing groups on Self-Construction scores.

Source of variation	df	SS	MS	F	p
Between groups	6	258.24	43.04	2.32	0.04
Within groups	81	1505.51	18.59		
Total	87	1763.75			

**Table 7.1.6:** Means and standard deviations, by group, of Self-Construction and Schematism scores.

Group	N	Self-Construction		Schematism	
		Mean	s.d.	Mean	s.d.
1	13	11.51	4.06	09.54	3.55
2	13	10.57	5.01	08.79	3.04
3	13	12.54	3.86	10.07	6.70
4	13	10.69	4.07	07.92	4.07
5	13	11.90	3.95	09.62	4.66
6	13	10.81	3.97	08.93	4.89
7	10	16.30	5.29	13.80	4.08

### 7.1.3.5 Correlational Analyses

#### 7.1.3.5.1 Intercorrelation of Self-Variables

##### 7.1.3.5.1.1 Artistic Talent

There were high and significant correlations between self-rating and importance ( $r=.783$ ,  $N=88$ ,  $p=.0001$ ), between self-rating and desirability ( $r=.464$ ,  $N=88$ ,  $p=.0001$ ), and between importance and desirability ( $r=.625$ ,  $N=88$ ,  $p=.0001$ ).

##### 7.1.3.5.1.2 Intelligence

There was a high and significant correlation between self-rating and importance ( $r=.611$ ,  $N=88$ ,  $p=.0001$ ), and between importance and desirability ( $r=.537$ ,  $N=88$ ,  $p=.0001$ ). There was a significant correlation between self-rating and desirability ( $r=.289$ ,  $N=88$ ,  $p=.003$ ).

These findings are compatible with Markus' (Markus, Smith and Moreland, 1985) claim that there is always a high correlation between level on a variable and importance of that variable. They are also consistent with a modification of Markus' assertion which was suggested following analysis of the Self-Concept Questionnaire (Version 2) that the relationship will hold most predictably for positive characteristics (see Chapter 10).

#### 7.1.3.5.2 Correlation Between Self-Variables and Confidence of Ranking in the Corresponding Domain

##### 7.1.3.5.2.1 Artistic Talent

As Table 7.1.7 shows, there were significant correlations between confidence in artistic talent judgments and the self-variables for both video-only and audio-only, except in the case of the desirability of artistic talent in the video-only situation.

**Table 7.1.7:** Correlations between self-variables and confidence in rankings of artistic talent, after video-only and audio-only presentations.

Persons	Confidence in Ranking	
	IJKL	EFGH
	(video only)	(audio only)
Self-rating	.271**	.374***
Importance	.203*	.398***
Desirability	-.066	.186*

\* =  $p < .05$

\*\* =  $p < .01$

\*\*\* =  $p < .0001$

#### 7.1.3.5.2.2 Intelligence

Correlations between the self-variables and confidence in intelligence judgments were small or negligible in the video-only situation, but significant in the audio-only situation (see Table 7.1.8).

**Table 7.1.8:** Correlations between self-variables and confidence in rankings of intelligence, after video-only and audio-only presentations.

Persons	Confidence in Ranking	
	IJKL	EFGH
	(video only)	(audio only)
Self-rating	.047	.364***
Importance	.149	.290**
Desirability	.041	.247*

\* =  $p < .05$

\*\* =  $p < .01$

\*\*\* =  $p < .0001$

#### 7.1.3.5.3 Correlations Between Self-Variables and Confidence in Judgment Task

##### 7.1.3.5.3.1 Artistic Talent

Confidence scores were summed across the artistic talent judgment items, and correlations with the self-variables calculated. There were significant correlations with self-rating ( $r = .316$ ,  $N = 88$ ,  $p = .001$ ) and importance ( $r = .116$ ,  $N = 88$ ,  $p = .015$ ) of artistic talent, but not with its desirability.

##### 7.1.3.5.3.2 Intelligence

The intelligence items were treated in the same manner as the artistic talent items had been. There were significant correlations between overall confidence in judging intelligence items and self-rating on intelligence ( $r = .269$ ,  $N = 88$ ,  $p = .006$ ), importance of intelligence ( $r = .254$ ,  $N = 88$ ,  $p = .008$ ), and desirability of intelligence ( $r = .324$ ,  $N = 88$ ,  $p = .001$ ).

#### 7.1.3.5.4 Correlations Between Self-Construction, Schematism and Self-Monitoring, and the Experimental Variables

Table 7.1.9 shows that, although none of the correlations were large, Schematism score generally correlated with the experimental variables, while Self-Monitoring score did not.

**Table 7.1.9: Correlations between Self-Construction, Schematism, and Self-Monitoring, and selected experimental variables.**

Variable	Self-Con.	Schem.	Self-Mon.
No. of artistic judgments made	.249**	.293*	.089
No. of Intelligence judgments made	.238*	.361**	.080
No. of temperament judgments made	.268**	.370**	.065
Overall confidence in artistic judgments.	.208*	.205*	.042
Overall confidence in Intelligence judgments.	.188*	.325**	.135
Overall confidence in temperament judgments.	.192*	.304*	.156
Overall confidence, all judgments	.211*	.309*	.127

Note: For Self-Construction and Schematism N=88, for Self-Monitoring N=83.

\* =  $p < .05$

\*\* =  $p < .01$

Correlations were also calculated between Self-Construction, Schematism and Self-Monitoring and the first ranking task, that is, the task undertaken before any experimental manipulation was introduced. Again, the correlations with Self-Construction were significant (artistic talent -  $r = .316$ ,  $N = 47$ ,  $p = .001$ ; intelligence -  $r = .258$ ,  $N = 41$ ,  $p = .008$ ) as were those with Schematism (artistic talent -  $r = .241$ ,  $N = 47$ ,  $p = .051$ ; intelligence -  $r = .293$ ,  $N = 41$ ,  $p = .03$ ) while those with Self-Monitoring were not (artistic talent -  $r = .134$ ; intelligence -  $r = .102$ ).

#### 7.1.3.6 Comparison of Groups on Score, and Confidence, for Single Item Artistic Talent Judgment

One of the items in the judgment task was quite specifically "S/he is artistically talented". There was no significant difference among groups on scoring for this item over four target people. There was also no significant difference among groups in their confidence in making this judgment of four target people.

#### 7.1.3.7 Comparison of Subjects Below and Above the Mean on Self-Construction and Schematism on Coming to the Experiment

There was no significant difference between high and low scorers on Self-Construction or Schematism in their tendency to participate in the experiment.

### 7.1.3.8 Comparison of Subjects Below and Above the Mean on Self-Construction and Schematism on Number of Judgments made in Each Category

Although none of the comparisons was significant, differences were in the direction that subjects above the mean on Self-Construction or Schematism tended to make more judgments in every category. Table 7.1.10 shows means and standard deviations for Self-Construction, and Table 7.1.11 shows these results for Schematism.

**Table 7.1.10:** Number of judgments made in each category by subjects above and below the mean Self-Construction score.

Self-Construction	N	Artistic Talent		Intelligence		Temperament	
		Mean	s.d.	Mean	s.d.	Mean	s.d.
Above Mean	41	22.59	8.34	25.80	5.53	26.02	5.35
Below Mean	47	19.68	9.03	24.85	5.99	23.87	6.57

**Table 7.1.11:** Number of judgments made in each category by subjects above and below the mean Schematism score.

Schematism	N	Artistic Talent		Intelligence		Temperament	
		Mean	s.d.	Mean	s.d.	Mean	s.d.
Above Mean	46	21.17	9.19	25.83	5.42	25.37	6.14
Below Mean	42	20.88	8.43	24.71	6.15	25.37	6.08

### 7.1.3.9 Comparison of Subjects Below and Above the Mean on Self-Construction and Schematism on Overall Confidence

Subjects who scored above the mean on Self-Construction were significantly more confident when composite confidence scores were compared (across all categories and targets). These results are shown in Table 7.1.12.

**Table 7.1.12:** Results of t-test comparing subjects above and below the mean Self-Construction score on overall mean confidence.

Self-Construction	N	Mean	s.d.	t	df	p
Above Mean	41	5.05	0.65	2.08	86	0.041
Below Mean	47	4.72	0.79			

There was also a significant difference for confidence in intelligence ratings alone (above mean - mean=5.15, s.d.=.69; below mean - mean=4.82, s.d.=.81,  $t=2.02$ ,  $df=86$ ,  $p=.047$ ).

The result in relation to overall mean confidence was also true for subjects above and below the mean on Schematism, as can be seen in Table 7.1.13.

**Table 7.1.13: Results of t-test comparing subjects above and below the mean Schematism score on overall mean confidence.**

Schematism	N	Mean	s.d.	t	df	p
Above Mean	46	5.05	0.58	2.40	71.16	0.019
Below Mean	42	4.68	0.86			

In the case of Schematism there were also significant differences for confidence in intelligence judgments alone (above mean - mean=5.17, s.d.=.60: below mean - mean=4.76, s.d.=.89,  $t=2.5$ ,  $df=86$ ,  $p=.015$ ) and confidence in temperament judgments alone (above mean - mean=5.16, s.d.=.64: below mean - mean=4.78, s.d.=.86,  $t=2.34$ ,  $df=86$ ,  $p=.022$ ).

#### **7.1.4 Discussion**

None of the experimental predictions was confirmed. However there were some interesting relationships between the self-variables and response to the judgment task, and more particularly between scoring on the "schematism" variables and the experimental tasks. It does seem that individuals who are prepared to note more items as being self-descriptive do respond differently to various experimental tasks than do those noting fewer (cf. Experiment 3 described in Chapter 9 Part 1).

While the results of this experiment in relation to the main hypotheses were disappointing, they did give rise to a new line of enquiry, the issue of the extent to which subjects feel they can choose to behave in accordance with an attributed characteristic or a praised behaviour. That is, a possible explanation for the complete failure to show any differences among the groups in this experiment, when there were certainly indications of differences among groups in the other experiments, is that subjects quite simply felt that they did not know how to change their behaviour in accordance with the attributed characteristic, or the praise. Thus they behaved as they would have done had it not occurred. The argument underlying this hypothesis was set out in some detail in Chapter 4, and is summarized again in Chapter 8 where a relevant experiment, Experiment 6, and two relevant questionnaire studies are described.

To pursue this hypothesis, a slightly new research direction was taken and two further experiments and a questionnaire study were devised (on the basis of the results of the latter study a second questionnaire study was also undertaken). Experiment 8, described in Part 2 of this chapter was one of the experiments, and the other empirical work is set out in Chapter 8.

**Note:** Initially two experiments had been planned in place of Experiment 4, but despite pilot work to assist in the construction of these experiments, an apparently subtle,

but in actuality, extremely important, variation in wording of a pilot questionnaire, in comparison to that used in the Self-Concept Questionnaire (Version 2), resulted in an unanticipated raising of the threshold for being schematic on the relevant variable, that relating to the ability to judge another person's artistic talent. Thus, while it was expected from the original pilot work that about 50 percent of respondents would be schematic, the actual number among those who completed the Self-Concept Questionnaire (Version 2) was much lower than this (22/185, approximately 12 percent).

Initially a questionnaire was distributed in which respondents were asked to tick a "have" or "haven't" column as to whether they had thought about themselves in terms of the ability to make this judgment before (see Appendix 3.1.3). These data were collected in order to find some person characteristic on which there was an approximately 50/50 split amongst people on being schematic in relation to the characteristic. This work was described in detail under "Preliminary Work: Selection of Category" above.

The wording change in question was as follows -

in the pilot questionnaire which referred to a list of person characteristics, respondents were asked to "(think about) whether you have previously considered your ability to make such a judgment. Please tick the 'have' column if you are pretty sure you have thought about your ability to make a first impression judgment of a person on this characteristic before. Tick the 'haven't' column if it's never occurred to you before to consider whether you are able to make this sort of first impression judgment about another person."

The wording in the questionnaire, following the format of the original Self-Concept Questionnaire (see Chapter 10), referred to whether the respondent would include such an ability in a self-description, viz. "although I have not necessarily considered rating myself on a scale before, I have thought about myself in terms of this characteristic before now, distinctly enough that I might well have included a reference to the characteristic in a description of myself."

The effect of this outcome was that a change in the experimental programme became necessary, with the previously envisaged Experiments 4 and 5 being in effect combined. Further groups were added to the original "Experiment 5" design to take advantage of the subjects who were potentially available. A fifth experiment was also conducted subsequently but it was completely different in aim and method from that originally envisaged. It is described in Chapter 10, Part 2.



## PART 2

### EXPERIMENT 8

#### 7.2.1 Introduction

Experiment 8, the final experiment, was undertaken because of the failure to support the predictions of Experiment 4, and the difficulty in interpreting the results of Experiment 6 (described in Chapter 8 Part 1). It was based on the hypothesis that an attribution manipulation, or indeed any kind of praising locution, will not affect behaviour unless the recipient of the praise believes that s/he has the choice to behave consistently with the (implied) characteristic. This notion is elaborated in Chapter 8 where further related empirical work is described.

The aim of the experiment was to replicate, in concept, Experiment 4, but to substitute a "high choice" characteristic for the "low choice" characteristic which was attributed in the former study. The characteristic attributed was "the tendency to look for the good in another person", a "high choice" characteristic relative to "perceptive about the artistic talent of another person". That is, it was considered that subjects would be more likely to feel able to choose to "look for the good characteristics in another person" than to choose to "be perceptive". It was hoped to determine whether different praising locutions affect behaviour differently.

The usual three-phase design was employed, with categorical judgments being requested in the first two phases, and specific person judgments in the third. It was predicted that the groups would differ in the number of statements from the "good" category on which they felt able to make a judgment at the third phase. The attribution group should make relatively more judgments in this category, and should be more confident about those which were made. Given the results of previous studies conducted as part of this project, there was no evidence upon which to base further predictions, except that possibly the attribution and expectation groups would be differentially confident in all their ratings.

#### 7.2.2.1 Description of Experiment

7.2.2.1.1 Design: Five groups, with 12 subjects per group, were planned. Groups were planned in such a way as to replicate the conditions of Experiment 4 although a feedback group was not relevant given the newly devised tasks, and there was of course only one control group. Thus the conditions were as follows -

- (1) Attribution of a characteristic (the tendency to look for the good in other people)
- (2) Expectation (that subjects would do well at the tasks)
- (3) Social comparison (the subject's ability compared to that of "other students")
- (4) Social reinforcement (that subjects were doing well)
- (5) Control

7.2.2.1.2 Stimulus Material: Tapes were made with the co-operation of six of the 12 people who had participated in the making of the tapes used for Experiment 4. The same topic was discussed by the three male-female pairs, viz. the effect of women's liberation on society, and short video-only, audio-only, and video-plus-audio tapes were subsequently prepared.

7.2.2.1.3 Experimental Tasks: In the first two phases subjects were asked to judge whether or not each of the stimulus people had each of a series of traits. The task appears in Appendix 3.2.3. Half of the traits were "good" and half were "bad". For each trait judgment made, subjects rated their difficulty in making the judgment on a 7-point scale. The final task, from which the main dependent measure could be derived, was the Person Judgment Task shown in Appendix 3.2.4. This task included 24 statements which might be true of any given individual. One third of these, if true, were "good" facts about a person, one third "bad", and the remainder neutral. The judgments of independent judges were used to determine the classification into these categories (see frequency data in Appendix 3.2.1).

## 7.2.2 Method

7.2.2.1 Subjects: Sixty undergraduates enrolled in Psychology I in 1987 participated in the experiment. Their average age was 19.56 years (s.d.=4.173) at the time the experiment was run. There were 37 females and 23 males.

7.2.2.2 Procedure: Potential subjects were initially contacted by letter and asked to participate in a "Person Perception Study". They were told that the researcher was interested in how we make judgments about others given different amounts of information, and that they would be asked to make judgments about both the good and the more negative characteristics of six people in all. Those who did not respond to the letter by signing up for the experiment at the Departmental office were then contacted by telephone and asked again to participate. General Instructions to subjects appear in Appendix 3.2.2. There were three phases in the experiment. In broad outline the procedure was identical to that used in Experiment 4.

After being greeted in a friendly manner by the experimenter, subjects were told that they would see a brief segment of video of two people having a discussion, but that they would not hear the sound. They would then be asked to make some judgments about the characteristics of the people and to indicate how difficult they found it to do so. Then they would hear two different people having a discussion and they would be asked to make the same judgments about them as they had made about the first pair. All pairs would be discussing the same topic, the effect of women's liberation on society. In the final phase they would see and hear two further people and because this time they had the maximum amount of information available they would be asked to do something more complex that the researcher would tell them about at the time. At that third stage it was explained that after seeing the tape they would complete a "Person Judgment Task", in which they would be asked whether they could make some quite specific judgments about each person. They

would also be asked to rate their confidence in their judgment for each one that they felt they could make. If they asked what the accuracy criterion for the traits was, the experimenter planned to say that three others who know the stimulus people well had completed the characteristics task.

Which condition a given subject was run under was determined by a previously prepared table of the numbers one to five in a random sequence, each number appearing 12 times.

#### 7.2.2.2.1 Wording of Manipulations - Phase 1

(1) Attribution: "Let's have a look at your ratings. It seems from what you've put that you tend to look for the good rather than the bad characteristics in others. Yes, you're obviously a person who finds it easy to look for the good in other people".

(2) Expectation: "Let's have a look at your ratings. It seems from what you've put that you'll find it just as easy to judge good and bad characteristics on the next tape too, especially the good ones. Yes, you'll obviously do a good job with the audio-tape".

(3) Social Comparison: "Let's have a look at your ratings. It seems from what you've put that you're doing better than a lot of students with both the good and the bad characteristics, especially the good ones. Yes, you're doing better than most of the students".

(4) Social Reinforcement: "Let's have a look at your ratings. Very good. It seems to me that you're doing well when it comes to both sorts of characteristic, the good and the bad, especially the good characteristics. Yes, you're doing a good job".

(5) Control: "Let's have a look at your ratings. It's amazing how many judgments we actually go round making about other people all the time - about all their characteristics, perhaps especially the good ones. And it's often hard to say what cues we are using".

#### 7.2.2.2.2 Wording of Manipulations - Phase 2

(1) Attribution: "Once again, you're obviously looking for the good characteristics in the people. I guess you're the sort of person who always does that".

(2) Expectation: "I'm pretty confident that you'll do just as well when you can use more information. Yes, I think you'll do fine, especially with the good characteristics".

(3) Social Comparison: "Once again, you're doing quite a bit better than most of the other students with all the characteristics, especially the good ones".

(4) Social reinforcement: "Good. Once again, you're doing a good job at making judgments about all the different characteristics, especially the good ones. Yes, you're doing very well".

(5) Control: "When I look at everyone's judgments, I'll be interested to see whether we get more information about all the different characteristics, especially the good ones, from the video or the audio information".

### 7.2.3 Results

#### 7.2.3.1 Comparison of Groups on "Good" Judgments Made in Initial Phases

A score was calculated which might reflect the "tendency to look for the good in another person". This was the sum of the "yes" judgments for the good traits added to the sum of "no" judgments for the bad traits. It was calculated across two stimulus people, called F1 and M1, in the first phase. A oneway analysis of variance showed no significant difference among groups on this measure.

A similar calculation was made across F2 and M2 in the second phase. The latter score might be influenced by the manipulation. Again there was no significant difference among groups on this measure.

#### 7.2.3.2 Comparison of Groups on Main Dependent Measure

A oneway analysis of variance was used to compare groups on the main dependent measure, the number of judgments made in the "good" characteristics category. The analysis was repeated using the number of good judgments made in the first two phases as covariates. No significant differences among groups were found.

#### 7.2.3.3 Planned Comparisons of Groups on Confidence Ratings

Average confidence scores, the total confidence score for each category of items (good, bad or neutral) divided by the total number of judgments made in the specific category, were calculated. A total average confidence score was calculated in the same manner. After examination of the means of each group on these four scores, and on the basis of results found in earlier experiments in the research sequence, a series of orthogonal planned comparisons was undertaken. The primary comparison of interest was that between the attribution group and all other groups combined, since it had been shown that task ratings could be affected by an attribution manipulation. Since it could be expected, on theoretical grounds, that praise groups might differ from a control condition, this comparison was also made. And, while it was found, in Experiment 2, that attribution did not always have the same effect on ratings as expectation, it was also found, in Experiment 1, that attribution and expectation could not be distinguished, at least in terms of the main dependent measure, from social reinforcement and control. Thus, a further rationale was to examine these two conditions versus the rest. Social comparison was an unknown quantity in regard either to the main dependent measure or to task ratings, since it had only been included in one other experimental study, Experiment 4. Comparisons were done in the order, Attribution versus all other groups, then all groups excluding Attribution compared to Control, followed by Expectation versus Social Reinforcement and Social Comparison together, and finally the latter two compared.

While it could be argued that subjects were contributing different numbers of confidence ratings to these analyses, there was unlikely to be any bias against individual groups since there was no significant difference among the groups in numbers of items rated in any category.

#### 7.2.3.3.1 Planned Comparisons of Groups on Confidence Ratings for "Good" Items

The means relevant to the planned comparisons of groups on "good" items ratings are shown in Table 7.2.1.

**Table 7.2.1: Mean confidence ratings on "good" items.**

Group	N	Mean	s.d.
Attribution	12	4.43	.92
Expectation	12	4.19	.97
Social Comparison	12	3.58	.77
Social Reinforcement	12	3.91	.91
Control	12	3.95	.98

Comparing the Attribution group with all other groups combined did not result in a significant effect ( $p=.084$ ), but when Attribution and Expectation groups together were contrasted with the combination of the other three groups, there was a significant difference ( $t=2.06$ ,  $df=55$ ,  $p=.044$ : combined mean for Attribution and Expectation=4.31; for other groups=3.81). No other comparisons showed significant differences.

#### 7.2.3.3.2 Planned Comparisons of Groups on Confidence Ratings for "Bad" Items

No planned comparisons of "bad" items ratings were significant. The means are shown in Table 7.2.2.

**Table 7.2.2: Mean confidence ratings on "bad" items.**

Group	N	Mean	s.d.
Attribution	12	4.44	.98
Expectation	12	4.34	1.09
Social Comparison	12	3.75	.74
Social Reinforcement	12	4.37	1.39
Control	12	3.91	.95

#### 7.2.3.3.3 Planned Comparisons of Groups on Confidence Ratings for "Neutral" Items

Table 7.2.3 shows the means for each group. It can be seen from the N column that this was the only category of items in which some subjects made no judgment at all.

**Table 7.2.3:** Mean confidence ratings on "neutral" items.

Group	N	Mean	s.d.
Attribution	11	4.48	1.29
Expectation	12	3.69	.79
Social Comparison	9	2.86	1.35
Social Reinforcement	11	3.87	.61
Control	12	3.61	1.14

In fact a oneway analysis of variance proved to be significant on the basis of these results ( $F=2.97$ ,  $df=4/50$ ,  $p=.028$ ). Post-hoc comparisons revealed that Attribution was significantly different from Social Comparison (Student-Newman-Keuls,  $p<.05$ ).

Despite this result, the planned analyses were also carried out. This time the Attribution group was significantly different from all other groups combined ( $t=2.71$ ,  $df=50$ ,  $p=.009$ : Attribution mean=4.48; weighted combined mean of other groups=3.54).

#### 7.2.3.3.4 Planned Comparisons of Groups on Total Confidence Score

Means of the groups on a total confidence score are shown in Table 7.2.4. Although items comprising the previously described scores combined to create the scores on which these means are based, it is interesting to examine what might be considered a general measure of confidence in their ratings for each group. This examination suggested that Attribution would be unlikely to differ from all other groups combined. On the other hand, it seemed likely, given that the Social Comparison group consistently had the lowest mean, that confidence was lowest in this group.

**Table 7.2.4:** Mean confidence ratings on all items.

Group	N	Mean	s.d.
Attribution	12	4.44	.89
Expectation	12	4.17	.91
Social Comparison	12	3.61	.69
Social Reinforcement	12	4.02	1.07
Control	12	3.89	.93

Thus, a comparison was made among the praise groups, Social Comparison being compared with the three other praise groups combined. The result was just significant ( $t=-1.98$ ,  $df=55$ ,  $p=.053$ : Social Comparison mean=3.61; means of other praise groups=4.21).

It was concluded from these results that different praising locutions do have different effects on subjects' ratings of confidence in their person judgments, and moreover that attributional praise might be rather different from all other categories of praise.

### 7.2.4 Further Analysis of Experiment 4: Planned Comparisons of Confidence Ratings

In view of the results of the planned comparisons in Experiment 8, an investigation into the replicability of these results was conducted. The existing data from Experiment 4 were re-analyzed and similar comparisons were made on the confidence ratings as had been made on those ratings from Experiment 8. The parallel three sets of scores, for confidence in artistic talent judgments, intelligence judgments, and temperament judgments, were used in the analyses, as was a total confidence score across all judgment categories.

#### 7.2.4.1 Planned Comparisons of Groups on Confidence in Artistic Talent Judgments

Table 7.2.5 shows the mean confidence scores for judgments in the artistic talent category, by group.

**Table 7.2.5:** Experiment 4 - Mean confidence scores for judgments in artistic category.

Group	N	Mean	s.d.
Attribution	13	4.02	1.09
Expectation	13	4.74	.63
Social Comparison	13	4.93	.87
Social Reinforcement	13	4.59	.92
Feedback	13	4.63	.71
Control (Aschematic)	13	4.67	.96
Control (Schematic)	10	4.52	1.49

There was a significant difference between the Attribution group and the combination of all other groups ( $t=-2.26$ ,  $df=82$ ,  $p=.027$ : Attribution mean=4.02; weighted combined means of all other groups=4.69). The interesting point about this comparison is that the difference was in the opposite direction to differences found in Experiment 8. That is, the Attribution group was significantly less confident than all other groups combined.

#### 7.2.4.2 Planned Comparisons of Groups on Confidence in Intelligence Judgments

A series of orthogonal comparisons on the mean confidence scores for items in the intelligence category did not reveal any significant differences. Table 7.2.6 shows the means.

**Table 7.2.6:** Experiment 4 - Mean confidence scores for judgments in intelligence category.

Group	N	Mean	s.d.
Attribution	13	4.78	1.08
Expectation	13	5.10	.37
Social Comparison	13	5.09	.69
Social Reinforcement	13	4.96	.59
Feedback	13	4.77	.74
Control (Aschematic)	13	5.22	.47
Control (Schematic)	10	4.88	1.28

#### 7.2.4.3 Planned Comparisons of Groups on Confidence in Temperament Judgments

Planned comparisons were made on the temperament means but no differences were found (see Table 7.2.7).

**Table 7.2.7:** Experiment 4 - Mean confidence scores for judgments in temperament category.

Group	N	Mean	s.d.
Attribution	13	4.91	.69
Expectation	13	4.94	.53
Social Comparison	13	5.06	.63
Social Reinforcement	13	5.02	.59
Feedback	13	4.89	.76
Control (Aschematic)	13	5.24	.71
Control (Schematic)	10	4.77	1.46

#### 7.2.4.4 Planned Comparisons of Groups on Confidence in All Judgments

Table 7.2.8 shows the mean confidence across all categories of judgment. No comparisons proved to be significant.

**Table 7.2.8:** Experiment 4 - Mean confidence scores for judgments across all categories.

Group	N	Mean	s.d.
Attribution	13	4.64	.89
Expectation	13	4.96	.41
Social Comparison	13	5.02	.65
Social Reinforcement	13	4.89	.59
Feedback	13	4.78	.66
Control (Aschematic)	13	5.09	.54
Control (Schematic)	10	4.74	1.36



Thus, far from being able to replicate the results of Experiment 8 with the data from Experiment 4, opposite results were found. Confidence ratings were affected in the main dependent category, and in an opposite direction from that of all results from Experiment 8. In that study the Attribution group alone was not significantly different from the combination of all other groups on confidence ratings in the main dependent category, but there was a difference in an apparently irrelevant category, that of neutral items. Attribution subjects were more confident of their judgments. Examination of Tables 7.2.5 to 7.2.8 shows that, while the difference is only significant in the one category, artistic talent judgments, the confidence of the attribution group is consistently low relative to all other groups. On the other hand, Social Comparison means are relatively high. It is important to include the word "relatively" since a visual inspection of these tables in comparison with Tables 7.2.1 to 7.2.4 shows that, if anything, the overall mean confidence is lower in Experiment 8 than it is in Experiment 4.

### 7.2.5 Discussion

From the results of Experiments 4 and 8 it can be concluded that although different praising locutions do not have a differential effect on the main dependent measure, number of judgments made, they do differentially affect confidence in the judgments that are made. Furthermore, "attribution" and "expectation" do not always have identical effects, as evidenced by the result on "neutral" items in Experiment 8. And, of all forms of praise used in that experiment, "social comparison" related to the lowest confidence rating. This result suggests that the form of "social reinforcement" used in a large number of studies described in the literature may not have as positive an effect on subject's affective reactions as some other praising locutions might (cf. Harackiewicz, Abrahams and Wageman, 1987).

That the confidence effects found in Experiment 8 could not be replicated in the data from Experiment 4 is interesting. It might be said that this result lends further support to the argument advanced at other points that praise is unlikely to have a positive effect when given for behaviours or characteristics that cannot be demonstrated at will or by choice. That is, it seems clear that relative to being perceptive about the artistic talent of another person, to be a person who tends to look for the good characteristics in another is more a matter of choice, "of having enough motivation, of wanting to enough" (cf. results of Behaviour Rating Questionnaire study, described in Chapter 8 Part 2, in which the mean for the former item=3.03, s.d.=1.66; mean for the latter item=5.39, s.d.=1.59). In a situation in which such a "high choice" characteristic is attributed, the effect on confidence ratings (and perhaps on a range of affective reactions) is positive. However when a "low choice" characteristic is attributed, confidence ratings are lowered. As noted above, this is only a relative lowering of ratings in one group compared to another since ratings in Experiment 8 were certainly not higher than they were in Experiment 4. However, presumably the interaction between the different preceding tasks of the two experiments, and the main task in each, could account for this effect.

Perhaps when the "low choice" characteristic is attributed subjects feel that they would like to believe the attribution and behave consistently with it, but knowing that they are unable to do so "by choice", they lose confidence specifically in relation to the relevant behaviour category. On the other hand, when a "high choice" characteristic is attributed, general feelings of confidence are raised, even if subjects actually question the validity of the experimenter's attribution. This could account for the failure to find an effect in the main dependent category, while finding one in a less "emotionally loaded" category, that of "neutral" items. Such post-hoc explanations would of course have to be tested in subsequent studies, and indeed the fairly weak effects would need replication, but it can be said that some difference has been found between the outcomes of attributing a "low choice" and a "high choice" characteristic.

In conclusion, although none of the effects were strong, the results of the experiments described in this chapter were certainly consistent with an emerging picture of the way in which different praising locutions affect the individual. As in the experimental sequence in which task ratings, including affective reactions to tasks, were measured, the attribution of a characteristic can result in rather unexpected effects, and different locutions do have different effects. Broadly, it can be said that different kinds of praise, while not affecting immediately observable behaviour, do cause different affective reactions. Whether, and if so how, these reactions mediate subsequent responses is an open question.

**CHAPTER 8**  
**PART 1**  
**EXPERIMENT 6**

**8.1.1 Introduction**

The results of Experiment 4 suggested that, at least when "perceptive" as a characteristic is attributed, different kinds of praise or verbal reinforcement do not differentially affect behaviour. In fact, praising locutions have no more effect on behaviour in this context than does a control communication. It may be argued that the reason for this failure to show an effect lies in a distinction that can be made between attributional praise of an ability and attributional praise of a behavioural propensity. In Chapter 4 it was argued that Kanouse et al (1981) generally imply "abilities" to be an interchangeable term with "attributes" but that there are a range of human attributes, from physical characteristics to behavioural propensities, all of which could be praised, but none of which need necessarily imply "ability" in the sense of an innate or acquired talent or skill. It was suggested in Chapter 4 that the latter can be distinguished from "behavioural propensities" which may be regarded as that range of attributes or characteristics which, when praised, would not leave the recipient of the praise feeling particularly that s/he had an ability as such. It was noted that Miller, Brickman and Bolen (1975) and Kirsch (1982, 1985) make a very similar distinction.

The aim of Experiment 6 was to explore the two categories further in an experimental context, by comparing the effects on behaviour of the attribution of two characteristics, one a "behavioural propensity" which subjects would be likely to feel that they could perform by choice, and the other an "ability" which subjects might classify as being a "given" and therefore not within their choosing. The attributed characteristics were "creative" to one group, and "persistent" to the other. The former was regarded as a "low choice" ability whereas the latter was considered to be a fairly "high choice" behavioural propensity. Although there were some difficulties in running a study at the stage of the year at which it was undertaken, it was hoped at the very least to gain some insight into factors relevant to the issues which have been raised.

**8.1.1.1 Description of Experiment and Predictions**

**8.1.1.1.1 Design:** A 4-group 2 X 2 design was devised, with two levels of task and two levels of treatment. The groups and treatments were as follows -

- (1) Attribution of "creative" following completion of a "creativity" task (Creativity Experimental - CrE).
- (2) No attribution of "creative" following completion of the "creativity" task (Creativity Control - CrC).
- (3) Attribution of "persistent" following completion of the same task now termed a "persistence" task (Persistence Experimental - PE).

(4) No attribution of "persistent" following completion of the task (Persistence Control - PC).

8.1.1.1.2 Tasks: There were two phases in the study, in between which the manipulation was delivered. In the first phase the task was "Interpret the Drawing" taken from an idea in De Carlo (1983), and in the second it was the "Invisible People" Consequences task used in Experiment 1. The tasks and all other experimental materials are displayed in Appendix 4.1. Both of these tasks have the virtue of appearing realistic in either role, that is, as creativity tests (which both are intended to be) or as persistence tasks. In addition, in Phase 1 subjects were asked to rate the difficulty of the task and to estimate how long they spent on it, and in Phase 2 these measures were repeated, and other rating scales were added. These related to enjoyment, performance and so on, the scales being as far as possible the same as those included in Experiment 3.

8.1.1.1.3 Dependent measures: (1) Number of distinctly different consequences produced in the Consequences task.

(2) Ratings of the Consequences task, and estimated time spent on the task.

(3) Number returned from each group (as is detailed in the Procedure section below, the experiment was conducted by mail, and letters were returned through the university's internal mail system).

8.1.1.1.4 Predictions: It was predicted that subjects in the persistence experimental (PE) group would produce more Consequences than those in the creativity experimental (CrE) group. On the basis of the preliminary results from Experiment 4, it was expected that there would be no difference between the creativity experimental group and the control groups. This prediction was based on the hypothesis that subjects in the PE group should perceive themselves as having the ability to choose to persist at the second task, but those in the CrE group would not regard it as within their choosing to be creative in response to praise after the initial task. On the basis of the results of Experiment 3, it was predicted that the experimental groups, certainly the PE group, would rate the second task differently when compared to the control groups. These results would be consistent with the work of Deci and others (Deci, 1975; Ryan, Mims and Koestner, 1983) on intrinsic motivation, and would probably be predicted by Canavan-Gumpert (1977) in terms of her work on reward-cost orientation. She found that a reward orientation induced in children by praise of task performance resulted in more positive affective reactions to that task performance. It was also thought that perhaps subjects in the PE group would estimate that they had spent longer on the task than would subjects in the other groups and that there might be more letters returned (see Procedure section below) from both experimental groups.

## **8.1.2 Method**

**8.1.2.1 Subjects:** Forty subjects enrolled in Psychology I in 1986 participated in both phases of the experiment (see Section 8.1.3.1). Their average age was 20.47 years (s.d.=6.01). There were 22 females and 18 males.

**8.1.2.2 Procedure:** It was decided to try an innovation in the usual experimental technique of having subjects come to the laboratory and do the tasks under the eye of the experimenter. An experiment by mail was undertaken. There were at least two good reasons why it was regarded as worth trying this technique. Firstly, the pool of potential participants in the study, namely those Psychology I students who had not returned a Self-Concept Questionnaire (Version 2) at the beginning of the year, had, by their inaction, indicated a certain unwillingness to be co-operative. It was hoped that the option of filling out and returning the form for some experimental time credit might prove more satisfactory to them than actually organizing themselves into turning up at the laboratory at a certain time. Secondly, it was decided that the logistics of running the study while completing Experiment 4 and beginning Experiment 5 was too complicated (it was regarded as desirable to complete most procedures early in the year so that potential subjects were still naive).

The procedure, then, was to write to subjects asking them to help the experimenter in selecting a task for a study to be undertaken the following year. They were asked to complete the enclosed task and to rate its difficulty. The letters for this phase are shown in Appendices 4.1.1 (creativity) and 4.1.3 (persistence). Having returned the initial form, respondents were then randomly assigned to a condition (Note: initially a random number program was used to assign subjects to groups, but subsequently numbers were equalized across groups, and the two genders were distributed equally, by means of a manual coin-tossing exercise). They then received a further letter thanking them and explaining that since the earlier task was unsuitable they were being asked to rate just one more task. These letters appear in Appendices 4.1.2 (creativity) and 4.1.4 (persistence). Appearing in the experimenter's handwriting at the end of the letter was a brief note. If the subject was in either experimental group, this note indicated that her/his earlier list of responses showed her/him to be a creative (or persistent) person. Control communications simply contained the information that both this task, and the previous one, were new tasks of creativity (or persistence).

The most obvious difficulty with this approach was the possibility that subjects would firstly, work together on the tasks, and secondly, communicate with each other in such a way as to find that quite a large number of them had received the same feedback, or that the tasks were being presented differently to different individuals. Given that even in a laboratory setting there can be no guarantee that subjects will not communicate between sessions, and given the large enrolment in Psychology I such that participation in this study was likely to be spread across groups of close associates, it was hoped that these

possibilities would be no more problematic than if it were a standard laboratory experiment. In fact, the experimenter contacted every subject by phone in an attempt to increase the second-round return rate and none mentioned having discovered this difference. A further problem in using the letter technique was the impossibility of extending it into a third phase (the number being returned by then would be too small), and previous results had indicated that two deliveries of the manipulation are necessary before there is an effect. However, it was hoped that the greater salience of the written message would overcome this problem.

### 8.1.2.3 Wording of Messages

(1) (CrE) "P.S. You might be interested to know that your responses indicate that you are a very creative person."

(2) (CrC) "P.S. You might be interested to know that the test you did, and this one, are new tests of creativity."

(3) (PE) "P.S. You might be interested to know that your responses indicate that you are a very persistent person."

(4) (PC) "P.S. You might be interested to know that the test you did, and this one, are new tests of persistence."

### 8.1.3 Results

8.1.3.1 Return Rate: Initially eighty of each type of letter were sent out. Twenty-seven "creativity" returns were received, and twenty-two "persistence" returns. This was regarded as a poor response rate considering that the study was being conducted within the university, and that respondents did not have to use the general mail to return their tasks.

The 49 potential subjects were assigned to their groups in the manner described above, with the result that fourteen received CrE treatment, thirteen CrC treatment, and 11 received each type of persistence treatment. Final group numbers after the second round of returns were CrE=12, CrC=11, PE=9 and PC=8. Results are described in two sections. Those in the first relate to analysis of data after the first round of letters (Phase 1 - two groups), while those in the second relate to analyses subsequent to treatments (Phase 2 - four groups).

Note: Despite the unequal group numbers, in order that no data be wasted, initially all subjects were included in all analyses. When these analyses were repeated after equalizing group numbers it was decided that such a course of action had not resulted in spurious interactions, and for this reason emphasis is given in the reporting of the results to the original unbalanced groups.

### 8.1.3.2 Results: Section 1 (Phase 1)

#### 8.1.3.2.1 Comparison of Creativity and Persistence Task Groups on Number of Interpretations Produced

There was no significant difference between the two groups in the number of interpretations produced in response to the Picture Interpretation task. Means and standard deviations are shown in Table 8.1.1.

**Table 8.1.1:** Means and standard deviations, by group, of the number of interpretations produced in response to the Picture Interpretation task.

Original letter	N	Mean	s.d.
<b>Creativity</b>	27	11.04	7.91
<b>Persistence</b>	22	10.73	7.91

#### 8.1.3.2.2 Comparison of Creativity and Persistence Task Groups on Difficulty Ratings

There was no significant difference between the groups in agreement with the statement "I found this task difficult". Means and standard deviations are shown in Table 8.1.2.

**Table 8.1.2:** Means and standard deviations, by group, of the degree of agreement with the statement about the Picture Interpretation task "I found this task difficult".

Original letter	N	Mean	s.d.
<b>Creativity</b>	27	3.41	1.58
<b>Persistence</b>	22	4.00	1.51

#### 8.1.3.2.3 Comparison of Creativity and Persistence Task Groups on Estimate of Time Spent on Task

There was no significant difference between the groups in their estimates of how long they spent on the Picture Interpretation task. Means (in minutes) and standard deviations are shown in Table 8.1.3.

**Table 8.1.3:** Means and standard deviations (in minutes), by group, of estimates of how long was spent on the Picture Interpretation task.

Original letter	N	Mean	s.d.
<b>Creativity</b>	27	17.56	8.94
<b>Persistence</b>	22	17.14	11.18

These results show that prior to the treatment in the second round of letters, the two groups were equivalent.

#### 8.1.3.2.4 Correlational Analysis

The three measures recorded at this first phase were intercorrelated. There were significant relationships between number of interpretations produced and estimated time spent ( $r=.337$ ,  $N=49$ ,  $p=.009$ ), and between agreement that the task was difficult and time spent ( $r=.475$ ,  $N=49$ ,  $p=.0001$ ). There was only a small relationship ( $r=-.167$ ) between number of interpretations and rated difficulty.

#### 8.1.3.3 Results: Section 2 (Phase 2)

##### 8.1.3.3.1 Comparison of Groups on Number of Consequences Produced

There was no significant difference among the four groups in number of consequences produced. Means and standard deviations of numbers produced are shown in Table 8.1.4.

**Table 8.1.4:** Means and standard deviations, by group, of number of consequences produced in response to the Consequences task.

Group	N	Mean	s.d.
1. Creativity Experimental	12	12.50	5.33
2. Creativity Control	11	10.27	4.54
3. Persistence Experimental	9	9.89	3.65
4. Persistence Control	8	11.50	7.46

##### 8.1.3.3.2 Comparison of Groups on Consequences Task Ratings

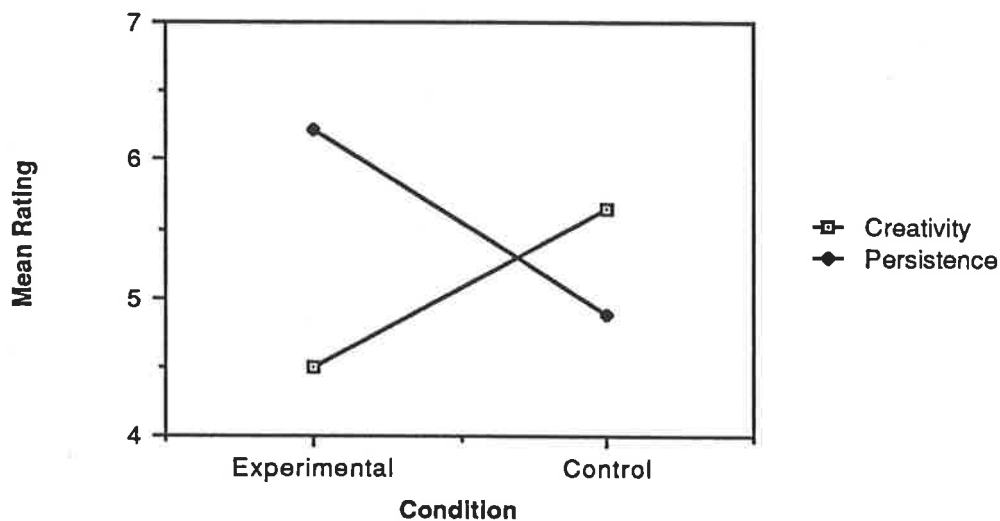
A series of 2 X 2 analyses of variance was carried out on the task ratings to determine whether these were affected by the experimental treatments. The factors in these analyses are termed "Letter", referring to whether a creativity or persistence letter was sent, and "Attribution", referring to whether a manipulation was or was not administered. A number of significant results emerged.

(1) "I enjoyed doing this task": Table 8.1.5 shows the results of the analysis of variance. There was a significant interaction between Letter (persistence or creativity) and Attribution (attribution of characteristic or control). Post-hoc comparisons showed that the Creativity Experimental group was significantly different from the Persistence Experimental group (Student-Newman-Keuls,  $p<.05$ ). Figure 8.1.1 is a graph of the group means.



**Table 8.1.5:** Results of analysis of variance comparing groups on their ratings of the Consequences task "I enjoyed doing this task".

Source of variation	SS	df	MS	F	p
Within cells	7.98	36	1.99		
Letter	2.25	1	2.25	1.13	0.296
Attribution	0.108	1	0.108	0.054	0.817
Letter X Attribution	15.03	1	15.03	7.52	0.009



**Figure 8.1.1:** Graph of means, by group, of ratings of the Consequences task "I enjoyed doing this task".

(2) "I think that other students would try hard at this task": Table 8.1.6 shows the means and standard deviations while the results of the analysis of variance are shown in Table 8.1.7.

**Table 8.1.6:** Means and standard deviations, by group, of ratings of the Consequences task "I think that other students would try hard at this task".

Group	N	Mean	s.d.
1. Creativity Experimental	12	4.08	1.16
2. Creativity Control	11	3.91	0.83
3. Persistence Experimental	9	5.22	1.20
4. Persistence Control	8	4.38	1.41

**Table 8.1.7:** Results of analysis of variance comparing groups on their ratings of the Consequences task "I think that other students would try hard at this task".

Source of variation	SS	df	MS	F	p
Within cells	47.26	36	1.31		
Letter	6.28	1	6.28	4.78	0.035
Attribution	2.54	1	2.54	1.94	0.173
Letter X Attribution	1.10	1	1.10	0.84	0.365

There is thus an interesting main effect of the type of letter received. Those who received a persistence letter, whatever the treatment condition, agreed to a greater extent than did those receiving a creativity letter that other students would try hard at the task. This is particularly interesting since "Other students would try hard while playing this game" was a variable which produced a significant "Condition by Experimenter" interaction in Experiment 2 on the dependent game, "Word Search" (that is, the Expectation and Control, experimenter present, groups and the Attribution, experimenter absent, group agreed with it to a similar extent; agreement was less than it was for all other groups).

(3) "I didn't feel like spending much time on this task": The means and standard deviations are displayed in Table 8.1.8, and the analysis of variance is set out in Table 8.1.9.

**Table 8.1.8:** Means and standard deviations, by group, of ratings of Consequences task "I didn't feel like spending much time on this task".

Group	N	Mean	s.d.
1. Creativity Experimental	12	3.08	2.11
2. Creativity Control	11	4.36	1.80
3. Persistence Experimental	9	2.33	1.41
4. Persistence Control	8	3.63	1.77

**Table 8.1.9:** Results of analysis of variance comparing groups on their ratings of the Consequences task "I didn't feel like spending much time on this task".

Source of variation	SS	df	MS	F	p
Within cells	119.34	36	3.31		
Letter	5.40	1	5.40	1.63	0.21
Attribution	16.12	1	16.12	4.86	0.034
Letter X Attribution	0.0003	1	0.0003	0.00009	0.992

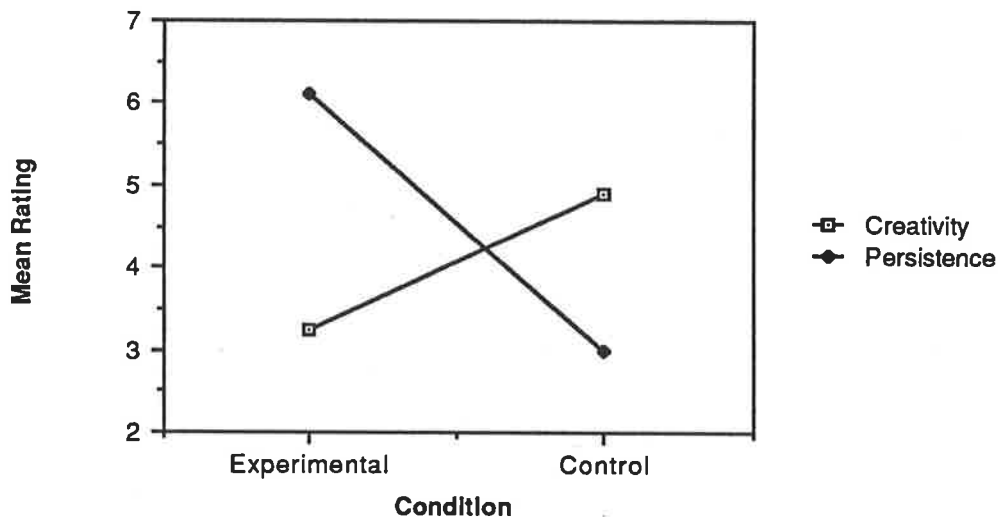
The only attribution main effect thus occurred on the variable "I didn't feel like spending much time on this task". Those receiving the experimental treatment agreed less than did controls that this was true of them. This is the same result as that found in Experiment 3 when the attribution group "wanted to keep playing (Word Search)" to a

greater degree than did the control group, and "only felt like playing (Word Search)" to a lesser degree.

(4) "I would like to do other similar tasks sometimes for recreation": Results are shown in Figure 8.1.2 and Table 8.1.10. A Student-Newman-Keuls post-hoc test showed that the CrE and PC groups were significantly different from the CrC and PE groups ( $p < .05$ ).

**Table 8.1.10:** Results of analysis of variance comparing groups on their ratings of the Consequences task "I would like to do other similar tasks sometimes for recreation".

Source of variation	SS	df	MS	F	p
Within cells	96.05	36	2.67		
Letter	2.21	1	2.21	0.83	0.369
Attribution	5.14	1	5.14	1.93	0.174
Letter X Attribution	55.45	1	55.45	20.78	0.0001

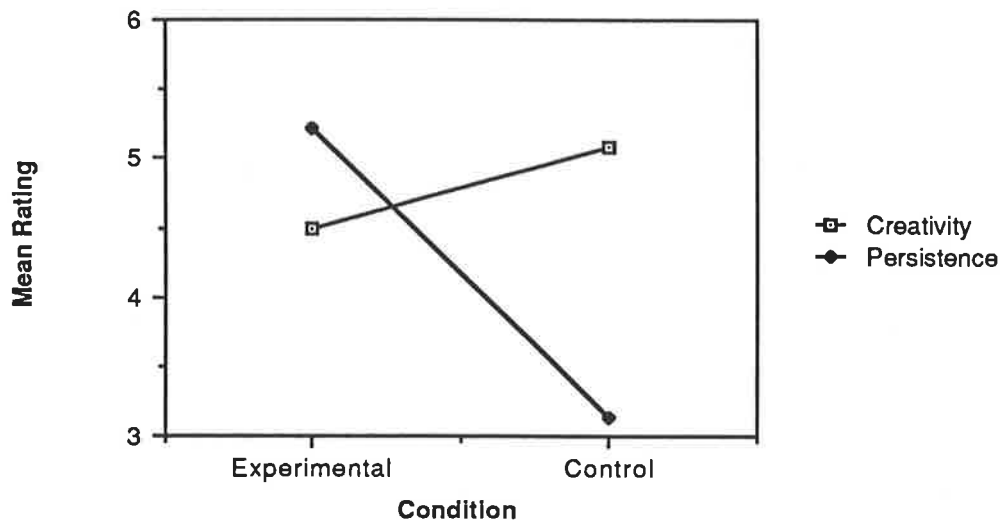


**Figure 8.1.2:** Graph of means, by group, of ratings of Consequences task "I would like to do other similar tasks sometimes for recreation".

(5) "I did well at this task": Figure 8.1.3 shows the means, while the results of the analysis of variance are shown in Table 8.1.11. The first three groups, CrE, CrC and PE, are significantly different from the PC group (Student-Newman-Keuls,  $p < .05$ ).

**Table 8.1.11:** Results of analysis of variance comparing groups on their ratings of the Consequences task "I did well at this task".

Source of variation	SS	df	MS	F	p
Within cells	66.34	36	1.84		
Letter	3.77	1	3.77	2.05	0.161
Attribution	5.53	1	5.53	3.00	0.092
Letter X Attribution	17.16	1	17.16	9.56	0.004



**Figure 8.1.3:** Graph of means, by group, of ratings of Consequences task "I did well at this task".

In summary, there was an interaction between type of letter received and treatment on three of the task rating variables. The CrE and PC groups apparently enjoyed the task less, would like to do similar tasks for recreation to a lesser extent, and felt that they had done less well than did the other groups. It seems from these results that an attribution of creativity produces a rather similar outcome in terms of attitude to the task as does a control message on a persistence letter. Because unequal numbers in cells in a multi-factor procedure can produce spurious significant interactions, some subjects were removed using a random procedure and the analyses were repeated with eight subjects per cell.

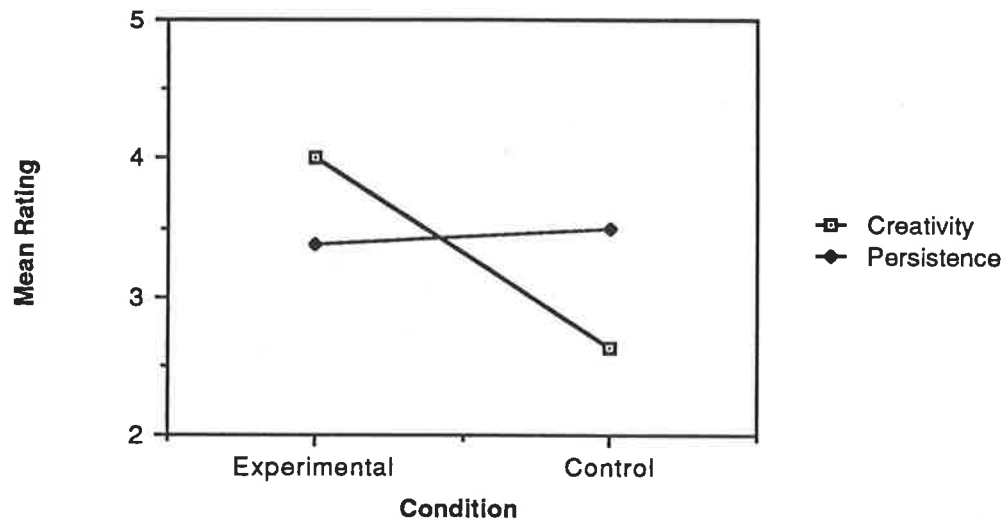
#### 8.1.3.3.3 Comparison of Groups on Consequences Task Ratings: Equalized Group Numbers

Repeating the analyses on the task ratings with equal numbers per group resulted in the disappearance of the attribution main effect reported above ("I didn't feel like spending much time on this task") and the appearance of two additional significant interactions. The letter main effect ("I think that other students would try hard at this task") and the interactions reported in the preceding section ("I enjoyed doing this task", "I would like to do other similar tasks sometimes for recreation", and "I did well at this task") were maintained. The two additional interactions are set out below. Subsequent inspection of the data incorporating the total sample showed that these two ratings did approach significance ("I think that other students would find this task boring", interaction  $F=3.29$ ,  $p=.078$ : "I think that other students would enjoy doing this task", interaction  $F=2.97$ ,  $p=.093$ ).

(1) "I think that other students would find this task boring": Figure 8.1.4 shows the means, while the results of the analysis of variance are shown in Table 8.1.12.

**Table 8.1.12:** Equalized group N's - Results of analysis of variance comparing groups on their ratings of the Consequences task "I think that other students would find this task boring".

Source of variation	SS	df	MS	F	p
Within cells	29.75	28	1.06		
Letter	0.125	1	0.125	0.12	0.734
Attribution	3.125	1	3.125	2.94	0.097
Letter X Attribution	4.50	1	4.50	4.24	0.049

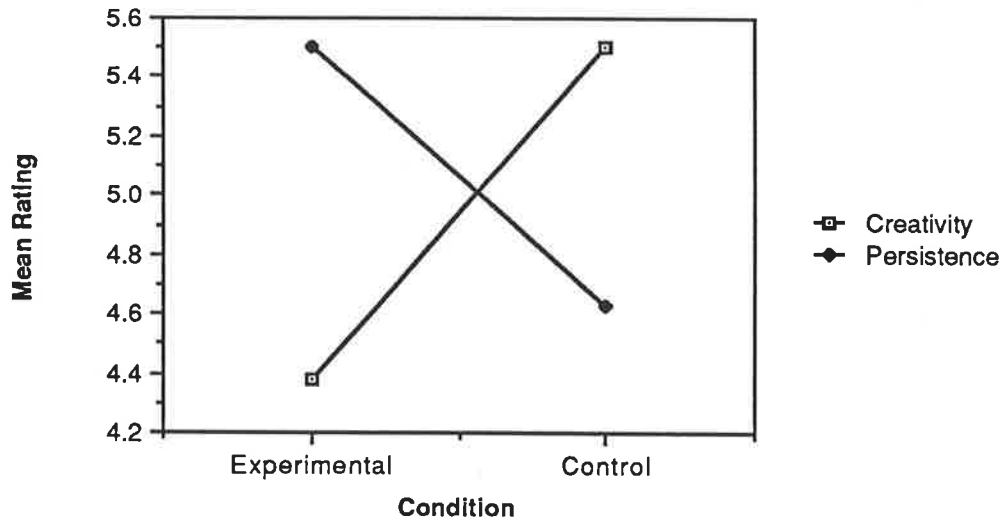


**Figure 8.1.4:** Equalized group N's - Graph of means, by group, of ratings of Consequences task "I think that other students would find this task boring".

(2) "I think that other students would enjoy doing this task": Table 8.1.13 and Figure 8.1.5 show the results for this variable.

**Table 8.1.13:** Equalized group N's - Results of analysis of variance comparing groups on their ratings of the Consequences task "I think that other students would enjoy doing this task".

Source of variation	SS	df	MS	F	p
Within cells	39.75	28	1.42		
Letter	0.13	1	0.13	0.088	0.769
Attribution	0.13	1	0.13	0.088	0.769
Letter X Attribution	8.00	1	8.00	5.64	0.025



**Figure 8.1.5:** Equalized group N's - Graph of means, by group, of ratings of Consequences task "I think that other students would enjoy doing this task".

The former interaction is not easy to interpret, and the means for the total sample are in the same rank order as they are in the random sample of eight. The latter interaction is in the same direction as those significant interactions reported above. That is, the CrE and PC groups are more similar than the CrC and PE groups which are in turn similar to each other (CrE mean=4.50, s.d.=1.73; CrC mean=5.36, s.d.=0.67; PE mean=5.22, s.d.=1.39; PC mean=4.63, s.d.=1.19).

It can be concluded from these analyses that the significant effects found are not artifacts of the analysis but do actually reflect the effects of the treatment upon the subjects. It is, however, rather difficult to understand why the interactions should so consistently show that the CrE and PC groups are similar in their ratings as are the CrC and PE groups. This issue will be taken up in the Discussion.

#### 8.1.3.3.4 Comparison of Groups on Estimated Time Spent on Consequences Task

There was no significant difference among groups in their estimates of time spent on the Consequences task.

#### 8.1.3.3.5 Comparison of Groups on Number of Returns

There was no significant difference among groups in the number of returns received by the researcher. Given the initial poor return rate, the 40/49 received on the second round was pleasing: it suggests that personal appeals and reminders can increase return rate in this type of study.

#### 8.1.3.3.6 Correlational Analysis - Consequences Task

As was done for the Picture Interpretation task, correlations were calculated between number of consequences (interpretations) produced and estimated time spent, between time spent and rated difficulty, and between number produced and difficulty. Table 8.1.14

shows the two sets of correlations; these indicate that the tasks do not behave in the same way on these variables. For the Picture Interpretation task N is 49, while for the Consequences task N is 40.

**Table 8.1.14:** Intercorrelations of task variables - Picture Interpretation task compared to Consequences task.

Relationship	Interpretation	Consequences
Number produced/Time	0.377**	0.133
Time/Difficulty	0.475***	0.195
Number produced/Difficulty	-0.167	-0.318*

\* =  $p < .05$

\*\* =  $p < .01$

\*\*\* =  $p < .0001$

Number of consequences produced, and estimated time spent, were also correlated with all other task rating variables, and all task rating variables were intercorrelated (see Section 8.1.3.3.7 below for an interpretation of these results). Number of consequences produced correlated significantly with "I enjoyed doing this task" ( $r = .272$ ,  $N = 40$ ,  $p = .045$ ), and with "I did well at this task" ( $r = .349$ ,  $N = 40$ ,  $p = .014$ ). Estimated time spent correlated significantly with "I didn't feel like spending much time on this task" ( $r = -.30$ ,  $N = 40$ ,  $p = .03$ ), with "I felt tense while I was doing this task" ( $r = .369$ ,  $N = 40$ ,  $p = .01$ ), and with "I tried hard at this task" ( $r = .332$ ,  $N = 40$ ,  $p = .018$ ).

#### 8.1.3.3.7 Factor Analysis of Task Rating Variables

A principal components factor analysis with varimax rotation resulted in three interpretable factors from the Consequences task rating correlation matrix. Together these factors accounted for 66.7 percent of the variance (see Table 8.1.15).

**Table 8.1.15:** Results of factor analysis of task rating variables, Consequences task.

Factor	Eigenvalue	% of variance	Cum. %
1	4.93	41.1	41.1
2	1.91	15.9	57.1
3	1.58	9.7	66.7

The rotated factor matrix shows the loadings of each item on the three factors. Factor 1 could be interpreted as a "feel serious" factor, factor 2 as a "feel positive" factor, and factor 3 as a "feel negative" factor. Factor scores were calculated and correlated with number of consequences produced. There was a significant correlation between the "feel positive" factor and number produced ( $r = .328$ ,  $N = 40$ ,  $p = .019$ ). The items and their factor loadings are displayed in Table 8.1.16.

**Table 8.1.16:** Loadings of Consequences task rating items on factors.

Factor/ Item	1	2	3
I tried hard at this task	.869		
I cared how well I did at this task	.868		
It was important to me to do this task well	.859		
I didn't feel like spending much time on this task	-.782		
I enjoyed doing this task	.339	.815	
I think that other students would enjoy doing this task		.785	
I did well at this task		.766	
I found this task difficult		-.688	
I would like to do other similar tasks sometimes for recreation	.384	.571	
I think that other students would try hard at this task		.395	.687
I think that other students would find this task boring		-.319	.672
I felt tense while I was doing this task	.372	-.352	.368

#### **8.1.4 Discussion**

It was hoped that the results of Experiment 6 would lend support to the hypothesis that the role of the "behaviour choice" variable was credible as an explanation for the failure to find significant results in Experiment 4. The results of Experiment 6 were not as predicted, but there are a number of possible reasons to account for the lack of effect. Firstly, of course, the experimental procedure was not ideal, given that the experiment was conducted by mail. Secondly, only one manipulation was able to be delivered. Thirdly, while it may not be within an individual's choosing to be "creative" at will, it is possible that "persistence" could be substituted for creativity in a situation in which creativity was apparently called for. This would account for the failure to find a difference between the two types of letter (creativity or persistence), although not for the lack of difference between the two messages (attribution or control).

Although the major predictions were not confirmed, the experimental results were not without interest. Of particular interest are the series of interactions between type of letter and type of message in relation to the task ratings. It could be argued that the manipulation was having an effect but that it was a different effect depending on the type of task the subject believed her/himself to be doing. It is probably true in our society that being creative and being persistent are not equally valued characteristics. That is, because it is a highly valued characteristic, being told one is creative might well result in feelings of anxiety such that one does not enjoy the task, does not think one did well at the task, and so on. Certainly Amabile (1979) has found that creativity is negatively affected when subjects are told that their work will be evaluated. Being told one is persistent, on the other hand, may leave the individual open to enjoying the task and judging that s/he has done well at it if "persistence" is not such a valued characteristic or one that is important to the idea of self. Indeed, it may



be that the differential "choosability" of the two characteristics, which was the basis of their selection for comparison in this study, led to the observed effects. That is, the attribution of a positive and "high choice" characteristic like creativity might set off a more complex mediating process than the attribution of a less valued "low choice" characteristic like persistence.

Similarly, receiving the control message on the creativity task might simply have enhanced interest in the task without affecting the individual's reactions to it in either a positive or a negative direction. The PC group, because it was in the "least favoured" condition, in doing a task apparently to measure an unimportant characteristic and receiving an impersonal message, might have felt less enthusiastic than did the CrC and PE groups. At any rate, it seemed in retrospect that another dimension on which the attributes should have been equated was social desirability. It was not enough to select creativity and persistence simply because they could be (ostensibly) measured with the same tools. To test these intuitive evaluations of the characteristics "persistence" and "creativity" a small questionnaire was devised, the "Characteristics Rating Questionnaire", and this is discussed in Part 3 of this chapter.

The interaction results might be interpreted as lending further support to the idea raised after considering the results of Experiment 2, that the effect of attributional praise depends on the context in which it is received. In the case of Experiment 2, the informational/controlling dimension of variation in praise proposed by Deci (e.g., 1975) and Ryan, Mims and Koestner (1983) was raised as a possible explanatory variable, although it was concluded that it did not obviously account for the observed interactions, partly because of the shifting pattern from the first to the second manipulation (the same pattern was found, more clearly, in Experiment 3, which is discussed in Chapter 9 Part 1). Similarly, it is difficult to account for the crossover effects observed in Experiment 6 in these terms, since that would entail arguing that the attribution of "creative" was perceived as more controlling than the attribution of "persistent". Unless, as a matter of fact, in the attribution of "low choice" characteristics the controlling aspect tends to be more salient, whereas in the "high choice" situation the informational aspect tends to be more salient, another explanation must be sought. This issue is elucidated by the results of the questionnaire study reported in the third section of this chapter.

Another possible explanation relates to the credibility/deservingness dimension of Kanouse et al (1981). They argue that praise which is not considered to be deserved will not act as an incentive for behaviour. Certainly children are likely to interpret praise according to its credibility (e.g., Dweck et al, 1978). Perhaps the two attributions were differentially credible in the context of the experiment, or in relation to subjects' previous self-conceptions.

In relation to the task-rating differences it is interesting that there were no differences among the groups in feelings of tension while completing the task. This is in contrast to the

results of Experiment 2 in which treatments produced differential ratings among groups on this variable. In Experiment 2 the dependent game, "Word Search", induced more tension in subjects in the Expectation, experimenter present, Control, experimenter present, and Attribution, experimenter absent groups relative to the other three groups (interaction  $F=3.1$ ,  $p=.053$ ). On the other hand, subjects in the Attribution group rated themselves as feeling more tense while playing the game immediately after the first manipulation than did subjects in the Expectation or Control groups. Perhaps such differences might have been observed again had this been a laboratory experiment rather than a "takeaway" study, in which feelings of tension in all groups would have been minimal anyway (mean agreement with "I felt tense" =1.70, s.d.=1.07 in this study, cf. mean=2.40, s.d.=1.49 (Game 2) and mean=2.97, s.d.=1.63 (Game 3) in Experiment 2).

It may be noted here that the task rating variables which showed differences among groups in this study are similar to, or the same as, those on which differences were found in Experiment 3 (see Chapter 9 Part 1). In that experiment, after one manipulation, there were significant differences on "I thought I would do well", "I cared very much how well I did", and "I played this game well", all in the direction that the experimental group (attribution) agreed to a lesser extent than did the control group. In the present study, the CrE group acted, in terms of its ratings of "I did well at this task", like the experimental group in the earlier study, while the PE group did not. This is problematic since "persistence" was the attributed characteristic in Experiment 3. After two manipulations, subjects in the experimental group in Experiment 3 agreed to a greater extent than did those in the control group that they would like to play the game for recreation, that they enjoyed playing the game, and that they wanted to keep playing. In this study (after one manipulation, of course) the PE and CrC groups agreed more with "I enjoyed doing this task" and "I would like to do other similar tasks sometimes for recreation" than did the other two groups. In this case, subjects in the PE group (and those in the CrC group) were behaving like those in the experimental group in the earlier study.

The results of the study, because of the flaws in the procedure, do not negate the possible importance of the "behaviour choice" dimension. A questionnaire technique was considered to be a complementary strategy for accessing any perceived differences among a range of characteristics, abilities and behavioural propensities. A "Behaviour Rating Questionnaire", described in Part 2 of this chapter, was designed to investigate the dimension further in the absence of positive experimental results. Experiment 8, which was described in the previous chapter, was also designed in this context; it was a replication of the design of Experiment 4, but using a "high choice" characteristic as compared to the "low choice" one used in the latter study.

## PART 2

### BEHAVIOUR RATING QUESTIONNAIRE STUDY

#### 8.2.1 Introduction

Concurrent with the devising of Experiment 6, a questionnaire study was planned to further explore the "behaviour choice" dimension. It was hoped in this way to determine whether respondents did discriminate among a range of behaviours and person characteristics as to their ability to display them "at will". As was suggested previously, when individuals estimate their likely degree of success at a task, they add their motivational level into the equation (e.g., Manning and Wright, 1983), and thus motivation and choice are interdependent in the sense that increased incentive or strong motivation can in principle have no effect on the likelihood that a behaviour will occur if the individual believes that behaviour is not within her/his choosing.

A distinction was made between two kinds of behavioural task, one being what might loosely be termed ability or skill-type tasks, and the other being tasks which are simply behaviours or which reflect behavioural propensities. Kirsch's (1982) examples well illustrate the distinction. He compared the tasks of snake-handling, an example of the latter category, with tossing a wad of paper into a bin from 50 feet, an example of the former.

A questionnaire was devised in which respondents were asked to consider a variety of items according to whether they felt that doing the behaviour, or displaying the characteristic, was simply a matter of motivation, of wanting to enough. The aim of the behaviour rating study was to determine whether the distinction between "abilities" and "behavioural propensities" could be demonstrated in differential ratings of items, given that both categories were represented in the questionnaire.

8.2.1.1 Instrument: The Behaviour Rating Questionnaire appears in Appendix 4.2.

Respondents were asked to rate their agreement on a 7-point scale with the statement "The ability to do this is simply a matter of having enough motivation, of wanting to enough". This was regarded as a form of wording which would separate items which were simply a matter of choice from those which, regardless of the level of motivation, might not be just a matter of deciding to do them.

#### 8.2.2 Respondents and Procedure

Seventy student nurses attending a Physiology course at the South Australian College of Advanced Education (Sturt Campus) completed the questionnaire at the beginning of one of their practical sessions. The decision to participate in the study was a voluntary one, but no student refused to do so. There were 63 females and 6 males (one missing value). Their average age was 22.03 years (s.d.=7.27 years).

### 8.2.3 Results

#### 8.2.3.1 Item-by-Item Means and Standard Deviations

Table 8.2.1 shows the item-by-item means and standard deviations (except where otherwise specified, N=70).

**Table 8.2.1: Means and standard deviations of individual items in the Behaviour Rating Questionnaire.**

Item	Mean	s. d.
A1. do well on a spelling test appropriate for one's age level	4.66	1.68
B2. vote in an election (if one is of voting age and voting is not compulsory) (N=69)	5.78	1.66
A*3. be a generally healthy person	5.94	1.25
A4. be creative when one is asked to do a picture interpretation task one has never seen before	3.73	1.75
B5. move closer to an object one really fears	4.46	1.86
A6. be an intelligent person	3.84	1.87
B7. persist at a tricky problem even when one is frustrated by it (N=69)	5.81	1.18
B*8. say positive things to oneself	5.39	1.55
A9. be good at maths	3.90	1.69
B*10. do regular exercise	6.21	1.26
A11. be a good judge of other people	3.69	0.57
B12. persist at a new problem even when one has run out of ideas (N=68)	5.13	1.59
B13. sort cards accurately in a psychology experiment (N=69)	3.71	1.69
B14. co-operate with others on a game (N=69)	5.67	1.54
B*15. maintain one's ideal body weight (N=69)	5.57	1.37
B16. treat other people with kindness (N=69)	5.48	1.96
B17. share something one really wants with another person (N=68)	5.68	1.54
B18. be a generally persistent person (N=69)	5.35	1.39
A19. accurately rank a group of people according to their artistic talent after seeing (no sound) them briefly on video or hearing them briefly on tape	3.03	1.66
B20. throw litter in a bin rather than on the ground	5.83	1.75
B*21. be a non-smoker (N=69)	6.01	1.61
B22. make a small donation to a worthy cause	5.17	1.86
B23. eat a worm	4.46	2.48
A24. make confident judgments about a range of characteristics of people seen and heard briefly on video	3.27	1.52
A*25. cut down on stress in one's life	4.93	1.61
B*26. eat mainly nutritious food	5.91	1.18
B27. be patient when one has to do a boring and repetitious task	5.23	1.44
A28. accurately throw a wad of paper into a waste-basket from 50 feet	3.37	1.86
B29. look for the good characteristics in another person	5.39	1.59
B*30. take medicine or tablets prescribed by a doctor	5.71	1.50

**Notes:** Items marked "A" were those judged a priori to be ability or skill-type items, and those marked "B" to be behaviour or behavioural propensity-type items. Those marked \* were considered to be health items.

### 8.2.3.2 Comparison of Ability Items with Behavioural Propensity Items, and Health Items with Non-Health Items

A 2-way repeated measures analysis of variance was carried out comparing ability with behaviour items, and health with non-health items. There was a significant difference between the means of the ability and behaviour items ( $F=166.59$ ,  $df=1/69$ ,  $p=.0001$ ). As the means in Table 8.2.2 show, the behaviour items were seen as being more a matter of motivation, of wanting to enough, than were the ability items (ability mean=4.03; behaviour mean=5.41). There was also a significant difference between the means of the health and the non-health items ( $F=59.39$ ,  $df=1/69$ ,  $p=.0001$ ); respondents saw health items as being more a matter of motivation, of wanting to enough, relative to non-health items (health mean=5.71; non-health mean=4.67).

**Table 8.2.2:** Means of items comprising the ability/behaviour and health/non-health groups.

Item Category	Ability	Behaviour	Total Mean
Health	5.44	5.80	5.71
	(n=2)	(n=6)	(n=8)
Non-health	3.69	5.23	4.67
	(n=8)	(n=14)	(n=22)
<b>Total Mean</b>	<b>4.03</b>	<b>5.40</b>	<b>4.95</b>
	(n=10)	(n=20)	(N=30)

There was also a significant interaction between the two dimensions ( $F=51.99$ ,  $df=1/69$ ,  $p=.0001$ ). While the behaviour non-health items were seen as being considerably more a matter of motivation than were the ability non-health items, the equivalent discrimination was not made in relation to the health items.

The means of the two health items in the ability group ("be a generally healthy person" and "cut down on stress in one's life") were high despite their initial selection as being unlikely to be affected by motivation. Indeed one of them ("be a generally healthy person") had the third highest mean score of the thirty items (mean=5.94). Given that the sample of ability health items is small, the statistical result should be regarded as preliminary. Intuitively, however, the two items in question appear to be very similar to the ability items in the non-health group in terms of the likelihood that one would feel able to choose to do them "at will", given sufficient motivation.

This finding regarding health items is an interesting one in view of the difficulty people appear to have in initiating and maintaining any change in their health behaviour. In this context it is also worth noting that some differences between means among pairs of health items (see Table 8.2.1) might be regarded as counter-intuitive by practitioners involved in behaviour change programmes. For example, "do regular exercise" was seen as

being more a matter of wanting to enough than was "say positive things to oneself" ("do regular exercise" mean=6.21; "say positive things to oneself" mean=5.39). It was also seen as more a matter of wanting to enough than was "take medicine or tablets prescribed by a doctor" (mean=5.71).

### 8.2.3.3 Comparisons between Individual Items

Individual items relating to specific experiments were compared.

(1) "Be a good judge of other people" and "Look for the good characteristics in another person" (Experiment 8): There was a significant difference between the means on these two items, in the direction that the latter was seen as more a matter of motivation, of wanting to enough, was more "choosable" than the former. The results are shown in Table 8.2.3.

**Table 8.2.3:** Results of t-test comparing means of individual items "Be a good judge...." and "Look for the good ....".

Item (abbreviated)	Mean	s.d.	t	df	p
Be a good judge	3.68	1.56	-7.55	69	0.0001
Look for good characteristics	5.38	1.59			

(2) "Accurately rank a group of people according to their artistic talent after seeing (no sound) them briefly on video or hearing them briefly on tape" and "Look for the good characteristics in another person" (Experiments 4 and 8): The difference between the means of these two person perception items was also significant in the expected direction, namely that the latter variable had a higher "choosability" score. Table 8.2.4 shows the results.

**Table 8.2.4:** Results of t-test comparing means of individual items "Accurately rank a group of people according to their artistic talent" and "Look for the good....".

Item (abbreviated)	Mean	s.d.	t	df	p
Rank people according to artistic talent	3.03	1.66	-8.99	69	0.0001
Look for good characteristics	5.39	1.59			

(3) "Make confident judgments about a range of characteristics of people seen and heard briefly on video" and "Look for the good characteristics in another person" (Experiment 8): The difference between the means of these items relevant to Experiment 8 was also significant in the expected direction (see Table 8.2.5).

**Table 8.2.5:** Results of t-test comparing means of individual items "Make confident judgments about a range of characteristics...." and "Look for the good....".

Item (abbreviated)	Mean	s.d.	t	df	p
Make confident judgments	3.27	1.52	-8.1	69	0.0001
Look for good characteristics	5.38	1.59			

(4) "Be creative when one is asked to do a picture interpretation task one has never seen before" and "Persist at a new problem even when one has run out of ideas" (Experiment 6): A t-test comparing the means of the two items relating to persistence and creativity was significant. Persistence was rated as being more a matter of motivation than was creativity. Again this result is in the predicted direction. Table 8.2.6 shows the results.

**Table 8.2.6:** Results of t-test comparing means of individual items "Be creative...." and "Persist at a new problem....".

Item (abbreviated)	Mean	s.d.	t	df	p
Be creative	3.73	1.76	-5.25	67	0.0001
Persist at a new problem	5.13	1.59			

(5) "Be creative when one is asked to do a picture interpretation task one has never seen before" and "Persist at a tricky problem even when one is frustrated by it" (Experiment 6): Once again the result is as would be expected if the "choosability" idea has validity. Table 8.2.7 shows the results.

**Table 8.2.7:** Results of t-test comparing means of individual items "Be creative...." and "Persist at a tricky problem....".

Item (abbreviated)	Mean	s.d.	t	df	p
Be creative	3.71	1.76	-8.04	68	0.0001
Persist at a tricky problem	5.81	1.18			

### **8.2.4 Discussion**

The results of this questionnaire study provided support for the distinction between "ability" and "behavioural propensity" characteristics, attributes, or behaviours, which was made on intuitive grounds and with reference to Kirsch's (1982, 1985) work. It does seem that the categorization into these two groups is not idiosyncratic. That is, respondents agree that, for the latter group of items, being able to do the behaviour or display the characteristic is, relatively speaking, simply a matter of wanting to enough. For the former group of items, having the motivation or desire to do the behaviour or display the characteristic may not be enough. This can be interpreted in the terms initially discussed as meaning that one is less able to choose to do a behaviour or display a characteristic from the "ability" group as from the "behavioural propensity" group.

It is beyond the scope of this chapter to pursue the issue, but it could be noted that the result of the comparison of health and non-health items has important implications for health educators and other professionals. It suggests that engaging in health behaviours is seen as simply a matter of having enough motivation, of wanting to enough. Although of course the perception may not be veridical, individuals apparently see themselves as having the choice

to be healthy, or to engage in a range of health-oriented behaviours, if their desire to do so is strong enough.

Although the ability/behaviour distinction had now been supported empirically, results from a further study (see Part 3) showed that the issue was a multifaceted one, and that the "choosability" model which had been advanced was too simplistic and could not completely account for observed differences in behaviour in response to praise of a given characteristic.



**PART 3**  
**CHARACTERISTICS RATING QUESTIONNAIRE STUDY**

**8.3.1 Introduction**

When the predicted results were not found in Experiment 6, it was hypothesized that the characteristics attributed might have differed on dimensions other than "choosability". Specifically, the dimension of social desirability was considered. Now that the characteristics concerned, "persistence" and "creativity", had been shown to be significantly different on the motivation/choosability dimension, it was decided to further explore some other dimensions of variation. It was hoped, at the same time, to determine whether there were notable differences between the characteristic relevant to Experiment 4 ("perceptive about the artistic talent of another person") and the one being considered for use in Experiment 8 ("looks for the good characteristics in another person"). These had been shown in the Behaviour Rating Study to differ along the dimension of choosability.

Five dimensions were investigated. These were the following: self-rating on the characteristic, importance of the characteristic to one's self-concept (the conjunction of these two variables discriminates Markus' (e.g., 1977) schematics - the "self-description" criterion was not used at this point because of the rating scale format of the questionnaire), the desirability of the characteristic, whether one would feel pleased to have the characteristic attributed, and whether such an attribution would give rise to the suspicion that an attempt was being made to affect one's behaviour.

**8.3.1.1 The Questionnaire:** The "Characteristics Rating Questionnaire" appears in Appendix 4.3. Eight characteristics were included for evaluation along the five dimensions. These were "kind", "good at making first impression judgments about another person's artistic ability", "looks for the good characteristics in another person", "perceptive", "intelligent", "persistent", "creative" and "neat and tidy". As far as possible these characteristics duplicated those appearing in the Behaviour Rating Questionnaire, and this was managed reasonably successfully, except in the case of "neat and tidy" which was specified as "throw litter in a bin rather than on the ground" in that questionnaire. It was considered unreasonable to include a characteristic expressed in those terms. The introductory section of the questionnaire contained an explanation of each of the five concepts, in the order listed above, but the order of type of evaluation and characteristics was randomized in the questionnaire. This procedure minimized the possibility that respondents would form a hypothesis about the expected relationship among the judgments they were making.

**8.3.2 Respondents and Procedure**

Eighty-two social work students enrolled in an introductory psychology course at the South Australian Institute of Technology completed the questionnaire at the beginning of a

tutorial session. Their participation was voluntary. There were 23 males and 57 females (two missing values). At 30.42 years (s.d.= 9.25 years, range=18.25 to 51.50 years), the average age of the respondents was slightly higher than that of respondents to other questionnaire studies reported in this thesis. However there is no prima facie reason to expect that responses to such a questionnaire would change with age past the age of about twenty years.

### **8.3.3 Results**

Means and standard deviations were calculated for all characteristics on every dimension. These are set out in Table 8.3.1. Within each characteristic, the five rating dimensions were intercorrelated. These matrices are set out as appropriate under each section of the Results.

**Table 8.3.1:** Means and standard deviations for all characteristics on every dimension.

Rating dimension/ Characteristic	Self-rating		Importance		Desirability		Pleased If Attributed		Trying to Affect Behr.	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
1. Perceptive	8.44	1.68	8.70	1.61	9.05	2.11	8.35	2.08	3.56	2.10
2. Artistic perceptive	6.27	2.65	4.96	2.58	5.59	2.74	6.62	2.62	4.20	2.49
3. Looks for good	8.48	1.70	8.29	2.03	8.33	2.21	8.54	2.13	4.31	2.71
4. Persistent	7.45	2.38	6.85	2.71	7.08	2.95	6.78	2.78	4.59	2.59
5. Creative	7.23	2.39	8.05	2.19	8.52	2.54	8.31	2.14	4.18	2.57
6. Kind	8.79	1.24	8.83	1.96	8.83	2.19	9.21	1.49	4.11	2.72
7. Intelligent	8.60	1.47	9.13	1.69	9.32	1.89	9.22	1.79	4.19	2.41
8. Neat and tidy	6.93	2.91	7.48	2.53	6.93	2.91	7.05	2.77	4.28	2.72

#### **8.3.3.1 Comparison of "Persistent" and "Creative"**

"Persistent" and "creative" appear in Table 8.3.1 in rows 4 and 5 respectively. T-tests were done comparing these two characteristics on the five rating dimensions. They were significantly different on importance to the self-concept ( $t=3.04$ ,  $df=81$ ,  $p=.003$ ), on desirability ( $t=3.94$ ,  $df=81$ ,  $p=.0001$ ), and on pleased if attributed ( $t=4.15$ ,  $df=81$ ,  $p=.00001$ ).

The matrix of intercorrelations for "persistent" is shown as Table 8.3.2. Table 8.3.3 shows the same information for "creative". In these tables, as in all subsequent matrices of intercorrelations,  $*=p<.05$ ,  $**=p<.01$  and  $***=p<.001$ .

**Table 8.3.2:** Matrix of intercorrelations between the five rating dimensions for "persistent".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.748***			
Desirability	.659***	.778***		
Pleased if Attributed	.572***	.648***	.792***	
Trying to Affect Behaviour	-.092	.065	.056	-.036

**Table 8.3.3:** Matrix of intercorrelations between the five rating dimensions for "creative".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.738***			
Desirability	.501***	.378***		
Pleased if Attributed	.635***	.462***	.553***	
Trying to Affect Behaviour	-.269**	-.166	-.134	-.279**

The pattern of intercorrelations was very similar within the two characteristics, except that in the case of "creative", the correlation between self-rating and trying to affect behaviour was large enough to be significant while it was negligible for "persistent". There was also a larger correlation for the former characteristic than for the latter between pleased if attributed and trying to affect behaviour.

It seems from these results that the characteristics "persistent" and "creative" differ on dimensions other than "choosability". It is also not immediately obvious which dimension, if any, might explain the different pattern of interactions found in Experiment 6 when these two characteristics were compared.

### 8.3.3.2 Comparison of "Good at making first impression judgments about another person's artistic abilities" and "Looks for the good characteristics in another person"

Descriptive statistics for these two characteristics appear in rows 2 and 3 respectively in Table 8.3.1. Significance tests between the sets of means showed that on only one dimension, trying to affect behaviour, was there not a difference between the characteristics. They were significantly different on self-rating ( $t=-6.64$ ,  $df=81$ ,  $p=.0001$ ), on importance to the self-concept ( $t=-9.35$ ,  $df=81$ ,  $p=.0001$ ), on desirability ( $t=-7.48$ ,  $df=81$ ,  $p=.0001$ ) and on pleased if attributed ( $t=-6.27$ ,  $df=81$ ,  $p=.0001$ ).

Tables 8.3.4 and 8.3.5 show the pattern of intercorrelations for "looks for the good" and "artistic perceptive" respectively. These, although very similar on the first four dimensions, also differ on the fifth, as was the case for "persistent" and "creative".

**Table 8.3.4:** Matrix of intercorrelations between the five rating dimensions for "looks for the good....".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.453***			
Desirability	.421***	.632***		
Pleased if Attributed	.377***	.549***	.709***	
Trying to Affect Behaviour	-.016	-.060	-.054	-.175

**Table 8.3.5:** Matrix of intercorrelations between the five rating dimensions for "artistic perceptive".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.677***			
Desirability	.241*	.375***		
Pleased if Attributed	.406***	.511***	.404***	
Trying to Affect Behaviour	-.222*	-.113	.097	-.196*

The differences between these two characteristics is discussed in greater detail below (see Discussion).

### 8.3.3.3 Comparison of "Perceptive" and "Looks for the good characteristics in another person"

The means and standard deviations of these two characteristics are shown in rows 1 and 3 of Table 8.3.1. T-tests revealed no significant differences between the two on self-rating, importance or pleased if attributed. There was a significant difference on desirability ( $t=-6.27$ ,  $df=81$ ,  $p=.0001$ ) and on trying to affect behaviour ( $t=-2.55$ ,  $df=81$ ,  $p=.013$ ).

Table 8.3.6 shows the pattern of intercorrelations between the five rating dimensions for "perceptive".

**Table 8.3.6:** Matrix of intercorrelations between the five rating dimensions for "perceptive".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.471***			
Desirability	.190*	.342**		
Pleased if Attributed	.292**	.543***	.513***	
Trying to Affect Behaviour	-.277**	-.186	-.118	-.185*

This table may be compared with Table 8.3.5 above. Once again there were significant, and moderately high, correlations between most variables on both characteristics, but the relationships with trying to affect behaviour were negative.

### 8.3.3.4 Intercorrelations between Dimensions on Remaining Characteristics

For each other variable the five dimensions were intercorrelated to determine whether the same pattern of relationships obtained in general for all characteristics. The matrix for "kind" is shown in Table 8.3.7, for "intelligent" in Table 8.3.8, and for "neat and tidy" in Table 8.3.9.

**Table 8.3.7:** Matrix of intercorrelations between the five rating dimensions for "kind".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.497***			
Desirability	.191*	.573***		
Pleased if Attributed	.118	.471***	.573***	
Trying to Affect Behaviour	.044	-.131	-.234*	-.457***

**Table 8.3.8:** Matrix of intercorrelations for the five rating dimensions for "intelligent".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.489***			
Desirability	.345**	.482***		
Pleased if Attributed	.339**	.471***	.316**	
Trying to Affect Behaviour	-.239*	-.209*	.038	-.359***

**Table 8.3.9:** Matrix of intercorrelations for the five rating dimensions for "neat and tidy".

Dimension	Self-rating	Importance	Desirability	Pleased if Attributed
Self-rating				
Importance	.825***			
Desirability	.586***	.608***		
Pleased if Attributed	.596***	.583***	.623***	
Trying to Affect Behaviour	-.291**	-.328**	-.295**	-.283**

When all eight matrices are examined it can be seen that there was a high degree of intercorrelation between variables within each characteristic, although the sizes of these relationships did vary. For example, the relationship between self-rating and importance was smaller for "intelligent", "kind", "perceptive" and "artistic perceptive" than it was for the other variables. The strength of the relationship between self-rating and trying to affect behaviour also varied between characteristics (compare "kind" and "perceptive" for example). It was nevertheless decided to determine whether there was a factor structure underlying the observed patterns.

### 8.3.3.5 Intercorrelation of Means of the Rating Dimensions, including Choosability, and Factor Analysis of Rating Dimensions

The means set out in Table 8.3.1 were intercorrelated. A further row and column were added to the matrix by referring to data from the Behaviour Rating Questionnaire study. This was possible since there was a closely parallel item in that study for each characteristic rated in the present study. Table 8.3.10 shows the relevant items and the means and standard deviations from the other study.

**Table 8.3.10:** Means and standard deviations of comparison items from Behaviour Rating Questionnaire study.

Behaviour Rating Item	Behaviour Rating	
	Mean	s.d.
11. be a good judge of other people	3.69	0.57
19. accurately rank a group of people according to their artistic talent after seeing (no sound) them briefly on video or hearing them briefly on tape	3.03	1.66
29. look for the good characteristics in another person	5.39	1.59
18. be a generally persistent person	5.25	1.39
4. be creative when one is asked to do a picture interpretation task one has never seen before	3.73	1.75
16. treat other people with kindness	5.48	1.96
6. be an intelligent person	3.84	1.87
20. throw litter in a bin rather than on the ground	5.83	1.75

As has already been mentioned, the last item, "neat and tidy", only tenuously lines up with that in the Behaviour Rating Questionnaire study, although it could be noted that "throwing litter in a bin rather than leaving it on desks or on the floor" was the operationalization of "neat and tidy" used by Miller et al (1975).

Thus a 6 X 6 matrix of intercorrelations was produced. These intercorrelations were between the means for each of the five rating dimensions in the Characteristics Rating study, and the mean "choosability" determined in the Behaviour Rating Questionnaire study. Table 8.3.11 shows this matrix.

**Table 8.3.11:** Matrix of intercorrelations between the means for the five rating dimensions (Characteristics Rating Questionnaire study) and choosability (Behaviour Rating Questionnaire study).

Rating Dimension	Self-rating	Importance	Desirability	Pleased if Attributed	Trying to Affect Behr
Self-rating					
Importance	.881				
Desirability	.786	.929			
Pleased if Attributed	.905	.976	.857		
Trying to Affect Behr	-.310	-.571	-.643	-.429	
Choosability	.333	.190	-.071	.286	.333

A principal axes factor analysis was carried out to investigate the factor structure of the matrix. This was done after a McQuitty (1961) linkage analysis had shown one main cluster centering around "importance", but with "choosability" only very weakly linked. The measure of sampling adequacy, .545, was just about high enough for the factor analysis to be viable, although the entire procedure was regarded as a somewhat "rough-and-ready" analysis, since it had not been planned from the outset and the researcher had to "make do" with what data were available. In fact, the McQuitty solution was confirmed, there being two main factors after oblique rotation. As Table 8.3.12 shows, the two factors together accounted for 80 percent of the variance, the first accounting for 63.6 percent of the total variance and the second for 20.4 percent.

**Table 8.3.12:** Results of factor analysis of means of the six rating dimensions.

Factor	Eigenvalue	% of variance	Cum. %
Factor 1	3.82	63.6	63.6
Factor 2	1.23	20.4	84.0

Table 8.3.13 shows the loadings of each rating dimension on the two factors.

**Table 8.3.13:** Loadings of the six rating dimensions on the two factors.

Rating Dimension	Factor 1	Factor 2
Self-rating	.934	.102
Importance	.986	.085
Desirability	.968	-.122
Pleased if Attributed	.912	-.116
Trying to Affect Behaviour	-.339	.552
Choosability	.268	.947

"Trying to affect behaviour" produced the least clear-cut results. It was also the least predictable variable across the individual matrices presented above, and when an analysis was done forcing a three-factor solution, it loaded 0.726 on the third factor, while all other loadings were less than 0.5; the factor was excluded since its eigenvalue was a negligible 0.126. In the final rotation it loaded reasonably highly on the second factor, and less so, and negatively, on the first. It could, however, be argued that the first factor is an "importance" factor, and the second a "choosability" factor.

#### 8.3.3.6 Comparison of Ability and Behavioural Propensity (Low- and High-Choosability) Characteristics on "Trying to Affect Behaviour"

There were considered to be four ability items (perceptive, artistic perceptive, creative, intelligent) and four behavioural propensity items (looks for good characteristics, persistent, kind, neat and tidy) in the questionnaire. One score for each of these categories was calculated by summing the ratings on "trying to affect behaviour" to determine whether respondents perceived the possible difference in potential outcome were items from one or

other category to be attributed. The difference was not statistically significant, but the scores differed in the expected direction, namely, that behavioural propensity (or high-choosability) items were likely to be seen as attributed with some intention to affect behaviour (ability mean=16.15, s.d.=7.44; behavioural propensity mean=17.29, s.d.=8.52;  $t=1.88$ ,  $df=81$ ,  $p=.063$ ). Perhaps larger subsets of items would show this difference more clearly. On the other hand, it might be argued on the basis of the generally unpredictable behaviour of this dimension that the judgment respondents were being required to make was a sufficiently unusual one that it was subject to varying interpretations among respondents.

### **8.3.4 Discussion**

The results of this study had some important implications for other studies reported in this thesis. Firstly, it had become clear that the model envisaged, in which choosability might be a key factor in determining whether an attributional praise effect could occur, was too simplistic. At least one other factor, importance to the self-concept of the attributed characteristic, also emerged as a key variable. The fact that "persistence" and "creativity" were not equated on this variable implied that Experiment 6 was inadequate as a test of the choosability hypothesis. That is, in order to determine what the relative weights of the two variables might be, an experiment similar to Experiment 6 would need to be done, but this time the two attributed characteristics should differ in choosability, but be near equivalent in importance to the self-concept.

Another major implication of the study related to an experiment which was already planned as a sequel to Experiment 4, Experiment 8. In this study "looks for the good characteristics in another person", a high-choosability "behavioural propensity" characteristic was to be attributed, so that the results could be compared with those occurring when a low-choosability "ability" characteristic "perceptive about another person's artistic talent" was attributed. Originally it was hoped that a simple contrast was being made between representatives of the two categories of attributable characteristics.

However, since it now appeared that the two characteristics in question also differed on the key variable, importance, a good deal of consideration was given to the question of whether to go ahead with the experiment. It was decided that, since the main aim of the research sequence was to investigate the assertion of Kanouse et al that "apparently subtle variations in the language of praise often have powerful effects" (1981, p. 98), the planned experiment could validly be carried out. That is, given that the attributed characteristic was to be one on which subjects could act were the manipulations to be effective at all, it seemed that this main question could be elucidated with the proposed study. It would increase the complexity of the design unnecessarily to include the importance variable within the same experiment.

A secondary aim of the overall research project was to investigate the interaction between a praisee's prior self-concept and the effects of the attributional praise. Given this,



it was interesting to discover an overlap between that strand of the research and the other. That is, initially Markus' work on self-schemas was taken as a starting point for investigating the second question, although her concept was operationalized differently. But it now appeared that importance to the self-concept, as distinct from being self-schematic, might be a feature of any characteristic which could have a bearing in its own right on any effect of the attribution of that characteristic. It seemed possible that whether or not the concept of being self-schematic or constructual in a given area does have validity, Markus' results might be more explicable in terms of importance to the self-concept of the domain in question rather than in terms of the putative existence of a schema. It should be reiterated that she herself has noted the high correlation between self-rating and importance.

Certainly this questionnaire study, although it served its purpose within the project, could with benefit be repeated and extended. It would be valuable to determine whether the factor analysis which was necessarily somewhat rough-and-ready was able to be replicated. In addition it would be interesting to study further dimensions of variation among characteristics (for example, "self-description", "deservingness", "alterability"). What has emerged so far is that, although superficially the attributed characteristic might seem to be multidimensional, in fact some of those dimensions might be reducible. The dimensions which were emerging, either from empirical work or through conceptual analysis, as being significant aspects of the attributed characteristic could now be summarized. It seemed that importance of the characteristic to the self-concept was significant, as was choosability of the implied behaviour(s); the sense of this term used here is that doing the behaviour or displaying the characteristic is simply a matter of being motivated, of wanting to enough.

From a pilot study not described here, another dimension, "alterability" also emerged as important. If the attributed characteristic, or implied behaviour(s), have a high starting level, there may be little scope for behaviour change. This could be a point of convergence with the research and theories of Deci and Ryan (see, e.g., Deci and Ryan, 1987). If alterability is low perhaps overjustification effects will be observed, whereas if it is high, behaviour modification may be a possibility.

Other dimensions of variation which might also contribute to any observed effects are whether or not the recipient of the praise was previously schematic on the characteristic (or perhaps that is subsumed under importance, given that this researcher's measure of the concept correlates with Markus'), and the deservingness/credibility dimension of Kanouse et al (1981). This last dimension would very likely relate to the cluster found in the present study, but further work is needed to confirm that. It might also relate to a variable which has not been investigated at all in this project, whether or not the recipient perceives that s/he exhibited prior behavioural evidence for the attribution, or praise.

**CHAPTER 9**  
**PART 1**  
**EXPERIMENT 3**

**9.1.1 Introduction**

Consistent with the work of Markus (Markus, 1977) into the effect of feedback on the self-concept, it was hypothesized that an attributional praise manipulation would have a different effect on subjects who were schematic with respect to the attributed characteristic than it would have on those who were aschematic. The argument underlying this hypothesis was presented in detail in Chapter 3. Here it was argued that individuals' self-concepts are derived in part from information received from other people in praise and other communications. Given the recent conceptualization of the self-concept as an active information processing system, it follows that attributional praise will be processed differently, and have differential effects on behaviour, depending on the prior status of the attributed behavioural domain in the individual's self-concept. That is, whether the subject is schematic or aschematic in the relevant domain should interact with the praise to affect behaviour.

A self-concept questionnaire was devised for the selection of subjects to participate in an experiment. It included items specific to the experimental tasks, and subjects who were preselected as schematic on the experimental variable were compared with those who were aschematic. A brief description of the relevant aspects of this questionnaire is set out below, but a complete description of it, and of its subsequent modifications, appears in Chapter 10. Throughout this chapter the terms "schematic" and "aschematic" are used in relation to the criterial statement in the questionnaire because that is how the variable was conceived at this stage of the research sequence. However it should be noted that subsequently an argument is developed that more appropriate terminology might be "constructual/aconstructual". This point is discussed in greater detail in Chapter 10.

The aim of this study was to determine whether an attributional praise manipulation had a different effect on subjects who were schematic with respect to the characteristic "persistence" than it did on those who were aschematic. It was also hoped to determine whether specific or general self-concept variables had greater predictive power in interaction with the manipulation. To this extent the study was considered to be a pilot experiment. That is, although one specific item was used as criterial for selection into the groups "schematic" and "aschematic", and an attempt was made to gather a fairly substantial body of data from each group, it was anticipated that the chosen item might not prove to be the best criterion of being schematic on the characteristic of interest. It was hoped that the results of the study would indicate which of the self-statements, if any, were most suitable for the purpose of ascertaining whether subjects were or were not genuinely schematic.

### 9.1.1.1 Description of Experiment

9.1.1.1.1 Design: There were three groups -

- (1) Experimental schematic
- (2) Experimental aschematic
- (3) Control - mixed.

However, it should be noted that this was a preliminary and somewhat superficial division, since it was hoped that a multiple regression analysis or tests for mean differences between groups would indicate whether the group divisions might be more appropriately made with reference to some criterial statement other than that used for group division in the first instance (see below). Since the study was very much a pilot study and since the researcher was aware of the difficulty in recruiting subjects, it was not intended specifically to control for being schematic on the relevant variable. The reason for this was that it seemed more valuable in a preliminary study to run the majority of those who came under the experimental conditions. It was hoped nevertheless that enough data could be obtained to indicate trends.

9.1.1.1.2 Subject Selection: A "Self-Concept Questionnaire" containing a number of statements which might/might not be personally applicable was devised. The questionnaire is shown in Appendix 6.1. Ideas for the sorts of characteristics, behavioural tendencies and interests which might be represented by the items were gleaned from the Adjective Checklist of Gough and Heilbrun (1965) and from the work of Jones, Sensenig and Haley (1974). Generally speaking, however, superficial plausibility was the criterion for inclusion of items since at this stage the researcher was only interested in the six items relevant to the planned experiment. The following items were thus embedded in the questionnaire -

- (1) I tend to persist at tricky problems even when I am frustrated by them.
- (2) I never persist at a puzzle unless I'm pretty sure I will be able to solve it.
- (3) I am persistent.
- (4) I find computer games quite addictive.
- (5) If I get involved in a task I like to stick at it until it's finished.
- (6) I find most word games fascinating.

Respondents were required to circle "yes", "no" or "uncertain" for each of 50 items (including the above). In addition, they were asked, for each item, to circle "yes", "no" or "uncertain" to the statement "I have thought this about myself before now, distinctly enough that I might well have included a similar statement in a description of myself". It was hoped to preselect subjects who were schematic with respect to the item "I am persistent", that is, who circled "yes" when asked whether they would have included this item in a self-description. Aschematics were defined as those who circled "no" or "uncertain". Of the 124 respondents, eighty fell into the former category, and 44 into the latter. Not all respondents

were able to be contacted since they had not given enough information enabling their identification. However, letters were sent through the university's internal mail system to 38 aschematics and to 58 schematics requesting that they sign up for a computer "games' rating" task to assist the researcher to select suitable games for her next experiment.

The questionnaire was distributed anonymously so that when the researcher subsequently sought the assistance of selected individuals in her study, they would not associate the questionnaire task with the experimental tasks and thereby become suspicious as to the actual aim of the experiment.

### **9.1.2 Method**

**9.1.2.1 Subjects:** Forty-two students who were enrolled in Psychology I in 1985 participated in the experiment. Their mean age was 21.68 years (s.d.=6.89).

**9.1.2.2 Procedure:** The Self-Concept Questionnaire was administered during testing sessions of Psychology I undergraduates at the beginning of the 1985 academic year. Since there were insufficient returns, a colleague of the experimenter subsequently distributed more copies to be returned to an anonymous box ("Self-Concept Questionnaires") at the departmental office.

The preliminary experimental procedure was identical to that described for Experiment 2 (see Chapter 6). In addition to delivering the planned manipulations at the appropriate times, during the playing of the games the experimenter would ask the question "How's your score going?" or "How are you getting on?" (one per game per subject). If the subject initiated an interaction with the experimenter, such as asking a question, the experimenter responded in a friendly but brief manner. If the subject evinced pleasure at the game or her/his score the experimenter indicated the same feeling by also smiling or laughing.

#### **9.1.2.3.1 Wording of Manipulations - Phase 1**

**Experimental:** "Did you enjoy that game? I think that one requires some persistence, don't you, to work out the best way to play? I thought that you seemed to be very persistent at it. You must be a persistent sort of a person."

**Control:** "Did you enjoy that game? I'm never sure what's the best strategy to use. It seems to happen so fast and sometimes it takes a little while to work out what's going on. But it's quite good fun."

#### **9.1.2.3.2 Wording of Manipulations - Phase 2**

**Experimental:** "I find that one really frustrating sometimes. You seemed to know what you were doing. I think you must be a very persistent person."

**Control:** "I find that one really frustrating sometimes. It's quite different from the first one. All the games are different."

### 9.1.3 Results

As was done in the reporting of the results of Experiment 2 (Chapter 6), the results for each of the games are presented in order of interest in the outcome rather than in a sequential order.

#### 9.1.3.1 Comparison of Experimental and Control Groups on Time 3 (Time Spent on "Word Search")

A t-test was calculated to determine whether the persistence attribution manipulation was affecting time spent on this game. While being in the predicted direction the result was not significant ( $t=1.68$ ,  $df=40$ ,  $p=.1$ ). The means of the two groups are set out in Table 9.1.1.

**Table 9.1.1:** Means and standard deviations, by group, of time spent on Game 3, "Word Search".

Group	N	Mean	s.d.
Experimental	30	15.02	7.02
Control	12	11.34	4.42

A Mann-Whitney U-test was not significant, nor were analyses of variance using as covariates those variables which correlated significantly with time spent on the game (see Section 9.1.3.6 below). The probability was around 0.1 in each analysis.

#### 9.1.3.2 Comparison of Groups on Time 2 (Time Spent on "Maze")

There was no significant difference between experimental and control groups in time spent on the second game. The means and standard deviations are shown in Table 9.1.2.

**Table 9.1.2:** Means and standard deviations, by group, of time spent on Game 2, "Maze".

Group	N	Mean	s.d.
Experimental	29	6.30	2.89
Control	12	6.41	2.33

When "I felt tense while playing this game" was used as a covariate (it was the only rating variable to correlate with Time 2) the result was still not significant.

However, it should be noted that in a previous attribution experiment (Experiment 1) an attribution manipulation did not distinguish between groups until after it had been delivered twice.

### 9.1.3.3 Comparison of Groups on Times 1 ("Alien Blaster" ) and 4 ("Zombies")

There was no significant difference between experimental and control groups on either Time 1 or Time 4. Means and standard deviations are shown in Tables 9.1.3 and 9.1.4 respectively.

**Table 9.1.3:** Means and standard deviations, by group, of time spent on Game 1, "Alien Blaster".

Group	N	Mean	s.d.
Experimental	30	3.90	2.15
Control	12	4.00	0.97

**Table 9.1.4:** Means and standard deviations, by group, of time spent on Game 4, "Zombies".

Group	N	Mean	s.d.
Experimental	29	6.74	3.43
Control	12	7.90	5.10

Although there was not a significant difference between groups on the time of interest (Time 3), it is noteworthy that the largest difference between the experimental and control groups occurred on this time.

### 9.1.3.4 Comparison of Experimental and Control Groups on their Ratings of the Games

T-tests were calculated comparing experimental and control groups on their ratings of "Maze" (Game 2) and "Word Search" (Game 3). These were the games most likely to have been affected by the manipulation, and although "Zombies" (Game 4) might have been affected, no significant differences between groups were found. Groups were also compared on the first game, "Alien Blaster", since subjects were just beginning to make their ratings as the experimenter was delivering the experimental manipulation. Only significant results are reported and they are set out in Tables 9.1.5 to 9.1.14 with a summary of the findings following.

#### 9.1.3.4.1 Maze (Game 2)

Results for four of the rating scales were significant for Maze.

(1) "I thought I would do well while playing this game"

**Table 9.1.5:** Results of t-test comparing groups on their ratings of Game 2, "Maze", "I thought I would do well while playing this game".

Group	N	Mean	s.d.	t	df	p
Experimental	29	4.31	1.29	2.24	39	0.031
Control	12	5.25	1.06			

(2) "It was important to me that I play this game well"

**Table 9.1.6:** Results of t-test comparing groups on their ratings of Game 2, "Maze", "It was important to me that I play this game well".

Group	N	Mean	s.d.	t	df	p
Experimental	29	3.55	1.55	2.12	39	0.04
Control	12	4.75	1.87			

(3) "I cared very much how well I played this game"

**Table 9.1.7:** Results of t-test comparing groups on their ratings of Game 2, "Maze", "I cared very much how well I played this game".

Group	N	Mean	s.d.	t	df	p
Experimental	29	3.14	1.66	2.04	39	0.049
Control	12	4.33	1.83			

(4) "I played this game well"

**Table 9.1.8:** Results of t-test comparing groups on their ratings of Game 2, "Maze", "I played this game well".

Group	N	Mean	s.d.	t	df	p
Experimental	29	4.59	1.38	2.13	38.56	0.04
Control	12	5.25	0.62			

### 9.1.3.4.2 Word Search (Game 3)

Results for four of the rating scales were significant for Word Search.

(1) "I would like to play this game for recreation"

**Table 9.1.9:** Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I would like to play this game for recreation".

Group	N	Mean	s.d.	t	df	p
Experimental	30	4.53	2.15	2.39	40	0.021
Control	12	2.92	1.44			

(2) "I only felt like playing this game for a short time"

**Table 9.1.10:** Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I only felt like playing this game for a short time".

Group	N	Mean	s.d.	t	df	p
Experimental	30	2.97	1.83	2.11	40	0.041
Control	12	4.33	2.06			

(3) "I enjoyed playing this game"

**Table 9.1.11:** Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I enjoyed playing this game".

Group	N	Mean	s.d.	t	df	p
Experimental	30	5.03	1.90	2.43	40	0.019
Control	12	3.50	1.68			

(4) "I wanted to keep playing this game"

**Table 9.1.12:** Results of t-test comparing groups on their ratings of Game 3, "Word Search", "I wanted to keep playing this game".

Group	N	Mean	s.d.	t	df	p
Experimental	30	4.73	1.82	2.22	40	0.032
Control	12	3.33	1.92			



#### 9.1.3.4.3 Alien Blaster (Game 1)

Two rating scales gave significant results for Alien Blaster.

(1) "I played this game well"

**Table 9.1.13:** Results of t-test comparing groups on their ratings of Game 1, "Alien Blaster", "I played this game well".

Group	N	Mean	s.d.	t	df	p
Experimental	30	3.00	1.58	2.10	40	.008
Control	12	2.00	1.74			

(2) "Other students would be bored by this game"

**Table 9.1.14:** Results of t-test comparing groups on their ratings of Game 1, "Alien Blaster", "Other students would be bored by this game".

Group	N	Mean	s.d.	t	df	p
Experimental	30	3.23	1.43	2.34	40	.027
Control	12	2.25	1.14			

To summarize these results, in the case of "Maze", the experimental group cared less how well they played, and rated their performance lower than did the control group, whereas in the case of "Word Search" the experimental group enjoyed the game more and wanted to keep playing longer. All other comparisons were non-significant. In the case of the first game, experimental subjects agreed to a greater extent than did control subjects that they played well and that other students would be bored by the game.

#### 9.1.3.5 Within Experimental Group Comparisons: Comparisons of "Schematics and Aschematics"

T-tests on time spent on the four games were calculated to compare subjects who were schematic and aschematic on the six variables of interest. This was a "within Experimental group" analysis in order not to confound any effects of the manipulation with results for subjects not exposed to the manipulation. Comparisons were also made on the averages of all the times, and the average of times spent on the second and third games (times most likely to have been affected by the manipulation). Differences between schematics and aschematics on some variables were found, notably on time spent on the first game, "Alien Blaster", that is, before any experimental treatment had occurred. Specifically, subjects who were schematic on "I am persistent" played this game for a significantly shorter time than did those who were aschematic (see Table 9.1.15), and those who were schematic on "I find computer games quite addictive" also played this game for a

shorter time, but not significantly so (schematics' mean time=3.14 minutes, s.d.=1.19, N=11; aschematics' mean time=4.34 minutes, s.d.=2.47, N=19;  $t=-1.8$ ,  $df=27.39$ ,  $p=.08$ ).

**Table 9.1.15:** Results of t-test comparing subjects who were and were not schematic on "I am persistent" on time spent playing Game 1, "Alien Blaster".

Group	N	Mean	s.d.	t	df	p
Schematics	21	3.33	1.42	-2.37	40	.025
Aschematics	9	5.22	2.99			

Those who were schematic on this latter variable also played the second game, "Maze", for a shorter time (see Table 9.1.16).

**9.1.16:** Results of t-test comparing subjects who were and were not schematic on "I find computer games quite addictive" on time spent playing Game 2, "Maze".

Group	N	Mean	s.d.	t	df	p
Schematics	11	4.65	0.72	-3.33	19.62	0.0003
Aschematics	18	7.31	3.24			

As Table 9.1.17 shows, subjects who were schematic on "If I get involved in a task I like to stick at it until it's finished" also played the first game for a significantly shorter time than did those who were aschematic.

**Table 9.1.17:** Results of t-test comparing subjects who were and were not schematic on "If I get involved in a task I like to stick at it until it's finished" on time spent playing Game 1, "Alien Blaster".

Group	N	Mean	s.d.	t	df	p
Schematics	21	3.33	1.47	-2.77	27	0.01
Aschematics	8	5.58	2.92			

Similarly, those who were schematic on "I find most word games fascinating" played "Alien Blaster" for a shorter time, but this result only approaches significance (schematics' mean time=3.17 minutes, s.d.=1.46, N=14; aschematics' mean time=4.54 minutes, s.d.=2.49, N=16;  $t=-1.81$ ,  $df=28$ ,  $p=.08$ ).

#### 9.1.3.6 Correlational Analysis of Times and the Ratings of the Games (Experimental and Control Groups Combined)

Since there were only significant differences between the groups on a few of the games' ratings, groups were combined and correlations were calculated between time spent on each game and every rating of that game. Only significant results are reported.

#### 9.1.3.6.1 Game 1 - Alien Blaster

Significant positive correlations were found between time and "I thought I would do well....." ( $r=.274$ ,  $N=42$ ,  $p=.04$ ), "I would like to play this game for recreation" ( $r=.326$ ,  $N=42$ ,  $p=.017$ ), "I enjoyed playing this game" ( $r=.349$ ,  $N=42$ ,  $p=.012$ ), "I played this game well" ( $r=.301$ ,  $N=42$ ,  $p=.026$ ), and "I wanted to keep playing this game" ( $r=.33$ ,  $N=42$ ,  $p=.016$ ).

There was a negative correlation between time and "I only felt like playing for a short time" ( $r=-.325$ ,  $N=42$ ,  $p=.018$ ).

#### 9.1.3.6.2 Game 2 - Maze

The strongest relationship (n.s.) is between time and "I felt tense...." ( $r=.236$ ,  $N=41$ ,  $p=.069$ ).

#### 9.1.3.6.3 Game 3 - Word Search

Twelve out of sixteen variables correlated significantly with time. These correlations are displayed in Table 9.1.18. N is 42 in every case.

**Table 9.1.18:** Correlations between task-rating variables, Game 3, "Word Search", and time spent playing that game.

Rating variable	r	p
3. Other students would enjoy playing this game	.338	.014
4. I felt tense while playing this game	.264	.045
5. I would like to play this game for recreation	.363	.009
6. Other students would try hard while playing this game	.488	.001
7. This game was interesting	.264	.045
8. I only felt like playing this game for a short time	-.312	.022
10. I cared very much how well I played this game	.312	.022
11. I enjoyed playing this game	.326	.016
12. I tried hard while playing this game	.364	.009
13. I played this game well	.449	.001
14. Most students would be bored by this game	-.556	.0001
15. I wanted to keep playing this game	.404	.004

#### 9.1.3.6.4 Game 4 - Zombies

Table 9.1.19 shows the fifteen out of sixteen relationships which were significant for the final game, Zombies. N is 41 in every case.

**Table 9.1.19:** Correlations between task-rating variables, Game 4, "Zombies", and time spent playing that game.

Rating variable	r	p
2. It was important to me that I play this game well	.450	.002
3. Other students would enjoy playing this game	.360	.01
4. I felt tense while playing this game	.367	.009
5. I would like to play this game for recreation	.331	.017
6. Other students would try hard while playing this game	.312	.023
7. This game was interesting	.436	.002
8. I only felt like playing this game for a short time	-.273	.042
9. It would take most students a little while to work out the best way of playing this game	.310	.024
10. I cared very much how well I played this game	.483	.001
11. I enjoyed playing this game	.383	.007
12. I tried hard while playing this game	.454	.001
13. I played this game well	.303	.027
14. Most students would be bored by this game	-.336	.016
15. I wanted to keep playing this game	.453	.001

The largest of these correlations, in addition to some of the self-concept variables, condition (Experimental or Control), and factor scores (derived from a factor analysis of the Computer Attitude scale) were entered into regression analyses to determine the best equation to predict each time. The results of these analyses are described in Section 9.1.3.9 below.

#### 9.1.3.7 Comparison of Schematics and Aschematics on their Ratings of the Games

Subjects who were schematic/aschematic on each of the six self-concept variables which were of particular interest were compared on their ratings of all the games. T-tests were used for these analyses. A number of significant differences emerged.

Individuals who were schematic (S) on "I am persistent" differed from those who were aschematic (A) on that variable on five of the rating scales for the second game. They agreed more that they would like to play the game for recreation (S mean=5.05, s.d.=1.43, A mean=3.22, s.d.=1.48,  $t=3.15$ ,  $df=27$ ,  $p=.004$ ), that the game was interesting (S mean=5.50, s.d.=1.19, A mean=4.22, s.d.=1.99,  $t=2.16$ ,  $df=27$ ,  $p=.04$ ), that they enjoyed playing it (S mean=5.50, s.d.=1.32, A mean=3.78, s.d.=1.78,  $t=2.91$ ,  $df=27$ ,  $p=.007$ ), and that they wanted to keep playing it (S mean=4.80, s.d.=1.32, A mean=2.78, s.d.=.97,  $t=4.10$ ,  $df=27$ ,  $p=.0001$ ), and less that they only felt like playing for a short time (S mean=3.15, s.d.=1.53, A mean=5.56, s.d.=1.33,  $t=-4.06$ ,  $df=27$ ,  $p=.0001$ ). They agreed significantly less that they cared how well they played the first game (S mean=2.43, s.d.=1.36, A mean=3.67, s.d.=1.94,  $t=-2.01$ ,  $df=28$ ,  $p=.055$ ), but they agreed more that other students would try hard while playing the third game (S mean=5.05, s.d.=1.32, A mean=3.89, s.d.=1.45,  $t=2.14$ ,  $df=28$ ,  $p=.041$ ).

Individuals who were schematic on "I tend to persist at tricky problems even when I am frustrated by them" also agreed significantly less that they cared how well they played the first game (S mean=2.24, s.d.=1.20, A mean=3.54, s.d.=1.85,  $t=-2.33$ ,  $df=28$ ,  $p=.027$ ). They agreed less that it was important that they play the fourth game well (S mean=2.50, s.d.=1.27, A mean=3.77, s.d.=1.59,  $t=-2.40$ ,  $df=27$ ,  $p=.024$ ). Those who were schematic on "I never persist at a puzzle unless I am pretty sure I will be able to solve it" agreed less that it would take most students a little while to work out the best way of playing the first game (S mean=4.38, s.d.=1.50, A mean=5.45, s.d.=1.14,  $t=-2.10$ ,  $df=28$ ,  $p=.045$ ), and that it took them a little while to work out the best way of playing the third game (S mean=2.63, s.d.=2.06, A mean=4.45, s.d.=2.08,  $t=-2.13$ ,  $df=28$ ,  $p=.042$ ). However, they agreed more that they would like to play the second game for recreation (S mean=5.63, s.d.=1.50, A mean=4.05, s.d.=1.53,  $t=2.49$ ,  $df=27$ ,  $p=.019$ ).

The schematics on "I find computer games quite addictive" agreed less that they felt tense while playing both the second (S mean=2.18, s.d.=1.17, A mean=3.50, s.d.=1.82,  $t=-2.14$ ,  $df=27$ ,  $p=.042$ ) and fourth games (S mean=2.20, s.d.=.92, A mean=3.36, s.d.=1.57,  $t=-2.15$ ,  $df=27$ ,  $p=.04$ ). Those who were schematic on "If I get involved in a task I like to stick at it until it's finished" agreed more that they would like to play the second game for recreation (S mean=4.90, s.d.=1.55, A mean=3.43, s.d.=1.62,  $t=2.16$ ,  $df=26$ ,  $p=.04$ ), and that it was interesting (S mean=5.53, s.d.=1.17, A mean=3.85, s.d.=2.12,  $t=2.65$ ,  $df=26$ ,  $p=.014$ ), and less that they only felt like playing for a short time (S mean=3.43, s.d.=1.86, A mean=5.14, s.d.=1.22,  $t=2.27$ ,  $df=26$ ,  $p=.032$ ). Finally, those individuals who were schematic on "I find most word games fascinating" agreed more that other students would try hard while playing the first game (S mean=5.36, s.d.=1.50, A mean=4.38, s.d.=1.02,  $t=2.47$ ,  $df=28$ ,  $p=.02$ ), and that they only felt like playing it for a short time (S mean=4.93, s.d.=1.54, A mean=3.69, s.d.=1.66,  $t=2.11$ ,  $df=28$ ,  $p=.044$ ). They agreed less that they felt tense while playing the last game (S mean=2.31, s.d.=1.11, A mean=3.50, s.d.=1.55,  $t=-2.33$ ,  $df=27$ ,  $p=.028$ ).

These results were unexpected, and they suggested the possibility that there might be something different about the general approach to the experimental situation of individuals who were schematic on certain variables compared to those who were aschematic on those variables (see also Section 9.1.3.5 above). For this reason it was decided to look at a variable initially conceived of as "Schematism", a term used in the sense, not of individual dimensions, but of a score out of 50 variables agreed to on the original Self-Concept Questionnaire. This score thus represented the number of variables which the subject had noted as being part of her/his self-description prior to being asked to complete the questionnaire. The term "Schematism/Self-Construction" is used below when reference is made to that score. Although subsequently a distinction was made between "Schematism" and "Self-Construction" and further correlates of both variables were investigated, at this

preliminary stage neither the empirical nor the conceptual work resulting in that distinction had been undertaken. That work is reported in Chapter 10.

### 9.1.3.8 Relationships between Schematism/Self-Construction and the Experimental Variables

#### 9.1.3.8.1 Relationship between Schematism/Self-Construction and Times

Schematism/Self-Construction score was correlated with times on all four games, within the Experimental group, and with Experimental and Control groups combined. Tables 9.1.20 and 9.1.21 respectively show the results of these analyses.

**Table 9.1.20:** Correlations, within the experimental group, between Schematism/Self-Construction and time spent on each game.

Time	N	r
1	28	.087
2	27	.113
3	28	.281
4	27	.278

**Table 9.1.21:** Correlations, across groups, between Schematism/Self-Construction and time spent on each game.

Time	N	r
1	42	-.019
2	41	-.080
3	42	.249
4	41	.196

Although none of these relationships was very strong, with a larger N it might become apparent that Schematism/Self-Construction does relate to behaviour, particularly in relation to time spent playing the third and fourth games.

#### 9.1.3.8.2 Comparison of High and Low Scorers on Schematism/Self-Construction on Games' Ratings

Scores for each rating dimension were calculated for each subject across the four games. That is, one score was calculated for each subject for "This game was interesting", "I thought I would do well...", and so on. It was hoped that more could be discovered about the general response tendencies of those who scored high or low on the 50-item questionnaire. Correlations were thus calculated between these task-rating scores and the Schematism/Self-Construction score. In addition, subjects were split at the median (29) of Schematism/Self-Construction and t-tests were calculated between the two halves.

A number of significant correlations were found. Out of sixteen task rating variables, there were nine significant correlations; a further significant difference between the two halves following a median split was also found. These results are set out in Table 9.1.22.

**Table 9.1.22: Correlations between Schematism/Self-Construction and games' ratings across games.**

Games' Rating Item	r
I would like to play this game for recreation	.360*
Other students would try hard while playing this game	.287*
Most students would be bored by this game	-.224++
It took me a little while to work out the best way of playing this game	.343*
I enjoyed playing this game	.370**
It would take most students a little while to work out the best way of playing this game	.346*
This game was interesting	.399**
I wanted to keep playing this game	.320*
Other students would enjoy playing this game	.346*

\* =  $p < .05$

\*\* =  $p < .01$

++= a t-test between scorers above and below the median (29) on Schematism/Self-Construction significant  $p < .01$

These results were considered to be particularly interesting since there was no reason at the outset to anticipate such differences between individuals. Looking at the particular items on which differences were found, notably those relating to the reactions of "other students", the question could be raised as to whether high scorers are either more concerned about the reactions of others or are more conscientiously task-oriented (i.e., the task was represented to them as being a rating task to help the researcher select games for a future experiment). A number of questions beyond the experimental context were also considered - for example, does Schematism/Self-Construction score relate to any other psychological variables (e.g., Self-Consciousness, Buss and Scheier, 1976; Buss, 1980), is it a stable characteristic of a person when any set of self-variables is considered, and does it relate to more objectively measurable behaviour?

#### 9.1.3.8.3 Correlation of Computer Attitude Factor Scores with Schematism/Self-Construction

An unweighted least squares factor analysis on the Computer Attitude Questionnaire was followed by oblique rotation to clarify some items loading on two factors. This analysis resulted in three reasonably substantial factors. Factor 1, accounting for 30.9 percent of the variance (eigenvalue=3.71), was interpreted as a "discomfort due to inexperience" factor, Factor 2 (10.3 percent of the variance, eigenvalue=1.23) as a "computers as a serious educational tool" factor and Factor 3 (7.6 percent of the variance, eigenvalue=.91) as an "experience" factor. A fourth factor only accounted for 4.6 percent of the variance

(eigenvalue=.56). A significant negative correlation was found between the "experience" factor and Schematism/Self-Construction score ( $r=-.264$ ,  $N=40$ ,  $p=.05$ ).

#### 9.1.3.8.3.1 Correlation of Computer Attitude Factor Scores with Times

Factor scores on each factor were computed for each subject. Correlations between these scores and Times 1-4 were calculated.

Time 1 correlated significantly with Factor 1 ( $r=-.375$ ,  $N=41$ ,  $p=.008$ ) and with Factor 3 ( $r=.313$ ,  $N=41$ ,  $p=.023$ ).

Time 2 correlated significantly with Factor 3 ( $r=.286$ ,  $N=40$ ,  $p=.037$ ).

There was a non-significant correlation between Time 4 and Factor 3 ( $r=.237$ ,  $N=40$ ,  $p=.071$ ).

#### 9.1.3.9 Regression Analyses

An attempt was made to find, for each game, which combination and relative weight of variables best predicted time spent on the game. To this end, a series of regression analyses was performed. Variables were added in and tested in an experimental manner if they correlated reasonably with the dependent measure. But, in addition, various combinations of self-rating on the six selected self-concept variables (and being schematic on them), and Condition (Experimental or Control) were also tested. A stepwise procedure whereby the most highly correlated variable entered the equation first was used initially, followed by forced entry of all other relevant variables. The results are set out below.

##### 9.1.3.9.1 Time on Game 1

Using a stepwise procedure, score on "I played this game well" was found to account for 13.9% of the variance in predicting Time 1 ( $F=5.97$ ,  $df=1/37$ ,  $p=.014$ ). Forcing all other relevant variables to enter increased this variance accounted for to 39.39% (n.s.). Table 9.1.23 shows the relative contribution of each variable. The beta weights can be seen as a rough guide to weighting although variables were measured on different scales.



**Table 9.1.23: Results of regression analysis to predict time spent on Game 1, "Alien Blaster", showing beta weights.**

Variable	Beta	t	p
I played this game well	.320	1.400	.172
I only felt like playing this game for a short time	.018	.105	.917
Schematism score	.015	.090	.930
I tend to persist at tricky problems even when I am frustrated by them	-.330	-1.560	.130
Factor 1 score	-.168	-.801	.430
I thought I would do well when playing this game	.125	.672	.500
Factor 3 score	.199	.977	.377
I enjoyed playing this game	.464	1.580	.125
I am persistent	.201	.930	.361
I wanted to keep playing this game	-.250	.975	.338
I would like to play this game for recreation	-.301	-1.095	.280
Constant	-.019	-.004	.990

Examination of the beta weights suggests that in the final equation a self-concept variable ("I tend to persist at tricky problems....") and feelings about the game ("I would like to play this game for recreation", "I enjoyed playing this game" and "I played this game well") made the largest contributions, although none of them in its own right significantly changed the percent of variance accounted for. Neither of the Computer Attitude factor scores nor Schematism/Self-Construction score made any noticeable contribution.

#### 9.1.3.9.2 Time on Game 2

Time 1 accounted for 19.42% of the variance in predicting Time 2 ( $F=9.16$ ,  $df=1/38$ ,  $p=.004$ ). The addition of Factor 3 score, being schematic on "I tend to persist at tricky problems...." and Condition only increased this to 24.55% ( $F=2.85$ ,  $df=4/35$ ,  $p=.038$ ). Approximate estimates of the relative weights of these variables in the final equation are shown in Table 9.1.24.

**Table 9.1.24: Results of regression analysis to predict time spent on Game 2, "Maze", showing beta weights.**

Variable	beta	t	p
Time 1	.371	2.395	.022
Condition (E or C)	-.033	-.216	.830
Factor 3 score	.135	.864	.390
Schematic "I tend to persist at tricky problems...."	.173	1.094	.282
Constant	3.428	2.186	.036

That is, Condition (Experimental or Control) had a negligible predictive power relative to Time 1, score on Factor 3 (the "experience" factor), or whether the subject was or was not schematic on "I tend to persist at tricky problems...." .

### 9.1.3.9.3 Time on Game 3

"Other students would be bored...." accounted for 30.98% of the variance in predicting Time 3 ( $F=17.95$ ,  $df=1/40$ ,  $p=.0001$ ). Adding in "I played well" increased this to 37.89% ( $F=11.89$ ,  $df=2/39$ ,  $p=.0001$ ), and then adding in all other relevant variables increased this variance accounted for to 48.55% ( $F=4.58$ ,  $df=7/34$ ,  $p=.0011$ ). The results of this regression analysis are set out in Table 9.1.25.

**Table 9.1.25:** Results of regression analysis to predict time spent on Game 3, "Word Search", showing beta weights.

Variable	beta	t	p
Other students would try hard while playing this game	.257	1.724	.090
Condition (E or C)	-.148	-1.136	.264
I tend to persist at tricky problems even when I am frustrated by them	.013	.090	.928
Self-Construction score	.164	1.258	.217
I played this game well	.270	1.940	.060
I am persistent	.008	.052	.959
Other students would be bored by this game	-.294	-1.930	.062
Constant	6.486	.950	.349

Interestingly, subjects' ratings of how others would feel about the game had a relatively substantial weight, as did their feelings that they had played the game well. Experimental condition and Schematism/Self-Construction score had greater weights than specific self-concept variables.

### 9.1.3.9.4 Time on Game 4

"I cared very much how well I played...." accounted for 23.3% of the variance in predicting Time 4 ( $F=11.85$ ,  $df=1/39$ ,  $p=.004$ ) and adding in other relevant rating variables only increased this to 33.8% ( $F=3.578$ ,  $df=5/35$ ,  $p=.01$ ). Table 9.1.26 shows the beta weights for all variables entered into the equation.

**Table 9.1.26:** Results of regression analysis to predict time spent on Game 4, "Zombies", showing beta weights.

Variable	beta	t	p
I cared very much how well I played this game	.347	1.227	.228
I felt tense while playing this game	.192	1.295	.204
Other students would enjoy playing this game	.100	.590	.558
This game was interesting	.206	1.158	.255
It was important to me that I play this game well	-.058	-.198	.844
Constant	-.718	-.306	.762

To summarize the overall results of these regression analyses, it seems that generally feelings about the game outweighed either factors brought to the experimental situation

(intra-subject) or Condition (Experimental or Control) under which the games were played. On the other hand, it would be consistent with self-perception theory (Bem, 1972) for subjects to have evaluated the games partly on the basis of their own behaviour in relation to them. However, since the impact of all variables was weak, it would not be valuable to speculate too much about the implications of the results.

#### 9.1.3.10 Self-Consciousness Scoring

In view of the interesting results in regard to "Schematism/Self-Construction" as a score, it was decided to investigate any relationships with private and public self-consciousness and social anxiety (e.g., Buss, 1980). Thus about six weeks after the completion of the experiment a letter was sent to 96 respondents to the Self-Concept Questionnaire (those who were still able to be contacted). This contained both a debriefing about the questionnaire and a request that the enclosed scale be completed and returned. The Self-Consciousness scale appears as Appendix 6.4. The participants in the experiment also received information about the nature of the experiment and its findings.

Fifty-two students returned the questionnaire (one was incomplete). As anticipated, the correlation between Private Self-Consciousness and Schematism/Self-Construction score was significant ( $r=.304$ ,  $N=51$ ,  $p=.015$ ). The correlations between Schematism/Self-Construction score and the other two subscales were negligible.

#### 9.1.4 Discussion

Although the experimental manipulation did not result in differences between groups in time spent playing the games, it did apparently have an effect on subjects' ratings of the games. Thus, while there was no clarification of the issue of any interaction between subjects' prior self-concepts on persistence and the effect of an attribution of persistence, the result was considered to have implications for the effect of such a manipulation. A similar effect on games' ratings was found in Experiment 2, which was discussed in Chapter 6, but in the case of Experiment 3, the results were rather clearer, since they were not complicated by interactions.

The explanatory model which was advanced in Chapter 6 could account for the results reported here. That is, it makes intuitive sense to consider that perhaps the controlling aspect of the attribution was initially salient, but subsequently the informational aspect became salient. This explanation is consistent with the pattern of differences between the Experimental and Control groups in their ratings of the games. After one manipulation, subjects in the Experimental group agreed less than did those in the Control group that they would do well, that it was important to do well, that they cared how well they played, and that they did play well. However, after two manipulations subjects in the Experimental group agreed more than did those in the Control group that they enjoyed the game, would like to keep playing it, and would play it for recreation.

A number of points independent of the aim of the experiment could be raised regarding the "self-concept" results and Chapter 10 contains more material bearing on the significance of the results presented here.

The design of the experiment was far from ideal, largely because the best use had to be made of the resources available. In addition, the nature of the games was such that their intrinsic interest might have been competing with any externally-imposed motivating stimulus (sum of ratings across all games over all subjects on "This game was interesting" = 18.80, s.d. = 3.07 - a maximum score would be 4 games X 7 scale points = 28). For these reasons it was decided to make a further attempt to answer the question originally underlying the study, and to further explore the apparent task-rating effect, using tasks which would more adequately measure persistence independently of interest. The experiment which was undertaken to fulfill these aims is described in Part 2 of this chapter.

CHAPTER 9  
PART 2  
EXPERIMENT 7

9.2.1 Introduction

Both Experiments 3 and 4 were designed to investigate any interaction between prior self-concept in a given domain and the effect of the attribution of a characteristic in that domain. In Experiment 3, in an incomplete design, "persistence" was attributed to subjects. It was intended that the experiment be primarily analyzed using multiple regression since there were insufficient subjects available to fill a complete factorial design. The results of the study were not conclusive. Difficulties were also encountered in the execution of another study which was intended as a full factorial design. Despite apparent care in planning, an insufficient number of subjects who had considered themselves in terms of the characteristic to be attributed ("perceptive about the artistic talent of others") was available. As a result, the design was modified in such a way as to answer a different question from that originally posed. This study and its outcome have been described and discussed previously (Experiment 4 in Chapter 7).

Experiment 7 was planned in the hope that such difficulties would not arise again. When operationalizability and the frequencies of constructual and aconstructual respondents on the criterial statement in 1985 and 1986 were examined, "persistence" seemed the best option for the characteristic to be attributed. The criterial statement, "I tend to persist at tricky problems even when I am frustrated by them", was incorporated in the third version of the Self-Concept Questionnaire, termed the Self-Construction Questionnaire and developed over the course of the study (the development of this questionnaire is discussed in detail in Chapter 10). Thus, subjects were selected in the same manner as they had been for Experiments 3 and 4 after completing a questionnaire at preliminary testing sessions. "Tasks" rather than "games" were used in an attempt to devise measures in which persistence was not confounded with other variables.

9.2.1.1 Description of Experiment

9.2.1.1.1 Design: An 8-group experiment was designed. Three factors, self-concept in relation to a specific characteristic, self-construction in relation to that characteristic, and experimental condition, were incorporated. Each factor had two levels. The characteristic in question related to persistence, and self-concept was operationalized by the subject's response, "yes" or "no" ("uncertain" was regarded as "no") to the item on the Self-Construction Questionnaire (see Appendix 6.3), "I tend to persist at tricky problems even when I am frustrated by them". Being constructual in relation to the item was operationalized by the subject's response, "yes" or "no" to the statement "I have thought this about myself before now, distinctly enough that I might well have included a similar statement in a description of myself". Thus the eight groups were:

- (1) No characteristic, no construct, experimental
- (2) No characteristic, no construct, control
- (3) No characteristic, construct, experimental
- (4) No characteristic, construct, control
- (5) Characteristic, no construct, experimental
- (6) Characteristic, no construct, control
- (7) Characteristic, construct, experimental
- (8) Characteristic, construct, control

9.2.1.1.2 Selection of Tasks: In view of the confounding of persistence and interest which apparently occurred in the games in Experiment 3, it was decided to use computer tasks rather than games for Experiment 7. It was hoped that with careful consideration of various parameters, some tasks could be devised which would be more appropriate as measures of persistence in the face of frustration. Tasks were selected on the basis that a very few instructions would render them comprehensible, and that subjects would not be required to enter too much data from the keyboard. Half a dozen tasks which met these criteria and were considered fairly tedious to perform were selected. Judges assessed the potential tasks before the large amount of programming necessary to produce the chained tasks was undertaken. The tasks were described in full to the four judges and "on paper" examples of representative items were shown them. They were asked to evaluate the tasks as to whether they were suitable as measures of persistence, and according to their likely interest to Psychology I undergraduates. They had, however, to engage subjects' attention sufficiently that they would attempt them at all. These judgments were made in the context of an awareness of the games used previously and of the "interest" problem in that study. Thus judges were asked to compare the set of games with the set of tasks on the criteria described. A vocabulary task was dropped as being unsuitable as a measure of persistence, and a number-checking task was eliminated as being too dull to initiate any involvement in it. The four remaining tasks were regarded by all judges as suitable for the intended purpose. The tasks used were:

Task 1, "Word Matching Task", in which subjects must find the fourth word to complete a set, given the first three. There was a series of these to be done.

Task 2, "Translation Task", in which subjects were to translate a series of words either from Esperanto to English, or vice versa. To do the task they had to keep referring back to a paragraph in Esperanto and its English equivalent.

Task 3, "Word Search", in which they worked on the cloze task that was used in Experiments 2 and 3 ("Mouse").

Task 4, "Magic Square", in which the blanks in a 3 X 3 matrix had to be filled by numbers, such that it added up to the same number vertically and horizontally.

9.2.1.1.3 Experimental Strategy: Subjects were asked to come to the laboratory to participate in a study the aim of which was to determine the relationship between left- or

right-brain dominance and attitudes towards certain tasks. Thus they were asked to complete a bogus questionnaire, the "Cognitive Style Questionnaire" (see Appendix 5.2) and then to work on four different tasks, evaluating them one at a time. The tasks were chained together and run on the BBC computer in the same manner as were the games in Experiments 2 and 3. General Instructions to subjects are shown in Appendix 5.1. Subjects were told that since the experimenter was only interested in their attitudes to, or feelings about, the tasks, they need only spend long enough at each one to enable them to complete the rating scales (see Appendix 5.3). This was again a 3-phase study, with the first and second tasks being followed either by the manipulation or by the control communication. The subject was unaware that the computer was keeping track of the time spent on each task.

### **9.2.2 Method**

**9.2.2.1 Subjects:** Subjects were Psychology I undergraduates, enrolled in 1987, who had completed the Self-Construction Questionnaire and who had subsequently responded to a request that they be in a "Cognitive Style Study". The average age of those who contributed data to the analyses described here was 20.73 years (s.d.=6.26). Ages ranged from 16.25 years to 43.92 years.

**9.2.2.2 Procedure:** Initially the experimenter wrote to potential subjects (those who had completed the Self-Construction Questionnaire and for whom a contact department was available) through the university's internal mailing system. Subsequently she telephoned those individuals who did not respond to the letter to remind them of her request. In the letter she explained that she was interested in the relationship between cognitive style and attitudes to, or feelings about, different tasks. Students were asked to come to the Psychology Department office to sign on at a time which was personally convenient, and then to come to the experimental room at that time. The experimenter began sending letters at the beginning of the alphabet, but as the study progressed, she selectively contacted only those in groups with a smaller number of representatives.

When the subject came to the laboratory s/he was greeted in a friendly manner and asked to sit in front of the BBC which was placed on a wide desk with clear space to either side for the completion of questionnaires. The subject then completed the bogus questionnaire before the experimenter explained the procedure and indicated relevant keys on the computer's key-board to her/him. She stated that since the aim of the study was to determine the relationship between scoring on the questionnaire and the subject's attitudes to, or feelings about, the tasks, the subject should work on each task for "as long or as short a time as you need to, or want to, in order to evaluate it on the questionnaire". She explained further that the computer would guide her/him through the tasks, but that she (the experimenter) would be here reading and that the subject should feel quite free to ask questions at any point if necessary. The experimenter then sat at her table positioned, as it had been for Experiments 2 and 3, about five feet from the subject's desk and at an angle to the screen. She sat there reading while the subject worked on the tasks, answering any

questions in a friendly but brief manner, and delivered the manipulations at the appropriate points.

Subjects were initially assigned to a condition by a random process, but towards the end of the study, experimental and control conditions were simply alternated within each group so that numbers could be equalized.

It was decided to set a limit of 20 minutes for each task, so that the experiment could fit into an hour. Thus the experimenter kept an eye on the time, and, if it became necessary, at the 20 minute mark, regardless of condition, she said, "Don't forget you have three (two, one) more task(s) to evaluate".

Once the subject had completed all the tasks and ratings, s/he was thanked, and told that the experimenter would inform her/him of the results once the study was over and the analysis was completed. The debriefing, including a complete description of the results, was done through the internal mail system: subsequently subjects were able to visit the experimenter in her office if they required further information.

#### 9.2.2.3.1 Wording of Manipulations- Phase 1

Attribution: "How did you find that task? I think that one requires some persistence, don't you, to work out the best approach? I thought you seemed to be very persistent at it. You must be a persistent sort of person."

Control: "How did you find that task? I think that one requires some persistence, don't you, to work out the best approach? All the tasks are different. I had to type in quite a few before I found the ones I wanted."

#### 9.2.2.3.2 Wording of Manipulations - Phase 2

Attribution: "That one can be really frustrating sometimes, especially when it keeps making that noise at you. But you seemed to be very persistent at it. You really must be a persistent person."

Control: "That one can be really frustrating sometimes, especially when it keeps making that noise at you. But it's an unusual task to work on. It does require some persistence."

### 9.2.3 Results

#### 9.2.3.1 Numbers in Groups

After the administration of the Self-Construction Questionnaire, there were four groups. The numbers in each of these groups are shown in Table 9.2.1.



**Table 9.2.1: Numbers in groups by Characteristic and Construct.**

Group	N
(1) No characteristic, no construct	23
(2) No characteristic, construct	25
(3) Characteristic, no construct	39
(4) Characteristic, construct	71

Table 9.2.2 shows the numbers in the final eight groups after running the experiment.

**Table 9.2.2: Numbers in groups by Characteristic, Construct and Condition.**

Group	N
(1) No characteristic, no construct, experimental	8
(2) No characteristic, no construct, control	8
(3) No characteristic, construct, experimental	8
(4) No characteristic, construct, control	8
(5) Characteristic, no construct, experimental	10
(6) Characteristic, no construct, control	10
(7) Characteristic, construct, experimental	13
(8) Characteristic, construct, control	14

In order to equalize numbers in cells some subjects were excluded from Groups 5 to 8 by a random process. Thus the final number of subjects per group was eight.

### 9.2.3.2 Relationships between Self-Construction Score and Experimental Variables

A subsidiary aim of the study was to attempt to replicate some relationships which had previously been established between a Self-Construction score and various task-rating or experimental variables. To this end, composite scores were calculated across tasks for each task rating variable (e.g., "I thought I would do well at this task" summed across all four tasks). These scores were correlated with Self-Construction scores, as were the four times.

Out of 16 task-rating variables there was only one significant correlation with Self-Construction ("I felt tense while doing this task":  $r=.354$ ,  $N=64$ ,  $p=.002$ ), and there was a significant relationship with only one of the times (Time 1:  $r=-.287$ ,  $N=64$ ,  $p=.011$ ).

### 9.2.3.3 Relationship Between Prior Self-Concept of Persistence and Persistence Behaviour: Time 1

A 2 X 2 analysis of variance was calculated, using Time 1, time spent on the Word Matching Task, as the dependent measure, and comparing the four groups derived from the administration of the Self-Construction Questionnaire. There was no significant main effect, indicating that there was not a relationship between prior self-concept of persistence, and persistence behaviour in the face of a frustrating task. The means and standard deviations of the groups are set out in Table 9.2.3. The variability in times spent by the group with a

salient self-concept of persistence was greater than it was for other groups, but not significantly so.

**Table 9.2.3: Time spent on Task 1, by group.**

Group	Mean	s.d.
(1) No characteristic, no construct	7.09	3.48
(2) No characteristic, construct	8.12	4.48
(3) Characteristic, no construct	8.19	4.98
(4) Characteristic, construct	7.27	6.47

There was an unexpected (and inexplicable, given that at this point no subject had been exposed to any manipulation) significant interaction between Characteristic and Condition ( $F=4.44$ ,  $df=1$ ,  $p=.04$ ). Table 9.2.4 shows the means relevant to this interaction.

**Table 9.2.4: Mean time spent on Task 1, by Condition and Characteristic.**

Characteristic	no	yes
Condition - Experimental	8.76	6.05
Condition - Control	6.45	9.42

As a result of this effect, all subsequent analyses of times were done using Time 1 as a covariate.

#### 9.2.3.4 Comparison of Groups on Time Spent on Task 2

A 2 X 2 X 2 analysis of variance revealed no significant differences among the groups on time spent on the Translation Task, that task which subjects undertook after the first manipulation. Table 9.2.5 shows the means for all groups (combined group means: Experimental=13.12, Control=12.37).

**Table 9.2.5: Time spent on Task 2, by group.**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	13.25	4.09
(2) No characteristic, no construct, control	10.35	3.73
(3) No characteristic, construct, experimental	14.18	3.75
(4) No characteristic, construct, control	12.68	4.76
(5) Characteristic, no construct, experimental	13.32	3.60
(6) Characteristic, no construct, control	14.38	4.59
(7) Characteristic, construct, experimental	11.74	6.83
(8) Characteristic, construct, control	12.07	3.72

#### 9.2.3.5 Comparison of Groups on Time Spent on Task 3

An analysis of variance on the times spent on Word Search, that task which followed the second delivery of the manipulation, showed no main effects. There was, however, a significant interaction between Characteristic and Construct such that those with the

characteristic who were aconstructual and those without the characteristic who were constructual spent longer on the task. Table 9.2.6 shows the combined group means for this effect and Table 9.2.7 shows the means for all groups (combined group means: Experimental=10.36, Control=10.22).

**Table 9.2.6:** Combined group means for the interaction between Characteristic and Construct, time spent on Task 3.

Characteristic	no	yes
Construct - no	9.56	11.46
Construct - yes	11.26	8.89

**Table 9.2.7:** Time spent on Task 3, by group.

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	10.21	4.89
(2) No characteristic, no construct, control	8.91	3.06
(3) No characteristic, construct, experimental	11.64	4.37
(4) No characteristic, construct, control	10.87	3.36
(5) Characteristic, no construct, experimental	10.97	5.11
(6) Characteristic, no construct, control	11.95	3.79
(7) Characteristic, construct, experimental	8.63	3.92
(8) Characteristic, construct, control	9.17	4.17

Table 9.2.8 shows the results of the analysis of variance.

**Table 9.2.8:** Results of analysis of variance, time spent on Task 3.

Source of variation	SS	df	MS	F	p
Within cells	931.20	55	16.93		
Characteristic	26.57	1	26.57	1.57	.216
Construct	.72	1	.72	.04	.838
Condition	2.90	1	2.90	.17	.681
Characteristic X Construct	.06	1	.06	.00	.954
Characteristic X Condition	81.22	1	81.22	4.80	.033
Construct X Condition	24.55	1	24.55	1.45	.234
Characteristic X Construct X Condition	1.22	1	1.22	.07	.789

#### 9.2.3.6 Comparison of Groups on Time Spent on Task 4

Analysis showed that there were no significant differences among the groups on time spent on the final task, Magic Square. Table 9.2.9 shows the means for all groups (combined group means: Experimental=8.36, Control=7.17).

**Table 9.2.9: Time spent on Task 4, by group.**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	9.63	3.78
(2) No characteristic, no construct, control	7.92	3.16
(3) No characteristic, construct, experimental	9.45	3.90
(4) No characteristic, construct, control	7.08	3.73
(5) Characteristic, no construct, experimental	7.30	3.17
(6) Characteristic, no construct, control	5.66	1.52
(7) Characteristic, construct, experimental	7.05	3.09
(8) Characteristic, construct, control	8.03	2.79

### 9.2.3.7 Comparison of Groups on Task Ratings

Comparisons among groups on task ratings for individual tasks were carried out, as were comparisons on composite scores created across all tasks. All results reported in this section are the outcome of 2 X 2 X 2 analyses of variance. Results are reported in the order in which subjects worked at the tasks, Task 1 through to Task 4.

#### 9.2.3.7.1 Comparison of Groups on Ratings of Task 1, the Word Matching Task

Although time spent on the first task was not a dependent variable since no manipulation occurred until the subject left the task, the task ratings might have been affected since the first manipulation was delivered just as the subject was picking up the pen to do the ratings. There were in fact several Condition main effects for individual task ratings.

##### (1) "I thought I would do well at this task"

There was a significant Condition effect such that experimental subjects agreed more than did controls that they thought they would do well. Table 9.2.10 shows the means for all groups (combined group means: Experimental=4.65, Control=3.84), and Table 9.2.11 shows the results of the analysis of variance.

**Table 9.2.10: Means and standard deviations, by group, Task 1, "I thought I would do well at this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	3.63	1.51
(2) No characteristic, no construct, control	3.75	1.04
(3) No characteristic, construct, experimental	5.00	1.07
(4) No characteristic, construct, control	3.75	2.19
(5) Characteristic, no construct, experimental	5.50	.76
(6) Characteristic, no construct, control	4.13	2.10
(7) Characteristic, construct, experimental	4.50	1.51
(8) Characteristic, construct, control	3.75	1.39

**Table 9.2.11: Results of analysis of variance, Task 1, "I thought I would do well at this task".**

Source of variation	SS	df	MS	F	p
Within cells	129.25	56	2.31		
Characteristic	3.06	1	3.06	1.44	.254
Construct	.00	1	.00	.00	1.000
Condition	10.56	1	10.56	4.58	.037
Characteristic X Construct	7.56	1	7.56	3.28	.076
Characteristic X Condition	1.00	1	1.00	.43	.513
Construct X Condition	.56	1	.56	.24	.623
Characteristic X Construct X Condition	4.00	1	4.00	1.73	.193

(2) "Other students would try hard while doing this task"

Although there was no Condition effect, there were two significant interactions, between Characteristic and Condition, and Construct and Condition. Those in the experimental group who did not have the characteristic, and those in the control group who did, agreed to a lesser extent than did the others that other students would try hard. Table 9.2.12 shows the combined group means.

**Table 9.2.12: Combined group means, interaction between Characteristic and Condition, Task 1, "Other students would try hard while doing this task".**

Characteristic	no	yes
Condition - Experimental	4.00	4.75
Condition - Control	5.06	4.13

Table 9.2.13 shows the combined group means for the interaction between Construct and Condition. It can be seen that the effect was in the same direction as was the interaction between Characteristic and Condition.

**Table 9.2.13: Combined group means, interaction between Characteristic and Condition, Task 1, "Other students would try hard while doing this task".**

Construct	no	yes
Condition - Experimental	3.86	4.88
Condition - Control	4.69	4.50

The means and standard deviations for all groups are shown in Table 9.2.14, and the results of the analysis of variance in Table 9.2.15.

**Table 9.2.14: Means and standard deviations, by group, Task 1, "Other students would try hard while doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	3.36	.74
(2) No characteristic, no construct, control	5.00	1.07
(3) No characteristic, construct, experimental	4.63	1.51
(4) No characteristic, construct, control	5.13	.99
(5) Characteristic, no construct, experimental	4.38	.74
(6) Characteristic, no construct, control	4.38	1.77
(7) Characteristic, construct, experimental	5.13	.84
(8) Characteristic, construct, control	3.88	1.13

**Table 9.2.15: Results of analysis of variance, Task 1, "Other students would try hard while doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	74.12	56	1.32		
Characteristic	.14	1	.14	.11	.746
Construct	2.64	1	2.64	1.99	.163
Condition	.77	1	.77	.58	.450
Characteristic X Construct	1.27	1	1.27	.96	.332
Characteristic X Condition	11.39	1	11.39	8.61	.005
Construct X Condition	5.64	1	5.64	4.26	.044
Characteristic X Construct X Condition	.02	1	.02	.01	.914

(3) "I only felt like doing this task for a short time"

There was a significant Condition effect such that subjects in the control group agreed more than did those in the experimental group that they only felt like doing the task for a short time (combined group means: Experimental=3.50, Control=4.97). Means for all groups are shown in Table 9.2.16, and the results for the analysis of variance in Table 9.2.17.

**Table 9.2.16:** Means and standard deviations, by group, Task 1, "I only felt like doing this task for a short time".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	3.63	1.06
(2) No characteristic, no construct, control	5.00	1.31
(3) No characteristic, construct, experimental	2.63	1.19
(4) No characteristic, construct, control	5.38	1.69
(5) Characteristic, no construct, experimental	3.63	1.51
(6) Characteristic, no construct, control	4.76	2.61
(7) Characteristic, construct, experimental	4.13	1.64
(8) Characteristic, construct, control	4.75	1.83

**Table 9.2.17:** Results of analysis of variance, Task 1, "I only felt like doing this task for a short time".

Source of variation	SS	df	MS	F	p
Within cells	155.37	56	2.77		
Characteristic	.39	1	.39	.14	.709
Construct	.02	1	.02	.01	.940
Condition	34.52	1	34.52	12.44	.001
Characteristic X Construct	1.27	1	1.27	.46	.502
Characteristic X Condition	5.64	1	5.64	2.03	.159
Construct X Condition	.77	1	.77	.28	.601
Characteristic X Construct X Condition	3.52	1	3.52	1.27	.265

This result provided some evidence that subjects had heard and processed the manipulation. That is, having just been told that they were persistent, by disagreeing (relative to the controls) that they only felt like doing the task for a short time, subjects in the experimental group were perhaps trying to demonstrate to the experimenter in their rating of the task that they were indeed persistent.

(4) "I enjoyed doing this task"

There was a Condition effect, such that subjects in the experimental group agreed more than did subjects in the control group that they enjoyed the task (combined group means: Experimental=4.84, Control=4.09). Tables 9.2.18 and 9.2.19 respectively show the means for all groups and the results of the analysis of variance.

**Table 9.2.18: Means and standard deviations, by group, Task 1, "I enjoyed doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.38	1.41
(2) No characteristic, no construct, control	4.25	1.39
(3) No characteristic, construct, experimental	5.25	1.17
(4) No characteristic, construct, control	3.88	2.03
(5) Characteristic, no construct, experimental	4.38	1.59
(6) Characteristic, no construct, control	4.25	1.67
(7) Characteristic, construct, experimental	5.38	1.18
(8) Characteristic, construct, control	4.00	1.07

**Table 9.2.19: Results of analysis of variance, Task 1, "I enjoyed doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	121.00	56	2.16		
Characteristic	.06	1	.06	.03	.866
Construct	1.56	1	1.56	.72	.399
Condition	9.00	1	9.00	4.17	.046
Characteristic X Construct	.06	1	.06	.03	.866
Characteristic X Condition	.00	1	.00	.00	1.000
Construct X Condition	6.25	1	6.25	2.89	.095
Characteristic X Construct X Condition	.00	1	.00	.00	1.000

(5) "I tried hard while doing this task"

Subjects in the experimental group agreed to a greater extent than did those in the control group that they tried hard (combined group means: Experimental=5.78, Control=5.13). Tables 9.2.20 and 9.2.21 show the results in detail.

**Table 9.2.20: Means and standard deviations, by group, Task 1, "I tried hard while doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	5.88	.99
(2) No characteristic, no construct, control	5.50	.93
(3) No characteristic, construct, experimental	6.13	.84
(4) No characteristic, construct, control	4.63	1.51
(5) Characteristic, no construct, experimental	5.63	.74
(6) Characteristic, no construct, control	5.38	1.19
(7) Characteristic, construct, experimental	5.50	1.07
(8) Characteristic, construct, control	5.00	1.41



**Table 9.2.21: Results of analysis of variance, Task 1, "I tried hard while doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	69.37	56	1.24		
Characteristic	.39	1	.39	.32	.577
Construct	1.27	1	1.27	1.02	.316
Condition	6.89	1	6.89	5.56	.022
Characteristic X Construct	.02	1	.02	.01	.911
Characteristic X Condition	1.27	1	1.27	1.02	.316
Construct X Condition	1.89	1	1.89	1.33	.222
Characteristic X Construct X Condition	.77	1	.77	.62	.435

(6) "I did well at this task"

The experimental group had a higher mean agreement than did the control group on the statement "I did well at this task" (combined group means: Experimental=2.69, Control=1.81), although it is noteworthy that subjects in neither group felt that they did well. The subjective judgment of the experimenter was that subjects found the task difficult and frustrating, and that it was therefore a very suitable task for the purpose of labelling experimental subjects "persistent". The results are set out in Tables 9.2.22 and 9.2.23.

**Table 9.2.22: Means and standard deviations, by group, Task 1, "I did well at this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	2.13	.84
(2) No characteristic, no construct, control	2.75	1.39
(3) No characteristic, construct, experimental	3.13	1.81
(4) No characteristic, construct, control	1.63	.74
(5) Characteristic, no construct, experimental	2.63	1.30
(6) Characteristic, no construct, control	1.38	.74
(7) Characteristic, construct, experimental	2.88	1.46
(8) Characteristic, construct, control	1.50	.76

**Table 9.2.23: Results of analysis of variance, Task 1, "I did well at this task".**

Source of variation	SS	df	MS	F	p
Within cells	79.75	56	1.42		
Characteristic	1.56	1	1.56	1.10	.299
Construct	.06	1	.06	.04	.835
Condition	12.25	1	12.25	8.60	.005
Characteristic X Construct	.25	1	.25	.18	.677
Characteristic X Condition	3.06	1	3.06	2.15	.148
Construct X Condition	5.06	1	5.06	3.55	.065
Characteristic X Construct X Condition	4.00	1	4.00	2.81	.099

## (7) "I wanted to keep doing this task"

There was a significant interaction between Construct and Condition in the direction that those in the experimental group with a construct agreed to a greater extent than did those in the control group with a construct (see Table 9.2.24). As a high correlation would be likely between this item and "I only felt like doing this task for a short time", it is not surprising that the Condition main effect approached significance.

**Table 9.2.24: Combined group means, interaction between Characteristic and Condition, Task 1, "I wanted to keep doing this task".**

Construct	no	yes
Condition - Experimental	4.00	5.19
Condition - Control	4.06	3.19

Tables 9.2.25 and 9.2.26 show the results in detail.

**Table 9.2.25: Means and standard deviations, by group, Task 1, "I wanted to keep doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.13	1.46
(2) No characteristic, no construct, control	4.00	1.51
(3) No characteristic, construct, experimental	5.75	2.12
(4) No characteristic, construct, control	3.63	2.62
(5) Characteristic, no construct, experimental	3.88	1.73
(6) Characteristic, no construct, control	4.13	2.69
(7) Characteristic, construct, experimental	4.63	1.92
(8) Characteristic, construct, control	2.75	2.19

**Table 9.2.26: Results of analysis of variance, Task 1, "I wanted to keep doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	24.38	56	4.31		
Characteristic	4.52	1	4.52	1.05	.310
Construct	.39	1	.39	.09	.764
Condition	15.02	1	15.02	3.48	.067
Characteristic X Construct	3.52	1	3.52	.82	.370
Characteristic X Condition	.39	1	.39	.09	.764
Construct X Condition	17.02	1	17.02	3.95	.052
Characteristic X Construct X Condition	.02	1	.02	.00	.952

(8) "It took me a little while to work out the best way of doing this task"

Once again there was a significant Condition effect in the direction that might be regarded as most socially desirable if the aim of the experimental subjects were to please the experimenter (combined group means: Experimental=4.44, Control=5.31). Table 9.2.27 shows the means for all groups and Table 9.2.28 shows the results of the analysis of variance.

**Table 9.2.27: Means and standard deviations, by group, Task 1, "It took me a little while to work out the best way of doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.38	1.41
(2) No characteristic, no construct, control	5.13	1.46
(3) No characteristic, construct, experimental	3.75	2.05
(4) No characteristic, construct, control	5.75	.89
(5) Characteristic, no construct, experimental	5.13	1.25
(6) Characteristic, no construct, control	5.50	1.41
(7) Characteristic, construct, experimental	4.50	1.77
(8) Characteristic, construct, control	4.88	1.89

**Table 9.2.28:** Results of analysis of variance, Task 1, "It took me a little while to work out the best way of doing this task".

Source of variation	SS	df	MS	F	p
Within cells	135.50	56	2.42		
Characteristic	1.00	1	1.00	.41	.523
Construct	1.56	1	1.56	.65	.425
Condition	12.25	1	12.25	5.06	.028
Characteristic X Construct	1.56	1	1.56	.65	.425
Characteristic X Condition	4.00	1	4.00	1.65	.204
Construct X Condition	1.56	1	1.56	.65	.425
Characteristic X Construct X Condition	1.56	1	1.56	.65	.425

In conclusion, it is apparent that the ratings of the first task were affected by the manipulation.

#### 9.2.3.7.2 Comparison of Groups on Ratings of Task 2, the Translation Task

There were some significant differences among groups in their ratings of the second task, but few of these were simple main effects, so that the results were not easy to interpret. This was also the case with the ratings of Tasks 3 and 4.

##### (1) "Other students would try hard while doing this task"

There was a significant interaction between Characteristic and Condition such that experimental subjects who did not have the characteristic, and control subjects who did, agreed less than did the other two groups that other students would try hard at the task. Table 9.2.29 shows the combined group means.

**Table 9.2.29:** Combined group means, interaction between Characteristic and Condition, Task 2, "Other students would try hard while doing this task".

Characteristic	no	yes
Condition - Experimental	4.00	4.69
Condition - Control	4.88	4.25

Table 9.2.30 shows the means for all groups, and Table 9.2.31 shows the results of the analysis of variance.

**Table 9.2.30: Means and standard deviations, by group, Task 2, "Other students would try hard while doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	3.88	.99
(2) No characteristic, no construct, control	5.00	1.31
(3) No characteristic, construct, experimental	4.13	1.55
(4) No characteristic, construct, control	4.75	.89
(5) Characteristic, no construct, experimental	4.63	1.30
(6) Characteristic, no construct, control	4.86	1.25
(7) Characteristic, construct, experimental	4.75	1.04
(8) Characteristic, construct, control	3.63	.92

**Table 9.2.31: Results of analysis of variance, Task 2, "Other students would try hard while doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	77.37	56	1.38		
Characteristic	.02	1	.02	.01	.916
Construct	1.27	1	1.27	.92	.343
Condition	.77	1	.77	.55	.460
Characteristic X Construct	1.27	1	1.27	.92	.343
Characteristic X Condition	6.89	1	6.89	4.99	.030
Construct X Condition	3.52	1	3.52	2.54	.116
Characteristic X Construct X Condition	.77	1	.77	.55	.460

(2) "I tried hard while doing this task"

Experimental subjects agreed to a greater extent than did controls that they tried hard while doing the task (combined group means: Experimental=6.13, Control=5.72). Detailed results are shown in Tables 9.2.32 and 9.2.33.

**Table 9.2.32: Means and standard deviations, by group, Task 2, "I tried hard while doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	6.63	.52
(2) No characteristic, no construct, control	5.75	.71
(3) No characteristic, construct, experimental	6.25	.46
(4) No characteristic, construct, control	5.75	.89
(5) Characteristic, no construct, experimental	6.00	.76
(6) Characteristic, no construct, control	5.88	.64
(7) Characteristic, construct, experimental	5.63	.52
(8) Characteristic, construct, control	5.50	1.31

**Table 9.2.33: Results of analysis of variance, Task 2, "I tried hard while doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	33.13	56	.59		
Characteristic	1.89	1	1.89	3.20	.079
Construct	1.27	1	1.27	2.14	.149
Condition	2.64	1	2.64	4.46	.039
Characteristic X Construct	.14	1	.14	.24	.628
Characteristic X Condition	1.27	1	1.27	2.14	.149
Construct X Condition	.14	1	.14	.24	.628
Characteristic X Construct X Condition	.14	1	.14	.24	.628

(3) "I did well at this task"

There was a significant interaction between Construct and Condition such that experimental subjects with the construct and control subjects without it agreed to a lesser extent that they did well at the task. Table 9.2.34 shows the combined group means, and Tables 9.2.35 and 9.2.36 show the results in detail.

**Table 9.2.34: Combined group means, interaction between Construct and Condition, Task 2, "I did well at this task".**

Construct	no	yes
Condition - Experimental	4.50	4.19
Condition - Control	3.50	4.88

**Table 9.2.35: Means and standard deviations, by group, Task 2, "I did well at this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.75	1.28
(2) No characteristic, no construct, control	4.38	1.92
(3) No characteristic, construct, experimental	4.50	2.27
(4) No characteristic, construct, control	4.63	1.30
(5) Characteristic, no construct, experimental	4.25	1.83
(6) Characteristic, no construct, control	2.63	1.50
(7) Characteristic, construct, experimental	3.88	1.25
(8) Characteristic, construct, control	5.13	.84

**Table 9.2.36: Results of analysis of variance, Task 2, "I did well at this task".**

Source of variation	SS	df	MS	F	p
Within cells	140.37	56	2.51		
Characteristic	5.64	1	5.64	2.25	.139
Construct	4.52	1	4.52	1.80	.185
Condition	.39	1	.39	.16	.695
Characteristic X Construct	4.52	1	4.52	1.80	.185
Characteristic X Condition	.02	1	.02	.01	.937
Construct X Condition	11.39	1	11.39	4.54	.037
Characteristic X Construct X Condition	5.64	1	5.64	2.25	.139

## (4) "It took me a little while to work out the best way of doing this task"

There were two significant effects, one main Condition effect (combined group means: Experimental=4.13, Control=4.97) and one interaction between Construct and Condition in relation to the item "It took me a little while to work out the best way of doing this task". Experimental subjects without a construct agreed with the statement to a lesser degree than did control subjects without a construct. Tables 9.2.37 to 9.2.39 show the results of the analyses.

**Table 9.2.37: Combined group means, interaction between Construct and Condition, Task 2, "It took me a little while to work out the best way of doing this task".**

Construct	no	yes
Condition - Experimental	3.56	4.69
Condition - Control	5.31	4.63

**Table 9.2.38: Means and standard deviations, by group, Task 2, "It took me a little while to work out the best way of doing this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.00	1.85
(2) No characteristic, no construct, control	5.00	1.31
(3) No characteristic, construct, experimental	4.13	2.17
(4) No characteristic, construct, control	4.25	1.28
(5) Characteristic, no construct, experimental	3.13	1.13
(6) Characteristic, no construct, control	5.63	1.06
(7) Characteristic, construct, experimental	5.25	1.17
(8) Characteristic, construct, control	5.00	1.41

**Table 9.2.39: Results of analysis of variance, Task 2, " It took me a little while to work out the best way of doing this task".**

Source of variation	SS	df	MS	F	p
Within cells	120.63	56	2.15		
Characteristic	2.64	1	2.64	1.23	.273
Construct	.77	1	.77	.36	.553
Condition	11.39	1	11.39	5.29	.025
Characteristic X Construct	4.52	1	4.52	2.10	.153
Characteristic X Condition	1.27	1	1.27	.59	.447
Construct X Condition	13.14	1	13.14	6.10	.017
Characteristic X Construct X Condition	3.52	1	3.52	1.63	.207

### 9.2.3.7.3 Comparison of Groups on Ratings of Task 3, Word Search

#### (1) "Other students would enjoy doing this task"

There were significant Condition and Characteristic main effects and a significant interaction between Construct and Condition in the rating of Task 3 on "Other students would enjoy doing this task". The experimental group agreed significantly less with the statement (combined group means: Experimental=4.50, Control=5.16), and those in the experimental group without a construct agreed significantly less with it than did those in the control group without a construct (see Table 9.2.40 for combined group means). Those with the characteristic agreed marginally significantly less with the statement than did those without it (combined group means: No Characteristic=4.56, Characteristic=5.09).

**Table 9.2.40: Combined group means, interaction between Construct and Condition, Task 3, "Other students would enjoy doing this task".**

Construct	no	yes
Condition - Experimental	4.19	4.81
Condition - Control	5.69	4.63

Tables 9.2.41 and 9.2.42 show the results in full.



**Table 9.2.41:** Means and standard deviations, by group, Task 3, "Other students would enjoy doing this task".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	3.88	1.25
(2) No characteristic, no construct, control	5.38	.92
(3) No characteristic, construct, experimental	4.50	1.41
(4) No characteristic, construct, control	4.50	.76
(5) Characteristic, no construct, experimental	4.50	1.31
(6) Characteristic, no construct, control	6.00	1.01
(7) Characteristic, construct, experimental	5.13	.84
(8) Characteristic, construct, control	4.75	.89

**Table 9.2.42:** Results of analysis of variance, Task 3, "Other students would enjoy doing this task".

Source of variation	SS	df	MS	F	p
Within cells	65.13	56	1.16		
Characteristic	4.52	1	4.52	3.88	.054
Construct	.77	1	.77	.66	.421
Condition	6.89	1	6.89	5.93	.018
Characteristic X Construct	.14	1	.14	.12	.729
Characteristic X Condition	.14	1	.14	.12	.729
Construct X Condition	11.39	1	11.39	9.79	.003
Characteristic X Construct X Condition	.14	1	.14	.12	.729

(2) "I would sometimes like to do tasks similar to this one for recreation"

There was a significant Condition main effect such that subjects in the experimental group agreed less that they would sometimes like to do similar tasks for recreation (combined group means: Experimental=4.09, Control=4.91). There was also an interaction between Construct and Condition. As Table 9.2.43 shows, those in the experimental condition without a construct agreed less than did those in the control condition without a construct.

**Table 9.2.43:** Combined group means, interaction between Construct and Condition, Task 3, "I would sometimes like to do tasks similar to this one for recreation".

Construct	no	yes
Condition - Experimental	3.25	4.94
Condition - Control	5.56	4.25

Tables 9.2.44 and 9.2.45 respectively show the means and standard deviations for all groups and the results of the analysis of variance.

**Table 9.2.44:** Means and standard deviations, by group, Task 3, "I would sometimes like to do tasks similar to this one for recreation".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	2.50	1.69
(2) No characteristic, no construct, control	5.25	1.28
(3) No characteristic, construct, experimental	5.50	.76
(4) No characteristic, construct, control	3.38	2.26
(5) Characteristic, no construct, experimental	4.00	1.93
(6) Characteristic, no construct, control	5.88	1.13
(7) Characteristic, construct, experimental	4.38	1.30
(8) Characteristic, construct, control	5.13	1.13

**Table 9.2.45:** Results of analysis of variance, Task 3, "I would sometimes like to do tasks similar to this one for recreation".

Source of variation	SS	df	MS	F	p
Within cells	127.00	56	2.27		
Characteristic	7.56	1	7.56	3.33	.073
Construct	.56	1	.56	.25	.620
Condition	10.56	1	10.56	4.66	.035
Characteristic X Construct	2.25	1	2.25	.99	.324
Characteristic X Condition	4.00	1	4.00	1.76	.190
Construct X Condition	36.00	1	36.00	15.87	.0001
Characteristic X Construct X Condition	14.06	1	14.06	6.20	.016

(3) "Other students would try hard while doing this task"

There was a significant interaction between Construct and Condition on the task rating variable "Other students would try hard while doing this task". Those in the experimental group without a construct and those in the control group with a construct agreed to a lesser extent with the statement than did those in the other two groups. Combined group means are shown in Table 9.2.46. As can be seen, the direction of the difference among groups was the same as it was for both previous items "Other students would enjoy doing this task" and "I would sometimes like to do tasks similar to this one for recreation". Complete results appear in Tables 9.2.47 and 9.2.48.

**Table 9.2.46:** Combined group means, interaction between Construct and Condition, Task 3, "Other students would try hard while doing this task".

Construct	no	yes
Condition - Experimental	4.31	4.69
Condition - Control	5.44	4.63

**Table 9.2.47:** Means and standard deviations, by group, Task 3, "Other students would try hard while doing this task".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.00	1.07
(2) No characteristic, no construct, control	5.38	.92
(3) No characteristic, construct, experimental	4.75	1.58
(4) No characteristic, construct, control	4.88	.64
(5) Characteristic, no construct, experimental	4.63	1.06
(6) Characteristic, no construct, control	5.50	.93
(7) Characteristic, construct, experimental	4.63	1.19
(8) Characteristic, construct, control	4.38	1.30

**Table 9.2.48:** Results of analysis of variance, Task 3, "Other students would try hard while doing this task".

Source of variation	SS	df	MS	F	p
Within cells	69.87	55	1.25		
Characteristic	.02	1	.02	.01	.911
Construct	.77	1	.77	.61	.437
Condition	4.52	1	4.52	3.62	.062
Characteristic X Construct	1.89	1	1.89	1.52	.223
Characteristic X Condition	.77	1	.77	.61	.437
Construct X Condition	5.64	1	5.64	4.52	.038
Characteristic X Construct X Condition	.02	1	.02	.01	.911

(4) "This task was interesting"

On "this task was interesting" there was again an interaction in the same direction as those described above, and an additional interaction between Characteristic and Condition. The latter interaction was in the direction that amongst subjects with the characteristic those in the experimental group agreed less with the statement than did those in the control group. The combined group means are displayed in Tables 9.2.49 and 9.2.50. Detailed results are shown in Tables 9.2.51 and 9.2.52.

**Table 9.2.49:** Combined group means, interaction between Construct and Condition, Task 3, "This task was interesting".

Construct	no	yes
Condition - Experimental	4.75	5.63
Condition - Control	5.88	5.50

**Table 9.2.50:** Combined group means, interaction between Characteristic and Condition, Task 3, "This task was interesting".

Characteristic	no	yes
Condition - Experimental	5.38	5.00
Condition - Control	5.25	6.13

**Table 9.2.51:** Means and standard deviations, by group, Task 3, "This task was interesting".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.88	1.55
(2) No characteristic, no construct, control	5.63	1.19
(3) No characteristic, construct, experimental	5.88	.64
(4) No characteristic, construct, control	4.88	1.46
(5) Characteristic, no construct, experimental	4.63	1.77
(6) Characteristic, no construct, control	6.13	.84
(7) Characteristic, construct, experimental	5.36	1.19
(8) Characteristic, construct, control	6.13	.35

**Table 9.2.52:** Results of analysis of variance, Task 3, "This task was interesting".

Source of variation	SS	df	MS	F	p
Within cells	82.00	56	1.46		
Characteristic	1.00	1	1.00	.68	.412
Construct	1.00	1	1.00	.68	.412
Condition	4.00	1	4.00	2.73	.104
Characteristic X Construct	.25	1	.25	.17	.681
Characteristic X Condition	6.25	1	6.25	4.27	.043
Construct X Condition	6.25	1	6.25	4.27	.043
Characteristic X Construct X Condition	1.00	1	1.00	.68	.412

(5) "I enjoyed doing this task"

Subjects with the characteristic agreed more than did subjects without it that they enjoyed doing the task (combined group means: No characteristic=4.97,

Characteristic=5.69). Means and standard deviations, by group, are shown in Table 9.2.53, and the results of the analysis of variance appear in Table 9.2.54.

**Table 9.2.53:** Means and standard deviations, by group, Task 3, "I enjoyed doing this task".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.13	1.64
(2) No characteristic, no construct, control	5.63	1.06
(3) No characteristic, construct, experimental	5.13	1.73
(4) No characteristic, construct, control	5.00	1.85
(5) Characteristic, no construct, experimental	5.25	1.04
(6) Characteristic, no construct, control	6.13	.84
(7) Characteristic, construct, experimental	5.63	.74
(8) Characteristic, construct, control	5.75	.71

**Table 9.2.54:** Results of analysis of variance, Task 3, "I enjoyed doing this task".

Source of variation	SS	df	MS	F	p
Within cells	91.38	56	1.63		
Characteristic	8.27	1	8.27	5.07	.028
Construct	.14	1	.14	.09	.770
Condition	5.64	1	5.64	3.46	.068
Characteristic X Construct	.14	1	.14	.09	.770
Characteristic X Condition	.14	1	.14	.09	.770
Construct X Condition	5.64	1	5.64	3.46	.068
Characteristic X Construct X Condition	.77	1	.77	.47	.496

#### 9.2.3.7.4 Comparison of Groups on Ratings of Task 4, Magic Square

##### (1) "Other students would try hard while doing this task"

There was a significant interaction between Characteristic and Construct such that those with the characteristic but with no construct and those without the characteristic but with a construct agreed more than did the other two groups that other students would try hard. Table 9.2.55 shows the combined group means.

**Table 9.2.55:** Combined group means, interaction between Characteristic and Construct, Task 4, "Other students would try hard while doing this task".

Characteristic	no	yes
Construct - no	4.81	5.06
Construct - yes	5.31	4.25

Tables 9.2.56 and 9.2.57 show the results in detail.

**Table 9.2.56:** Means and standard deviations, by group, Task 4, "Other students would try hard while doing this task".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	4.25	1.49
(2) No characteristic, no construct, control	5.38	1.30
(3) No characteristic, construct, experimental	5.13	1.46
(4) No characteristic, construct, control	5.50	.93
(5) Characteristic, no construct, experimental	5.00	1.07
(6) Characteristic, no construct, control	5.13	1.36
(7) Characteristic, construct, experimental	4.25	1.04
(8) Characteristic, construct, control	4.25	.71

**Table 9.2.57:** Results of analysis of variance, Task 4, "Other students would try hard while doing this task".

Source of variation	SS	df	MS	F	p
Within cells	80.12	56	1.43		
Characteristic	2.64	1	2.64	1.85	.180
Construct	.39	1	.39	.27	.603
Condition	2.64	1	2.64	1.85	.180
Characteristic X Construct	6.89	1	6.89	4.82	.032
Characteristic X Condition	1.89	1	1.89	1.32	.255
Construct X Condition	.77	1	.77	.54	.468
Characteristic X Construct X Condition	.39	1	.39	.27	.603

(2) "I did well at this task"

Subjects in the Experimental group without a construct and those in the control group with a construct agreed more that they did well at the final task than did subjects in the other two groups. Table 9.2.58 shows the combined group means, and Tables 9.2.59 and 9.2.60 respectively show the means for all groups and the results of the analysis of variance.

**Table 9.2.58:** Combined group means, interaction between Construct and Condition, Task 2, "I did well at this task".

Construct	no	yes
Condition - Experimental	5.94	4.88
Condition - Control	4.38	5.31

**Table 9.2.59: Means and standard deviations, by group, Task 4, "I did well at this task".**

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	5.88	.84
(2) No characteristic, no construct, control	5.13	1.73
(3) No characteristic, construct, experimental	4.75	1.83
(4) No characteristic, construct, control	4.75	1.58
(5) Characteristic, no construct, experimental	6.00	1.07
(6) Characteristic, no construct, control	3.63	2.39
(7) Characteristic, construct, experimental	5.00	1.07
(8) Characteristic, construct, control	5.88	.64

**Table 9.2.60: Results of analysis of variance, Task 4, "I did well at this task".**

Source of variation	SS	df	MS	F	p
Within cells	125.50	56	2.24		
Characteristic	.00	1	.00	.00	1.000
Construct	.06	1	.06	.03	.868
Condition	5.06	1	5.06	2.26	.138
Characteristic X Construct	7.56	1	7.56	3.37	.072
Characteristic X Condition	.56	1	.56	.25	.618
Construct X Condition	16.00	1	16.00	7.14	.010
Characteristic X Construct X Condition	6.25	1	6.25	2.79	.101

#### 9.2.3.7.5 Comparison of Groups on Composite Task Rating Scores

Composite task rating scores were calculated across tasks (for example, scores on "This task was interesting" were added across all four tasks). Analyses of variance were carried out to compare groups on these scores, and the items were also factor analyzed in order to determine whether there were any patterns of responding. Factor scores were calculated and were subjected to analysis of variance. Because it does order the findings to some extent, and in view of the limitations of space, the factor analysis only will be described.

##### 9.2.3.7.5.1 Results of Factor Analysis of Composite Task Rating Scores

A principal components factor analysis with oblique rotation showed that there were six essentially uncorrelated factors (see Table 9.2.61) accounting for 79.6 percent of the variance. The eigenvalues and percent of variance of each factor after a varimax rotation are shown in Table 9.2.62, and Table 9.2.63 shows the items and factor loadings.

**Table 9.2.61:** Factor analysis of composite task rating scores - factor intercorrelation matrix.

Factor	1	2	3	4	5
1					
2	.071				
3	.160	.108			
4	-.031	.086	-.032		
5	.195	-.102	.053	-.083	
6	-.034	.019	.132	.030	.017

**Table 9.2.62:** Factor analysis of composite task rating scores - eigenvalues and percent of variance of each factor after a varimax rotation.

Factor	Eigenvalue	% of var.	Cum. %
1	4.34	27.1	27.1
2	2.63	16.4	43.5
3	2.11	13.2	56.7
4	1.42	8.9	65.6
5	1.15	7.2	72.8
6	1.09	6.8	79.6

The factors set out in Table 9.2.63 might be seen as Factor 1, Enjoyment, Factor 2, Caring About Outcome, Factor 3, Other Students' Reactions, Factor 4, Doing Well, Factor 5, a Working Out factor, and Factor 6, a Trying factor.

Although only Factors 1, 2 and 3 accounted for enough of the variance to be taken seriously as factors, for the purpose of comparing groups, analyses of variance were carried out on factor scores for all factors. Three significant effects were found, on Factors 3 ( $F=4.25$ ,  $df=1$ ,  $p=.049$ ), 4 ( $F=4.04$ ,  $df=1$ ,  $p=.049$ ) and 5 ( $F=5.82$ ,  $df=1$ ,  $p=.019$ ). In the case of the Other Students' Reactions factor, the mean factor score of the experimental group was lower than it was for the control group (combined group means: Experimental=-.265, Control=.229). This was also the case for the Working Out factor (combined group means: Experimental=-.282, Control=.305). Subjects in the experimental group had higher scores than did controls on the Doing Well factor (combined group means: Experimental=.211, Control=-.259). There was also a significant interaction between Characteristic and Condition ( $F=4.63$ ,  $df=1$ ,  $p=.036$ ) such that amongst those subjects without the characteristic, the control group had higher factor scores (see Table 9.2.64 for combined group means).



**Table 9.2.63: Factor analysis of composite task rating scores - items in each factor and factor loadings.**

Item/Factor	1	2	3	4	5	6
I enjoyed doing this task.	.831		.321			
I wanted to keep doing this task.	.809					
This task was interesting.	.802					.338
I only felt like doing this task for a short time.	-.765					
I would sometimes like to do tasks similar to this one for recreation.	.686		.348			
I cared very much how well I did at this task.		.932				
It was important to me that I do well at this task.		.901				
Other students would enjoy doing this task.			.893			
Other students would try hard while doing this task.			.838			
Most students would be bored by this task.	-.432		-.628			
I did well at this task.				.869		
I thought I would do well at this task.	.407			.656		
It would take most students a little while to work out the best way of doing this task.					.860	
It took me a little while to work out the best way of doing this task.				-.542	.665	
I tried hard while doing this task.	.369					.806
I felt tense while doing this task.						.605

**Table 9.2.64: Combined group means, interaction between Characteristic and Condition, factor scores, Doing Well factor.**

Characteristic	no	yes
Condition - Experimental	-.530	-.035
Condition - Control	.582	.028

#### 9.2.3.7.5.2 Additional Differences Among Groups

Items on which there were significant differences among groups which are not covered by the analyses on the factor scores were "I only felt like doing this task for a short time" and "I tried hard while doing this task".

(1) "I only felt like doing this task for a short time"

The experimental group had a lower average rating on this item (combined group means: Experimental=13.25, Control=15.75). A significant interaction between Characteristic and Condition showed that amongst those subjects without the characteristic there was a markedly greater difference between experimental and control scores. Control subjects had a much higher composite score on "I only felt like doing this task for a short time". Table 9.2.65 shows the combined group means and Table 9.2.66 shows the means for all groups. Table 9.2.67 shows the results of the analysis of variance.

**Table 9.2.65:** Combined group means, interaction between Characteristic and Condition, composite task rating scores, "I only felt like doing this task for a short time".

Characteristic	no	yes
Condition - Experimental	12.00	14.50
Condition - Control	16.94	14.56

**Table 9.2.66:** Means and standard deviations, by group, composite task rating scores, "I only felt like doing this task for a short time".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	12.88	1.64
(2) No characteristic, no construct, control	15.63	1.59
(3) No characteristic, construct, experimental	11.13	3.18
(4) No characteristic, construct, control	18.25	3.33
(5) Characteristic, no construct, experimental	14.13	3.48
(6) Characteristic, no construct, control	16.00	5.13
(7) Characteristic, construct, experimental	14.88	4.73
(8) Characteristic, construct, control	13.13	3.09

**Table 9.2.67:** Results of analysis of variance, composite task rating scores, "I only felt like doing this task for a short time".

Source of variation	SS	df	MS	F	p
Within cells	677.75	56	12.10		
Characteristic	.06	1	.06	.01	.943
Construct	1.56	1	1.56	.13	.721
Condition	100.00	1	100.00	8.26	.006
Characteristic X Construct	9.00	1	9.00	.74	.392
Characteristic X Condition	95.06	1	95.06	7.85	.007
Construct X Condition	.56	1	.56	.05	.830
Characteristic X Construct X Condition	64.00	1	64.00	5.29	.025

## (2) "I tried hard while doing this task"

There was a significant Condition effect with the experimental group having a significantly higher composite score (combined group means: Experimental=23.25, Control=21.69). Tables 9.2.68 and 9.2.69 show the results.

**Table 9.2.68:** Means and standard deviations, by group, composite task rating scores, "I tried hard while doing this task".

Group	Mean	s.d.
(1) No characteristic, no construct, experimental	23.75	3.11
(2) No characteristic, no construct, control	22.53	2.67
(3) No characteristic, construct, experimental	24.50	2.20
(4) No characteristic, construct, control	20.29	2.29
(5) Characteristic, no construct, experimental	23.13	2.23
(6) Characteristic, no construct, control	22.13	2.64
(7) Characteristic, construct, experimental	21.63	1.92
(8) Characteristic, construct, control	21.75	2.77

**Table 9.2.69:** Results of analysis of variance, composite task rating scores, "I tried hard while doing this task".

Source of variation	SS	df	MS	F	p
Within cells	345.93	55	6.29		
Characteristic	6.32	1	6.32	1.00	.321
Construct	11.79	1	11.79	1.87	.177
Condition	37.94	1	37.94	6.03	.017
Characteristic X Construct	.08	1	.08	.01	.911
Characteristic X Condition	19.58	1	19.58	3.11	.083
Construct X Condition	3.79	1	3.79	.60	.441
Characteristic X Construct X Condition	17.45	1	17.45	2.77	.101

**Table 9.2.70:** Pearson r correlations between times and task ratings, by group (E=experimental, C=control).

Time	1		2		3		4	
	E	C	E	C	E	C	E	C
I thought I would do well at this task.	-.288	.134	.258	.010	.289	-.053	.022	-.235
It was important to me that I do well at this task.	.188	.081	<b>.455</b>	.248	.184	-.216	.169	<b>-.429</b>
Other students would enjoy doing this task.	<b>.384</b>	.188	-.058	.098	-.037	.066	<b>.344</b>	-.261
I felt tense while doing this task.	-.012	-.021	-.158	.132	.133	-.037	.018	.186
I would sometimes like to do tasks similar to this one for recreation.	<b>.335</b>	.039	.149	.249	<b>.358</b>	-.041	.090	-.219
Other students would try hard while doing this task.	.204	.082	.018	.259	-.035	.116	-.007	-.116
This task was interesting.	.241	<b>.363</b>	.221	.217	.305	.007	.113	-.128
I only felt like doing this task for a short time.	<b>-.319</b>	-.208	<b>-.435</b>	-.126	<b>-.570</b>	<b>-.369</b>	-.192	.088
It would take most students a little while to work out the best way of doing this task.	-.146	-.183	-.254	.177	-.166	<b>-.316</b>	-.214	.003
I cared very much how well I did at this task.	.150	.121	.267	<b>.457</b>	<b>.355</b>	-.154	.215	-.229
I enjoyed doing this task.	.189	<b>.428</b>	.326	.126	.112	.019	.131	-.115
I tried hard while doing this task.	.008	<b>.433</b>	<b>.368</b>	.225	<b>.385</b>	.125	.085	.101
I did well at this task.	.254	-.146	.239	.034	-.215	.008	-.264	.177
Most students would be bored by this task.	<b>-.391</b>	-.102	-.254	-.259	-.219	.157	-.279	-.006
I wanted to keep doing this task.	<b>.371</b>	<b>.450</b>	.096	-.009	<b>.327</b>	.257	.160	.171
It took me a little while to work out the best way of doing this task.	-.075	<b>-.539</b>	-.203	.178	.009	-.129	-.018	-.019

*Note:* *italicized* correlation coefficients indicate  $p < .05$   
underlined correlation coefficients indicate  $p < .01$   
**bold** correlation coefficients indicate  $p < .001$

#### 9.2.3.7.6 Correlations Between Times and Task Ratings

The possibility was considered that some subjects might have responded to the manipulation by spending more time on the tasks, as predicted, while others might have regarded it as an attempt at behaviour control and thus spent less time, and that this difference might be obscured within the group means. Although examination of the histograms of times for the two groups separately did not indicate bi-modality in the scores, a further strategy for investigating the possibility that there were subgroups within the experimental groups was to correlate each time with its corresponding task ratings for

experimental and control groups separately. It was hoped that correlations which did not appear in the experimental group while occurring in the control group might disguise mean differences within the distributions of times for the experimental group. The correlations are shown in Table 9.2.70. Visual inspection of the correlation coefficients led to the conclusion that there were no obvious candidates for this analysis. However some patterns appeared to be evident in the data and these are discussed below.

#### 9.2.3.7.7 Comparison of Experimental and Control Groups: Relationships Between Time Spent and Task Ratings

There are some differences evident in Table 9.2.70 which indicate that the effect of the manipulation was more than simply to affect task ratings. Although Time 1 itself would not be affected by any treatment, the ratings of that task might be since subjects were just picking up their pens to make the ratings as the first manipulation was delivered. It is interesting to speculate about the causes for the different correlations between the two groups. For example, if subjects in the control group spent a long time on the task they said that they had tried hard and enjoyed the task. The experimental subjects, on the other hand, responded on the basis of how other students would react - they would enjoy the task, and would (not) be bored. There was not a relationship between time spent and "it took me a little while to work out the best way of doing this task" for the experimental group, whereas this was a strong relationship for the control group. Perhaps subjects in the latter group made an estimate of how long they spent and if that was a fairly long time they concluded that it had taken them a while to work it out. Experimental subjects did not need to go through this process, since they had been told why they spent the time they did - because they are persistent.

Times spent on tasks 2 and 3 were most likely to be affected by the manipulation which was delivered immediately before these tasks were undertaken. As has already been shown, although the times were not affected, some of the task ratings were. In addition there seemed to be a greater tendency in the experimental group, compared to the control group, to line its ratings up more consistently with the time spent. Looking across the row "I only felt like doing this task for a short time", for example, there was a consistently stronger relationship with time for the experimental group. On Tasks 2 and 3 the experimental group was more likely to relate spending time to enjoying the task and trying hard than was the control group (this effect is opposite to that for Task 1).

#### 9.2.3.7.8 Factor Analyses of Task Ratings

Separate factor analyses were carried out for the experimental and control groups since the different pattern of correlations between time and task ratings suggested that the pattern of interrelationships might differ between the two groups. Both factor analyses resulted in five independent factors accounting for about 77 percent of the variance, but the factor structure was actually markedly different for the two groups. Kaiser-Meyer-Olkin

measure of sampling adequacy was above .5 in both cases. Principal components factor analyses followed by oblique and varimax rotations were carried out.

#### 9.2.3.7.8.1 Factor Analysis of Task Ratings: Experimental Group

Since the factors were uncorrelated as shown in Table 9.2.71, the varimax results are reported. Tables 9.2.72 shows the eigenvalues and percent of variance accounted for by each factor, and Table 9.2.73 shows items which loaded on each factor.

**Table 9.2.71: Factor analysis of task ratings (experimental group) - factor intercorrelation matrix.**

Factor	1	2	3	4
1				
2	.164			
3	-.102	.012		
4	.273	.077	-.070	
5	-.092	-.016	-.165	.006

**Table 9.2.72: Factor analysis of task ratings (experimental group) - eigenvalues and percent of variance of each factor after a varimax rotation.**

Factor	Eigenvalue	% of var.	Cum. %
1	4.86	30.4	30.4
2	2.49	15.5	45.9
3	2.24	14.0	59.9
4	1.61	10.0	69.9
5	1.09	6.8	76.8

That factor which alone accounted for the greatest percent of the variance (30.4 %), Factor 1, can be interpreted as a mixed Involvement and Apprehension factor, while Factor 2, accounting for 15.5 percent of the variance, is a Reactions of Other Students factor. Factor 3 which accounted for 14 percent of the variance was another mixed factor, being an Enjoyment and Concern factor.

**Table 9.2.73: Factor analysis of task ratings (experimental group) - items in each factor and factor loadings.**

Item/Factor	1	2	3	4	5
This task was interesting.	.795				
I tried hard while doing this task.	.783				
I felt tense while doing this task.	.777				.383
I wanted to keep doing this task.	.767		.361		
I only felt like doing this task for a short time.	-.630		-.425		.328
Other students would enjoy doing this task.		.934			
Other students would try hard while doing this task.		.899			
Most students would be bored by this task.		-.772			
I would sometimes like to do tasks similar to this one for recreation.		.413	.735		
I enjoyed doing this task.	.413		.735		
I thought I would do well at this task.			.731		
I cared very much how well I did at this task.	.526		.568	-.355	
It was important to me that I do well at this task.	.359		.488	-.475	.392
It would take most students a little while to work out the best way of doing this task.				.934	
It took me a little while to work out the best way of doing this task.				.729	-.345
I did well at this task.					.825

#### 9.2.3.7.8.2 Factor Analysis of Task Ratings: Control Group

Tables 9.2.74 to 9.2.76 show the results of factor analyses carried out on the task ratings of the control group.

**Table 9.2.74: Factor analysis of task ratings (control group) - factor intercorrelation matrix.**

Factor	1	2	3	4
1				
2	.073			
3	.171	-.076		
4	.003	.191	-.064	
5	.029	-.053	-.049	.050

**Table 9.2.75:** Factor analysis of task ratings (control group) - eigenvalues and percent of variance of each factor after a varimax rotation.

Factor	Eigenvalue	% of var.	Cum. %
1	4.83	30.2	30.2
2	3.11	19.5	49.6
3	1.79	11.2	60.9
4	1.58	9.9	70.7
5	1.11	7.0	77.7

**Table 9.2.76:** Factor analysis of task ratings (control group) - items in each factor and factor loadings.

Item/Factor	1	2	3	4	5
I enjoyed doing this task.	.923				
This task was interesting.	.876				
I would sometimes like to do tasks similar to this one for recreation.	.835				
I wanted to keep doing this task.	.717		.343		
I only felt like doing this task for a short time.	-.675			.518	
Most students would be bored by this task.	-.652		.314		.412
I thought I would do well at this task.	.610	.321	.568		
I cared very much how well I did at this task.		.952			
It was important to me that I do well at this task.		.899			
I felt tense while doing this task.	-.517	.559		.450	
Other students would enjoy doing this task.			-.793	.336	
I did well at this task.	.310		.733		
It took me a little while to work out the best way of doing this task.		.469	-.550		.476
Other students would try hard while doing this task.				.759	
I tried hard while doing this task.				.735	
It would take most students a little while to work out the best way of doing this task.					.832

Factor 1 is interpretable as an Enjoyment (and Confidence) factor, and Factor 2 as a Concern factor. Factor 4 can be interpreted as a Trying factor, while Factor 3 is not easy to interpret, and Factor 5 loaded on only one item. Factors 1 and 2 were the only ones to



account for a substantial amount of the variance in any case, 30.2 percent and 19.5 percent respectively. Harackiewicz, Manderlink and Sansone (1984), using similar items to those used in the present study, also found Enjoyment and Concern factors, although items appearing in Factor 4 here were part of their Concern factor. Their factors were obtained from a pretest questionnaire used in a study the aim of which was to separate out three properties of performance-contingent reward - evaluation, performance feedback, and cue value. It is interesting to have found the same factors occurring in this study only for that group which did not have the treatment, a situation which is analogous to a pretest situation. As has been seen, the factor structure was not the same for subjects exposed to the treatment.

One way of understanding the difference between the factor structures of the two groups might be to consider that one effect of the manipulation was to tinge any pleasure experienced in doing the tasks with an edge of evaluation apprehension and anxiety. In terms of cognitive evaluation theory (e.g., Deci, 1975) the message received may have had both informational and controlling components, the former leading to positive feelings of competence and interest, with the latter mitigating this effect.

#### 9.2.3.7.9 Prediction of Times

Condition did not relate to time spent on the tasks, nor did Self-Construction score (with the exception of a small correlation with Time 1 over all subjects), nor indeed did Time 1, except in the case of the control group where there were significant correlations between Time 1 and Time 2 ( $r = -.364$ ,  $N = 32$ ,  $p = .02$ ), and between Time 1 and Time 3 ( $r = -.337$ ,  $N = 32$ ,  $p = .03$ ). Task ratings have been shown to relate to time spent on Tasks 1, 2 and 3. Given the different pattern of correlations between the two groups it was decided to do two sets of multiple regression analyses to determine how the predictability of time spent varied between the experimental and the control groups.

##### 9.2.3.7.9.1 Prediction of Times - Time 1 - Experimental Group

After testing pairs of variables to determine which contributed most strongly to the prediction of Time 1, all relevant variables were entered into an analysis using, initially, a stepwise procedure. Subsequently remaining variables were also forced into the equation. "Other students would be bored by this task" ( $\beta = -.378$ ) accounted for 15.29 percent of the variance ( $F = 5.42$ ,  $df = 1/30$ ,  $p = .03$ ), and the addition of "I wanted to keep doing this task" ( $\beta = .431$ ) increased this to 26.02 percent ( $F = 5.09$ ,  $df = 2/29$ ,  $p = .013$ ). Forcing all other relevant task rating variables into the equation made a non-significant difference to  $r^2$  which increased to only .272 (relevant items were "I enjoyed doing this task" ( $\beta = -.137$ ), "I would sometimes like to do tasks similar to this one for recreation" ( $\beta = .066$ ) and "I only felt like doing this task for a short time" ( $\beta = .100$ )). Betas refer to that statistic when all variables are in the equation.

#### 9.2.3.7.9.2 Time 1 - Control Group

The same procedure of testing pairs of variables and adding them in decreasing order of their relationship to the dependent measure was again adopted, as it was for all analyses reported in this section. "It took me a little while to work out the best way of doing this task" (beta=-.437) accounted for 29.14 percent of the variance ( $F=12.34$ ,  $df=1/30$ ,  $p=.0014$ ) and adding "This task was interesting" (beta=.100) increased this percentage to 42.85 percent ( $F=10.87$ ,  $df=2/29$ ,  $p=.0003$ ). The addition of the other three relevant task rating variables ("I wanted to keep doing this task" (beta=.212), "I enjoyed doing this task" (beta=.115) and "I tried hard while doing this task" (beta=.216)) only increased the variance accounted for to 51.07 percent ( $F=5.43$ ,  $df=5/26$ ,  $p=.0015$ ). Betas refer to that statistic when all variables are in the equation.

#### 9.2.3.7.9.3 Time 2 - Experimental Group

Using a stepwise procedure "It was important to me that I do well at this task" (beta=.274) accounted for 20.68 percent of the variance ( $F=7.82$ ,  $df=1/30$ ,  $p=.009$ ). This could be increased to 32.85 percent ( $F=3.30$ ,  $df=4/27$ ,  $p=.025$ ) by forcing all other correlated variables to enter ((beta=.259), "I enjoyed doing this task" (beta=.048) and "I only felt like doing this task for a short time" (beta=-.213)).

#### 9.2.3.7.9.4 Time 2 - Control Group

20.84 percent of the variance was accounted for by "I cared very much how well I did at this task" ( $F=7.89$ ,  $df=1/30$ ,  $p=.009$ ) and this only increased to 28.99 percent with the addition of "It would take most students a little while to work out the best way of doing this task" and "I cared very much how well I did at this task" ( $F=3.81$ ,  $df=3/28$ ,  $p=.021$ ). When all variables were in the equation the beta weights for the three variables were .585, -.273 and -.341 in order of mention.

#### 9.2.3.7.9.5 Time 3 - Experimental Group

"I only felt like doing this task for a short time" (beta=-.512) accounted for 32.49 percent of the variance ( $F=14.44$ ,  $df=1/30$ ,  $p=.0007$ ) and this only increased to 39.21 percent with the addition of "I cared very much how well I did at this task" (beta=-.512), "I would sometimes like to do tasks similar to this one for recreation" (beta=.165), "I tried hard while doing this task" (beta=.131) and "I wanted to keep doing this task" (beta=-.184) ( $F=3.35$ ,  $df=5/26$ ,  $p=.018$ ).

#### 9.2.3.7.9.6 Time 3 - Control Group

Three variables accounted for 42.67 percent of the variance in predicting Time 3 for the control group. "I only felt like doing this task for a short time" resulted in an  $r^2$  of .136 ( $F=4.74$ ,  $df=1/30$ ,  $p=.037$ ), Time 1 increased this to .295 ( $F=6.08$ ,  $df=2/29$ ,  $p=.006$ ) and "It would take most students a little while to work out the best way of doing this task"

increased this to .427 ( $F=6.95$ ,  $df=3/28$ ,  $p=.0012$ ). Beta weights were -.437, -.412 and -.364 for those three variables respectively when all were in the equation.

#### 9.2.3.7.9.7 Time 4 - Experimental Group

No significant equation could be found.

#### 9.2.3.7.9.8 Time 4 - Control Group

"It was important to me that I do well at this task" accounted for 18.23 percent of the variance ( $F=6.72$ ,  $df=1/30$ ,  $p=.015$ ) and this could be increased to 30.02 percent with the addition of Time 1 ( $F=6.22$ ,  $df=2/29$ ,  $p=.006$ ). Beta weights were -.432 and -.342 respectively.

In conclusion, all times, except Time 4, were generally as able to be predicted from other available variables for the experimental group as for the control group. However, as would be expected from the foregoing results, different task-rating variables had varying predictive weight within the two groups.

#### 9.2.3.7.10 Assessment of Tasks

Finally, in view of the lack of significant differences across groups in time spent on the tasks, the four tasks were considered in relation to the question of whether they had actually been adequate measures of persistence in the sense intended ("I tend to persist at tricky problems even when I am frustrated by them"). The experimenter made a very definite subjective judgment while running the experiment that the "Word Matching Task" and the "Translation Task", both of which set the scene for the delivery of the manipulation, were excellent as measures of persistence in the face of frustration. Many subjects begged the experimenter to tell them the answers to individual problems, and expressed frustration both verbally and non-verbally (sighing, shuffling in the chair, tapping with the pen, and so on). Despite this, the tasks were in fact regarded as relatively more interesting than the games used in Experiment 3 had been.

Average ratings for the item "This task was interesting" were calculated across all subjects for each task (of course the task rating might have been affected by the condition so that these means are only a rough guide). The means were as follows - Word Matching mean=4.94, s.d.=1.41; Translation Task mean=5.70, s.d.=1.39; Word Search mean=5.44, s.d.=1.27; Magic Square mean=4.94, s.d.=1.59; Overall mean=21.02, s.d.=3.54. It will be recalled that the overall mean for the games was 18.80 (s.d.=3.07). For comparison the means for each game are presented here - Alien Blaster mean=4.12, s.d.=1.58; Maze mean=5.07, s.d.=1.62; Word Search mean=5.07, s.d.=1.55; Zombies mean=4.61, s.d.=1.56.

#### 9.2.4 Discussion

In general outline the results of this study were similar to the results of Experiments 2 and 3 (and 6), but there were some differences in detail. All experiments are comparable in not showing an effect of the manipulation on the main dependent measure, time spent (or number of items produced), and in showing an effect of an attributional praise manipulation on task ratings. In the present study, as in Experiment 3, the combined group means were tantalizingly in the predicted direction, but always small. It must be concluded that such a manipulation does not affect time spent on tasks which were designed not to be too interesting, but to be somewhat frustrating and to test persistence. As has already been shown, the task ratings suggest that the tasks were more interesting than it was hoped they would be.

A major difference between the results of this experiment and those of Experiment 3 was in the apparent immediate effect of the manipulation on the ratings of more of the variables of Task 1. Effects of the manipulation on games' ratings in the earlier experiment did not really become apparent until after the second game was played. Perhaps this is due to a difference in cognitive set in the two situations - in the present situation "tasks" were being done, while in the earlier experiment "games" were being played. Whatever the explanation, there were a number of items on which subjects in the two groups differed in their evaluation of Task 1. Considering Condition main effects only, subjects in the experimental group felt more strongly that they would do well, that they did do well, and that they enjoyed the task, and less strongly that they only felt like doing the task for a short time. They agreed to a lesser extent that it took a little while to work out the best way of doing the task. Experimental subjects subsequently agreed to a greater extent than did controls that they tried hard at the second task, and to a lesser extent that it took a little while to work out the best way of doing that task. Once they came to rate the third task, they were showing signs of some negative reactions, in that they agreed less than control subjects that other students would enjoy the task, or that they would like to do similar tasks for recreation. There were no main effects for the ratings of the final task.

It is difficult to determine whether the interesting nature of the tasks was again confounded with time spent on them, since the tasks did appear to be satisfactory measures of persistence. Analyses done holding "interest" constant did not substantially alter the results and this implies that the nature of the tasks was not a great problem. But perhaps it is necessary to use very tedious tasks and risk subjects not being engaged in them at all to be certain that "persistence" rather than intellectual challenge or interest is being measured.

In terms of the further purpose of the experiment, to determine whether there is any interaction between specific self-concept variables and response to the attribution of that characteristic, it can be said that interactions do occur, but that they are not of a clearly

interpretable kind. Thus, while there was no interaction with times spent (or indeed any main effect showing a relationship between self-concept and behaviour), there were a number of interactions between Condition and Characteristic, and Condition and Construct, on the task ratings. Tasks 2 and 3 were notable in engendering several Construct/Condition interactions. Experimental subjects with a construct (either of being persistent, or of not being) and control subjects without a construct agreed to a lesser extent that they did well at the second task or that they would like to do tasks similar to the third one for recreation. Some of the interactions were not crossed, but were of the form that an effect occurred only amongst those without a construct. For example, experimental subjects without a construct agreed less that it took a little while to work out the best way of doing Task 2, that they found it interesting, or would like to do tasks similar to Task 3 for recreation, and that other students would enjoy or try hard at Task 3.

Various models have been advanced as being relevant to the interpretation of results emerging from Experiments 3 and 7. The major ones relate to the self-concept and its structure and mode of operation, but another important one is cognitive evaluation theory (e.g., Deci, 1975) in which aspects of the reward itself are primary. In terms of Markus' (e.g., 1977) work, it could be argued broadly that information in the form of personal feedback is processed differently and does affect behaviour differently depending upon one's constructual (schematic) status in the given domain. Fazio's (1986) model is an outline of the process by which attitudes (or constructs/schemas) are converted to behaviour. One aspect of the results of this study supports the model, in that there is clearly no effect of an attitude/construct on behaviour without "activation" of that attitude/construct. However, activation of that previously stated attitude/construct in the form of attributional praise does not lead to a consistency between it and behaviour either.

Except for a small reaction time study described in Chapter 10 Part 2, this was the final chapter to cover experimental work. The following two chapters contain descriptions of the development of questionnaires used for different purposes in the research. Thus, while Chapters 5 to 9 have formed a sequence, Chapters 10 and 11 could each be regarded as separate units within the thesis as a whole. Then in Chapter 12 the final summary and discussion is presented.

## CHAPTER 10

All the work on a self-concept questionnaire which was developed over the course of the research is presented in this chapter. Although the validation process was carried out over the entire period of the research, since this work requires separate conceptual treatment, its explication has been reserved for this single chapter.

### PART 1

#### DEVELOPMENT OF THE SELF-CONSTRUCTION QUESTIONNAIRE

There were basically three phases in the development of a self-concept questionnaire, the final version of which was termed the Self-Construction Questionnaire. The questionnaires resulting at the different stages appear in Appendices 6.1 to 6.3. The idea for this questionnaire developed over the course of the research project, and earlier versions of it were used at each stage of the experimentation. The theoretical rationale for anticipating an interaction between subjects' prior self-concepts in a given domain and their response to praise in that domain was discussed in Chapter 3, and the experimentation resulting from that theory was described in Chapter 9. Further theoretical issues relating to Markus' work are discussed below, as are the strategies used to validate a scale which developed in a somewhat ad hoc fashion.

Various approaches were taken in establishing that the questionnaire was valid as a measure of the extent to which individuals think about, and know, their own characteristics. Each version of the questionnaire appeared to have good face validity, especially given that response set was excluded as an explanation for high scores (see Section 10.1.5). However, where possible, attempts were made to relate scoring on the questionnaire to other self-report measures. In addition, a study was undertaken which can be seen as a partial behavioural validation of the construct the scale was seen to be measuring. This study is described in Part 2 of this chapter. Each version of the scale was factor analyzed, but this form of analysis was used in a somewhat non-standard fashion in that the aim was to establish that a large number of factors were represented (cf. Briggs and Cheek, 1986), reflecting a range of domains of the self. Thus, what is described below are the strategies for refining the questionnaire at each stage, and the approaches taken to validating it. These included frequency counts of responses to individual items, and factor analyses, as well as the attempts at convergent validation by correlation with other measures. Theoretical implications for Markus' theory of the existence of such a construct, even if the Self-Construction Questionnaire is not the ideal instrument to measure it, are also considered.

#### 10.1.1 General Introduction

Markus has been a major spokesperson for the self-schema model of self-environment interactions. However, particularly in regard to methodological issues, her work has not been totally free of criticism (e.g., Burke, Kraut and Dworkin, 1984). As has been stated, to measure being self-schematic on a given characteristic she favours the strategy of having subjects provide self-ratings as well as personal importance ratings on

that characteristic. Only when an extreme rating in conjunction with a high importance rating emerges will she consider that individual to be schematic on the given characteristic or in the given domain. In contrast, so-called "aschematics" would rate themselves in the moderate range, noting that the given trait was not important to them.

Markus can, however, be criticized for using this measurement technique. One difficulty with it is that some individuals can be in a third "unclassifiable" category; how these individuals differ from those who simply do not have a schema is unclear. Further, the combination of a middle-of-the-range rating on a characteristic with a low importance rating is not an identical conception to never having made a self-judgment in a given area, and therefore genuinely being unlikely to have any relevant cognitive structure or schema. An individual might conceivably have considered a characteristic or attribute and have a fully working schema with respect to it, while regarding it as personally unimportant.

For example, a respondent might have a well-elaborated and frequently-activated schema about "myself in relation to mechanical devices", yet have no investment at all in this schema as a part of her/his self-concept. It might be entirely unimportant to her/him whether s/he relates well or badly to such devices, except insofar as desired outcomes might not be achieved when an attempt is made to do so. That is, the schema could have practical importance without any implication of personal importance. Thus the respondent might agree that a specific statement about the relationship between "myself and mechanical devices" would have formed a part of her/his self-description were s/he to consider that question. On such a criterion the respondent could be regarded as having a schema, while not necessarily fitting Markus' operational definition of the concept. Or, a respondent might have no schema at all in another domain, the domain of "physical prowess" for example, but find that the demand characteristics of the scale-rating situation result in an anomalous response.

It was largely because of considerations like these that a "self-description" criterion was adopted in the present study. The criterion for an individual being regarded as schematic (or constructual) on a given variable was agreement with the proposition that s/he had thought about her/himself in this way before to the extent that s/he would probably have included the statement, or a similar one, in a self-description. It was considered that, at the very least, this strategy would not result in any individuals being "unclassified", that is, everyone was either "constructual/schematic" or "aconstructual/aschematic" on every statement. Moreover, the criterion of inclusion in one's prior self-description was seen as one that was likely to identify individuals who recognized a construct as self-descriptive without necessarily confounding such a recognition with the importance of the construct to the self-concept.

## 10.1.2 Development of Questionnaire: Stage 1

### 10.1.2.1 Introductory Remarks

In 1985 a "Self-Concept Questionnaire" containing a number of statements which might/might not be personally applicable was devised for subject selection for Experiment 3. This experiment and the selection of items for the questionnaire were described in Chapter 9.

Respondents were required to circle "yes", "no", or "uncertain" for each of 50 items. In addition, they were asked, for each item, to circle "yes", "no" or "uncertain" to the statement "I have thought this about myself before now, distinctly enough that I might well have included a similar statement in a description of myself". The questionnaire is shown in Appendix 6.1.

Questionnaires were administered during testing sessions of Psychology I undergraduates at the beginning of the 1985 academic year. Since there were insufficient returns, a colleague of the researcher subsequently distributed more copies to be returned to an anonymous box ("Self-Concept Questionnaires") at the departmental office. Of the 124 which were returned 28 did not include adequate identifying information. Thus, there were 67 female respondents and 29 males, with 28 missing values. The average age of these 96 respondents was 20.83 years (s.d.=6.30).

### 10.1.2.2 Analysis of the Self-Concept Questionnaire

The finding of differences between individuals who were schematic or aschematic on certain variables in the ratings of the games in Experiment 3 led to the idea that there might be something different in the general approach to the experimental situation of schematics and aschematics. For this reason it was decided to look at "Self-Construction", or "Schematism" as it was termed originally, in the sense, not of individual dimensions, but of a score out of 50 variables completed on the Self-Concept Questionnaire.

Before such a score could be regarded as meaningful, further analysis of the questionnaire was necessary. An oblique rotation following a principal components factor analysis showed that there were nineteen independent factors, most correlations between factors being negligible, with the highest being 0.16. This was taken as indicating that rather than being without a factor structure, the questionnaire items represented a number of orthogonal factors. Final statistics for the factor analysis following a varimax rotation are shown in Table 10.1.1. The 19 factors together accounted for 69.4 percent of the variance, with each factor contributing 3.65 percent, on the average. The loadings of individual items on factors were studied, and it was found that every item loaded in the range 0.65-0.84 on at least one factor. Slightly less than half the items loaded significantly (critical  $r=.23$ ,  $N=124$ ,  $p<.01$ ) on more than one factor.



**Table 10.1.1:** Final statistics for factor analysis of 50-item Self-Concept Questionnaire after varimax rotation.

Factor	Eigenvalue	% of var.	Cum. %
1	4.15	8.3	8.3
2	2.89	5.8	14.1
3	2.73	5.5	19.6
4	2.29	4.6	24.1
5	2.13	4.3	28.4
6	2.08	4.2	32.6
7	2.00	4.0	36.6
8	1.76	3.5	40.1
9	1.72	3.4	43.5
10	1.64	3.3	46.8
11	1.48	3.0	49.8
12	1.43	2.9	52.6
13	1.38	2.8	55.4
14	1.34	2.7	58.1
15	1.27	2.5	60.6
16	1.21	2.4	63.1
17	1.10	2.2	65.3
18	1.06	2.1	67.4
19	1.01	2.0	69.4

To further investigate the characteristics of items in the questionnaire, and to determine whether the number of items could be decreased for a subsequent version, simple frequencies were also calculated for each item. In a number of cases it was found that the distributions were noticeably skewed for individual items. The loadings of items on the nineteen factors which had been extracted were then examined in conjunction with these frequency distributions of individual items. There were only 13 items on which the distributions were extremely skewed. This was defined as a 24/100 yes/no or no/yes split since there was a natural break in the distribution at this point (it should be noted that respondents also had the opportunity to circle "uncertain"; in this case the response was considered to be "no"). Further examination of the frequency distributions showed that there were 21 items on which there was an approximately one-third/two-thirds yes/no or no/yes split or better (in practice, a convenient cut-off point proved to be a 44/80 split). Two further items were slightly outside this criterion, and were included in a preliminary analysis to determine whether the questionnaire could be abbreviated in terms of number of items without loss of breadth of domains sampled. Each of the 23 items loaded 0.38 or higher on one of the original factors. This subset of items represented 14 of the 19 factors. Those items on which there was at least a 44/80 split are shown in Table 10.1.2.

**Table 10.1.2:** Items in the original Self-Concept Questionnaire on which there was at least a 44/80 yes/no or no/yes split.

Item no.	Item
7	I am shy in large social groups.
8	I usually leave assignments until the last minute.
9	I tend to persist at tricky problems even when I am frustrated by them.
1 2	Imaginativeness is not one of my most obvious abilities.
1 3	I am generous with money.
1 6	If someone criticizes me I get upset.
1 7	My desk or work-area at home is usually very untidy.
1 8	I find most word games fascinating.
2 0	I daydream a lot.
2 3	If I have to do a boring and repetitive task I get very impatient.
2 5	I don't think I would win a prize for creativity or originality.
2 7	I have a very logical mind.
2 9	I play a lot of sport.
3 0	I am quite greedy about my favourite foods.
3 1	I'm bad at mechanical tasks.
3 3	Computers are a mystery to me.
3 9	I find computer games quite addictive.
4 5	I am not at all competent when it comes to mechanical devices.
4 6	I approach all new tasks in a very methodical manner.
4 8	I am a fairly sophisticated person.
4 9	I usually remain patient even when I make mistakes at a task.

Frequencies were also calculated for the responses to the "self-description" part of the question. For the schematic/constructual frequencies, items 9, 12, 13, 15, 16, 18, 20, 23, 27, 30, 31, 39, 45, 46 and 48 above produced a 44/80 or better split, as did the items shown in Table 10.1.3.

**Table 10.1.3:** Schematic/constructual frequencies - items not represented in Table 10.1.2 which produced at least a 44/80 yes/no or no/yes split.

Item no.	Item
2	When it comes to maths, I am really smart.
3	I am only friendly towards others when I'm in a good mood.
5	I am boastful about my abilities.
2 1	I have never liked my looks.
3 2	I feel pleased when friends remember my birthday.
3 3	Computers are a mystery to me.
3 5	I go to pieces in exams.
4 0	I don't at all mind doing a boring and repetitive task.
4 2	If I get involved in a task I like to stick at it until it's finished.
4 4	I have very strong opinions about most things.

When a further factor analysis, using the same procedure as previously, was carried out on this subset of items, nine factors were extracted after a varimax rotation. The highest

correlation between factors following oblique rotation had proven to be 0.14, with most being negligible. Again it seemed that a large number of independent factors were represented. The nine factors accounted for 62.3 percent of the variance, with the first two factors accounting for slightly over 20 percent. Final statistics after varimax rotation are shown in Table 10.1.4. An average of 4.89 items loaded significantly on each factor (range 2-7 items), but no more than three items loaded more than 0.5 on any one factor.

**Table 10.1.4:** Final statistics for factor analysis of a subset of items from the Self-Concept Questionnaire after varimax rotation.

Factor	Eigenvalue	% of var.	Cum. %
1	2.71	11.8	11.8
2	2.19	9.6	21.3
3	1.76	7.7	29.0
4	1.59	7.0	35.9
5	1.43	6.2	42.9
6	1.34	5.8	48.0
7	1.21	5.2	53.3
8	1.05	4.6	57.8
9	1.02	4.5	62.3

It was concluded from this analysis that the questionnaire could be cut down for use in a subsequent study. However, for the purpose of analyses in relation to Experiment 3, Self-Construction scores were calculated for each original respondent on the basis of the original 50 items. Analyses were then carried out to determine whether there were any relationships between this score and the experimental variables.

Although the scale was originally intended to comprise primarily "filler" items, the analyses that were undertaken as a result of the unexpected findings in the experiment showed that it was a reasonably suitable scale for the purpose of measuring "Schematism" or "Self-Construction". (Following further consideration of some of the theoretical issues, and after the devising of the Self-Concept Questionnaire (Version 2), the term "Schematism" was reserved for the score derived using Markus' criteria, and the term "Self-Construction" was adopted in relation to the present researcher's criterion. It should be noted that Jones (1964, p. 3) uses the term "self-construction" to refer to "the attempt to make one's public self congruent with one's ideal self": the present usage is quite distinct from this earlier usage.)

Given the results in Experiment 3, it seemed possible that Self-Construction might relate to other variables, for example the Private Self-Consciousness subscale of Fenigstein, Scheier and Buss (1975). This subscale purports to measure the extent to which individuals are introspective about their thoughts and emotions. As subsequent analysis revealed, the correlation between this subscale of the Self-Consciousness scale, and Self-Construction, was of a reasonable order ( $r=.304$ ,  $N=51$ ,  $p=.015$ ). That Self-Construction was shown to relate to other variables, including the rating variables in Experiment 3, was taken to indicate

that the Self-Concept Questionnaire was measuring something meaningful. Since these relationships would not have been predicted on the basis of Markus' (1977, 1980) cognitive model, it was decided to ascertain whether it was the "self-description" instructions which contributed to the meaningfulness of the scale, or whether the same results could be achieved using Markus' criteria.

### **10.1.3 Development of Questionnaire: Stage 2**

#### **10.1.3.1 Introductory Remarks**

To elaborate on the points made in Section 10.1.1 above, according to Markus (1977), individuals who rate themselves extremely (1-4 or 8-11 on an 11-point scale) on a characteristic and who also indicate that it is important to them (rating 8-11 on an 11-point importance scale) are schematic on the variable in question (generally she uses these criteria in combination on two or three trait-type variables). Those who rate themselves in the middle of the range (points 5-7), and for whom the variable is not important, are aschematic (in the present study points 1-4 on the importance scale were used, but Markus changes her criterion e.g., in 1977 she says "fell in the lower portion of the distribution on the importance scale" (p.66), in 1982 "low on importance....(1-6 on the 11-point scale)" (Fong and Markus, p. 195), and in 1985 Markus, Smith and Moreland use "points 8-11" on the importance scale, now reversed, to indicate "very unimportant to their self-evaluation" (p. 1497)). As has been suggested, if this set of criteria is used the implication is that certain individuals are unclassifiable. Markus does not discuss this point at any length, but writes in her 1977 paper:

"The term aschematic is used to mean without schema on this particular dimension.

Invoking the importance criterion conjointly with the extremity criterion made it possible to avoid confusing Aschematics with persons who act (and think of themselves) as independent in some classes of situations and as dependent in other classes of situations, and do so consistently. Making such fine discriminations would lead these individuals to develop a fairly well-articulated conception of the independence domain of social behavior, and thus it would be incorrect to classify them as Aschematics. However, if these people had a well-articulated conception of themselves as both dependent and independent, they would no doubt be quite sensitive to social behavior in the domain of independence and would consider it to be a significant and important area. Hence, they would not be classified as Aschematics according to our criteria" (p.67).

To reiterate, the criterion for being schematic/constructual used by the present researcher is a "self-description" one. Thus respondents simply circle "yes" to show that they have thought about themselves this way before, or "no" to show that they haven't. An "uncertain" category is also available, but "no" and "uncertain" are both regarded as "aschematic/aconstructual" responses.

Because of the confusion arising out of Markus' (1977) remarks, and because, logically, if a schema is to be regarded as a cognitive structure, it does not quite make sense to have it to a certain degree, a further definition was used in the present analyses. Theoretically it could be argued that an individual either has or does not have a schema whether it be well-developed or in a rudimentary form, and without there being any implication regarding how active or personally meaningful that schema might be. Thus, within Markus' criteria, all those who are not schematic could be classed as aschematic.

In the present study, then, two different definitions of being schematic and three different definitions of being aschematic were compared for each variable. The former were, in summary, this researcher's "self-definitional" criterion and Markus' criterion of extremeness of self-rating combined with importance in the individual's self-conception. The latter included the criterion of not having had the item in one's self-description, rating the item as neither extreme nor important and this researcher's adaptation of Markus' definition, the labelling of all those who are not schematic as aschematic (Markus' criteria result in some respondents being "unclassifiable").

#### 10.1.3.2 The Questionnaire

Since, in order to compare the two different selection criteria for being schematic/constructual, respondents were to be asked to judge of each item not only whether it would previously have been part of their self-description, but also their level on it, and its importance to their self-conception, it was necessary to halve the number of items in the 50-item questionnaire. The analyses which determined the selection of items have already been described. The 21 items which were split at least one-thirds/two-thirds yes/no or no/yes were included, as were four items relating to the main aim of Experiment 3 (the two borderline items of the subset of 23 referred to previously were excluded at this stage). The questionnaire appears in Appendix 6.2, and the items are also displayed in Tables 10.5.1 to 10.5.4, and Table 10.7. It should be noted that items 19 and 24, which are highly correlated, were both included as a simple check that respondents were taking the task seriously. Had they not retained their correlation, individual forms could have been more closely examined.

The main aim of the study for which the Self-Concept Questionnaire (Version 2) was used to select subjects was to investigate the effects of praise on performance on some person perception tasks. The study that was undertaken, Experiment 4, was discussed in Chapter 7. Specifically the aim was to investigate the interaction between praise for behaviour within a given domain ("perceptivity") and the subject's prior self-concept in that domain.

The Self-Concept Questionnaire (Version 2) was administered to Psychology I undergraduates at Adelaide University in the testing sessions of 1986. To increase the number of returns, further questionnaires were subsequently distributed in an informal manner, to be returned to the departmental office. 185 were received by the due date and

these were analyzed ( a further six received late did not enter into the analyses to be discussed here, but were kept in reserve for subject selection for Experiment 4). The Self-Monitoring Scale (Snyder, 1974) was administered at the same time. Of the 185 respondents, 135 were female and 47 were male. Their average age was 20.29 years (s.d.=5.23 years).

Although the Self-Concept Questionnaire (Version 2) was administered primarily with a view to relating responding on it to performance in the proposed experiment, a variety of analyses comparing the operationalization of the constructs of Markus (1977) and Markus et al (1982, 1985) with that of the present researcher were also carried out on the questionnaire data; these analyses have theoretical significance.

As has been discussed previously it was in fact discovered that an insufficient number of respondents were schematic on the variable relevant to the experiment and it became necessary to devise a different experiment taking advantage of any variable on which suitable proportions of schematic and aschematic subjects could be achieved.

### 10.1.3.3 Analyses of Self-Concept Questionnaire (Version 2)

#### 10.1.3.3.1 Comparison of Numbers who are Schematic/Constructual and Aschematic/Aconstructual by Variable

For each of the 25 variables the numbers who were schematic according to the two different criteria and aschematic according to the three different criteria were calculated. Each item was crosstabulated and statistics of association,  $r$ ,  $\phi$  and chi-squared, were calculated between the cases selected by Markus' criteria and those selected by the criterion of the present researcher. The results are shown in Tables 10.1.5.1 to 10.1.5.4. Since  $r$  and  $\phi$  values were very similar, often identical, and in view of limitations of space within the tables,  $r$  and chi-squared only are reported. In every case, except that identified with asterisks, the associated probability is .0001 or less. \*\* indicates  $p < .01$ .

It can be seen that using Markus' criteria for being "schematic" ("constructual") on given items is a more stringent procedure. For 24/25 items fewer respondents were schematic/constructual by this procedure than by the other (Sign Test,  $x=1$ ,  $N=25$ ,  $p < .001$ ). Interestingly, using Markus' conjunction of extremeness and importance resulted in very few individuals being classified as aschematic on given items. For 20/25 items, however, more than 50 percent of respondents were unclassifiable.

The measures of association show that the two techniques tended to select the same individuals. All of the 25 items showed significant association, generally with a  $p < .00001$  (in only one case, "I am shy in large social groups", was  $p > .0001$ ). Pearson  $r$  ranged between .266 and .639, and  $\phi$  between .259 and .657.

### 10.1.3.3.2 Comparison of Schematism Scores and Self-Construction Scores

Two "schematism" scores were calculated for each subject. As has been stated, the score resulting from this researcher's technique was termed "Self-Construction" while "Schematism" was reserved for that resulting from Markus' (1977) technique (allowing some respondents to remain unclassified where necessary). Descriptive statistics for these variables are shown in Table 10.1.6. N was 185 in each case, since every respondent received a score weighted for any missing values (this was done by dividing the score by the actual number completed, and multiplying by 25). The technique favoured by the present researcher resulted in a higher mean, and a slightly greater range.

**Table 10.1.5.1:** Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 1 to 6. **Key:** c/s=constructual/schematic, a-c/a-s=aconstructual/aschematic, unc=unclassified, Chi=chi-squared.

Item	Classification	Markus' Criteria		Present Criterion		Measures of Association		
		N	%	N	%	Chi	df	r
1. I am shy in large social groups	c/s	97	52.4	154	83.2	13.04**	2	.270
	a-c/a-s	11	5.9	31	16.8			
	unc	77	41.6					
	a-c/a-s+unc	88	47.5					
2. I usually leave assignments until the last minute	c/s	85	45.9	122	65.9	19.86	2	.320
	a-c/a-s	11	5.9	63	34.1			
	unc	89	48.1					
	a-c/a-s+unc	100	54.1					
3. I tend to persist at tricky problems even when I am frustrated by them	c/s	76	41.1	104	56.2	49.07	2	.516
	a-c/a-s	11	5.9	81	43.8			
	unc	98	52.9					
	a-c/a-s+unc	109	58.9					
4. I am a good judge of people	c/s	85	45.9	105	56.8	55.71	2	.491
	a-c/a-s	14	7.6	80	43.2			
	unc	86	46.4					
	a-c/a-s+unc	100	54.1					
5. Imaginativeness is not one of my most obvious abilities	c/s	100	54.1	115	62.2	49.51	2	.508
	a-c/a-s	4	2.2	70	37.8			
	unc	81	43.7					
	a-c/a-s+unc	85	45.9					
6. I am generous with money	c/s	55	29.7	75	40.5	49.65	2	.448
	a-c/a-s	19	10.3	109	58.9			
	unc	111	60.0	1	.5			
	a-c/a-s+unc	130	70.3					

**Table 10.1.5.2:** Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 7 to 12. **Key:** c/s=constructual/schematic, a-c/a-s=aconstructual/aschematic, unc=unclassified, Chi=chi-squared.

Item	Classification	Markus' Criteria		Present Criterion		Measures of Association		
		N	%	N	%	Chi	df	r
7. I've never felt confident that I could judge a person's intelligence	c / s	40	21.6	46	24.9	62.15	2	.513
	a - c / a - s	21	11.4	139	75.1			
	unc	124	67.0					
	a - c / a - s + unc	145	78.4					
8. If someone criticizes me, I get upset	c / s	107	57.8	130	70.3	48.13	2	.430
	a - c / a - s	9	4.9	55	29.7			
	unc	69	37.3					
	a - c / a - s + unc	78	42.1					
9. My desk or work area at home is usually very untidy	c / s	82	44.3	124	67.0	54.79	2	.509
	a - c / a - s	8	4.3	61	33.0			
	unc	95	51.4					
	a - c / a - s + unc	103	55.7					
10. I find most word games fascinating	c / s	30	16.2	29	15.7	79.51	2	.569
	a - c / a - s	29	15.7	156	84.3			
	unc	126	68.1					
	a - c / a - s + unc	155	83.8					
11. I daydream a lot	c / s	82	44.3	103	55.7	78.72	2	.580
	a - c / a - s	18	9.7	82	44.3			
	unc	85	45.9					
	a - c / a - s + unc	103	55.7					
12. I am a perceptive person	c / s	120	64.9	127	68.6	69.18	2	.557
	a - c / a - s	10	5.4	58	31.4			
	unc	55	29.7					
	a - c / a - s + unc	65	35.1					



**Table 10.1.5.3:** Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 13 to 18. **Key:** c/s=constructual/schematic, a-c/a-s=aconstructual/aschematic, unc=unclassified, Chi=chi-squared.

Item	Classification	Markus' Criteria		Present Criterion		Measures of Association		
		N	%	N	%	Chi	df	r
13. If I have to do	c / s	72	38.9	91	49.2	49.59	2	.430
a boring and	a-c/a-s	19	10.3	94	50.8			
repetitive task	unc	94	50.8					
I get very impatient	a-c/a-s+unc	113	61.1					
14. I don't think	c / s	84	45.4	94	50.8	42.77	2	.475
I would win a	a-c/a-s	9	4.9	91	49.2			
prize for creativity	unc	92	49.7					
or originality	a-c/a-s+unc	101	54.6					
15. I have a very	c / s	112	60.5	116	62.7	54.90	2	.502
logical mind	a-c/a-s	15	8.1	69	37.3			
	unc	58	31.4					
	a-c/a-s+unc	73	39.5					
16. I play a lot	c / s	92	49.7	137	74.1	40.12	2	.459
of sport	a-c/a-s	7	3.8	48	25.9			
	unc	86	46.5					
	a-c/a-s+unc	93	50.3					
17. I can judge pretty	c / s	22	11.9	26	14.1	61.17	2	.442
well straight away	a-c/a-s	36	19.5	159	85.9			
if a person is	unc	127	68.6					
artistically talented	a-c/a-s+unc	163	88.1					
18. I am quite	c / s	36	19.5	58	31.4	56.40	2	.522
greedy about my	a-c/a-s	21	11.4	127	68.6			
favourite foods	unc	128	69.2					
	a-c/a-s+unc	149	80.5					

**Table 10.1.5.4:** Crosstabulation of the 25 items of the Self-Concept Questionnaire (Version 2) comparing selection of schematic/constructual individuals according to Markus' (1977) criteria and that used in the present research - items 19 to 25. **Key:** c/s=constructual/schematic, a-c/a-s=aconstructual/aschematic, unc=unclassified, Chi=chi-squared.

Item	Classification	Markus' Criteria		Present Criterion		Measures of Association		
		N	%	N	%	Chi	df	r
19. I'm bad at mechanical tasks	c / s	49	26.5	64	34.6	43.97	2	.434
	a - c / a - s	18	9.7	121	65.4			
	unc	118	63.8					
	a - c / a - s + unc	136	73.5					
20. Computers are a mystery to me	c / s	28	15.1	69	37.3	20.91	2	.274
	a - c / a - s	16	8.6	116	62.7			
	unc	141	76.2					
	a - c / a - s + unc	157	84.8					
21. I approach all new tasks in a very methodical manner	c / s	82	44.3	90	48.6	92.71	2	.639
	a - c / a - s	16	8.6	95	51.4			
	unc	87	47.0					
	a - c / a - s + unc	103	55.7					
22. I am a fairly sophisticated person	c / s	69	37.3	98	53.0	49.24	2	.429
	a - c / a - s	14	7.6	87	47.0			
	unc	102	55.1					
	a - c / a - s + unc	116	62.7					
23. I usually remain patient even when I make mistakes at a task	c / s	83	44.9	128	69.2	29.08	2	.370
	a - c / a - s	6	3.2	57	30.8			
	unc	96	51.9					
	a - c / a - s + unc	102	55.1					
24. I am not at all competent when it comes to mechanical devices	c / s	49	26.5	69	37.3	48.54	2	.420
	a - c / a - s	23	12.4	116	62.7			
	unc	113	61.1					
	a - c / a - s + unc	136	73.5					
25. I find computer games quite addictive	c / s	29	15.7	36	19.5	46.55	2	.442
	a - c / a - s	28	15.1	149	80.5			
	unc	128	69.2					
	a - c / a - s + unc	156	84.3					

**Table 10.1.6:** Self-Concept Questionnaire (Version 2) - Means, standard deviations, maxima and minima of Self-Construction and Schematism scores.

Score	Mean	s.d.	Minimum	Maximum
Self-Construction	12.48	4.89	0	25
Schematism	9.65	4.72	0	22

### 10.1.3.3.3 Correlations of Self-Ratings with Importance, by Variable

Markus, Smith and Moreland (1985), in referring to Markus' previously published studies (e.g., Markus et al, 1982), note that "there has been a strong positive correlation (ranging from .78 to .89) between extremity and importance in self-definition" (p. 1497, note 1). To determine whether these results could be replicated in relation to the present variables, correlations were calculated between the extremeness and the importance ratings for each variable. These results are set out in Table 10.1.7.

**Table 10.1.7: Self-Concept Questionnaire (Version 2) - Item-by-item correlations between self-rating and importance rating.**

Item	r	p
1. I am shy in large social groups	-.118	.055
2. I usually leave assignments until the last minute	-.077	.151
3. I tend to persist at tricky problems even when I am frustrated by them	.388	.0001
4. I am a good judge of people	.415	.0001
5.*Imaginativeness is not one of my most obvious abilities	-.359	.0001
6. I am generous with money	.237	.001
7.*I've never felt confident that I could judge a person's intelligence	-.373	.0001
8. If someone criticizes me, I get upset	.203	.003
9. My desk or work area at home is usually very untidy	-.058	.216
10. I find most word games fascinating	.565	.0001
11. I daydream a lot	.731	.0001
12. I am a perceptive person	.645	.0001
13. If I have to do a boring and repetitive task I get very impatient	.195	.004
14.*I don't think I would win a prize for creativity or originality	-.166	.012
15. I have a very logical mind	.378	.0001
16. I play a lot of sport	.593	.0001
17. I can judge pretty well straight away if a person is artistically talented	.591	.0001
18. I am quite greedy about my favourite foods	.306	.0001
19. I'm bad at mechanical tasks	-.141	.028
20. Computers are a mystery to me	-.179	.008
21. I approach all new tasks in a very methodical manner	.509	.0001
22. I am a fairly sophisticated person	.514	.0001
23. I usually remain patient even when I make mistakes at a task	.270	.0001
24.*I am not at all competent when it comes to mechanical devices	-.187	.005
25. I find computer games quite addictive	.279	.0001

A mean and a standard deviation of these Pearson r values were calculated, changing the sign of those items which were negatively worded (marked with an asterisk). The

resulting mean was .293, with a standard deviation of .252, well below Markus' (Markus, Smith and Moreland, 1985) reported correlations. The highest individual correlation between extremeness and importance was .731 and five of the correlations were actually negative (two being significantly so). These negative correlations can be explained in terms of the tendency to regard one's own characteristics as important, since the two significantly negatively correlated statements were no. 19, "I'm bad at mechanical tasks", and no. 20, "Computers are a mystery to me". The other three reflect somewhat socially undesirable characteristics viz. no. 1, "I am shy in large social groups", no. 2, "I usually leave assignments until the last minute", and no. 9, "My desk or work area at home is usually very untidy". Positive correlations on the other hand appertain to positive personal characteristics. Taking those which are above .5, for example, the relationship holds for "I am a perceptive person", "I approach all new tasks in a very methodical manner" and "I am a fairly sophisticated person".

The fact that the strongest relationship occurred for no. 11, "I daydream a lot", might be explained in terms relating to the individual's interpretation of the characteristic being "an important part of my idea of myself". That is, it may be that the meaning of "importance" shifts between variables, so that sometimes it means "socially desirable", sometimes "my ideal", and in this case, perhaps, something like "very indicative of what sort of person I am". The implication of such an interpretation is that clarification of questionnaire instructions is essential if respondents are all to make conceptually identical importance ratings.

#### 10.1.3.3.4 Relationship between Specific and General Self-Concept Variables

Although Markus generally uses the criterion of extremeness and importance ratings on a combination of two or three trait terms in classifying schematics, it was decided from the beginning that one statement only, the one relating to the relevant specific ability, would be used as criterial in selecting subjects for various experiments. In the case of Experiment 4, for example, the item was "I can judge pretty well straight away if a person is artistically talented". This approach was regarded as being consistent with the work relating behaviour to specific versus general attitudes (e.g., Ajzen and Fishbein, 1977) and specific versus general self-concept (e.g., Brookover et al, 1965). However, with reference to Experiment 4, two general or superordinate (if the cognitive structure of self-schemas is regarded as hierarchical), statements were also included, "I am a perceptive person" and "I am a good judge of people".

The relationship between the specific and general variables was examined. A fourth variable, "I have never felt confident that I could judge a person's intelligence" was also included in this analysis. Subsequent to the distribution and return of the questionnaires, however, it was judged that this item caused difficulty in relation to the "self-description" task. Respondents may well have had difficulty in deciding whether it was the negative or positive of the statement which should be considered, although it was intended that they

consider the statement as given, viz. the negative version. The greatest difficulty with the negative statement was the juxtaposition with the wording "this characteristic".

The four variables were crosstabulated and measures of association were calculated to determine the extent of any relationships. The relationship between "I am a perceptive person" and "I can judge pretty well straight away if a person is artistically talented" was significant ( $\chi^2=13.49$ ,  $df=4$ ,  $p=.009$ ). The relationship between "I am a good judge of people" and "I can judge pretty well straight away if a person is artistically talented" was also significant ( $\chi^2=13.63$ ,  $df=4$ ,  $p=.009$ ). The crosstabulation of "I am a perceptive person" and "I've never felt confident that I could judge a person's intelligence" was significant ( $\chi^2=23.72$ ,  $df=4$ ,  $p=.0001$ ). When "I am a good judge of people" was crosstabulated with "I've never felt confident that I could judge a person's intelligence" the relationship was significant ( $\chi^2=24.49$ ,  $df=4$ ,  $p=.00001$ ). The relationship between the two "general" statements was also highly significant, as might be expected ( $\chi^2=52.58$ ,  $df=4$ ,  $p=.00001$ ).

#### 10.1.3.3.5 Factor Analysis of "Self-Description" and "Self-Rating" Variables

##### 10.1.3.3.5.1 "Self-Description" Variables

A principal components factor analysis of the self-description variables revealed nine orthogonal factors. The factor correlation matrix (see Table 10.1.8) shows that there were no sizeable interfactor correlations after an oblique rotation.

**Table 10.1.8:** Self-Concept Questionnaire (Version 2) - Factor intercorrelation matrix of "self-description" variables.

Factor	1	2	3	4	5	6	7	8
1								
2	.130							
3	.157	.151						
4	-.001	-.056	.014					
5	.185	.161	.175	.030				
6	.149	.182	.114	-.022	.147			
7	-.254	-.016	-.115	.008	-.104	-.123		
8	.131	-.048	-.109	.049	-.069	-.074	.113	
9	.067	.052	.081	-.053	.066	-.047	-.019	-.063

Table 10.1.9 shows the eigenvalues and percent of variance accounted for by each factor after a varimax rotation. The results indicate that, despite the removal of the two items from the subset of 23 discussed above, and the addition of the person perception items, nine independent factors were represented.

**Table 10.1.9:** Self-Concept Questionnaire (Version 2) - Final statistics after factor analysis, followed by varimax rotation, of "self-description" variables.

Factor	Eigenvalue	% of variance	Cum %
1	4.64	18.6	18.6
2	1.93	7.7	26.3
3	1.48	5.9	32.2
4	1.32	5.3	37.5
5	1.23	4.9	42.4
6	1.16	4.6	47.1
7	1.11	4.4	51.5
8	1.09	4.4	55.9
9	1.05	4.2	60.1

The total amount of variance accounted for by the nine factors was 60.1 percent.

#### 10.1.3.3.5.2 Factor Analysis of "Self-Rating" Variables

Results similar to those reported in Section 10.1.3.3.5.1 above were found when the self-ratings were factor-analyzed. Table 10.1.10 shows the correlation matrix, and Table 10.1.11 the percent of variance accounted for by each factor. Since these results suggest that the items in the questionnaire cover a fairly wide range of areas or domains relating to self-conception, it seems reasonable to take a score for "Schematism/Self-Construction" from it. The largest correlation in the matrix is 0.19, between Factors 1 and 9 (compared to a maximum 0.14 when the short version was factor analyzed previously), but the majority of correlations are very small or negligible. Nine factors accounted for 62.4 percent of the variance, with the eigenvalues and percent of variance taken up by each factor being almost identical to those of the earlier analysis. While admittedly only 21 items were in common between these two analyses, given that the data were collected from two different samples of Psychology I undergraduates, in successive years, the outcome suggests some stability in the core items of the measure.

**Table 10.1.10:** Self-Concept Questionnaire (Version 2) - Factor intercorrelation matrix, self-rating variables.

Factor	1	2	3	4	5	6	7	8
1								
2	-.038							
3	-.104	.021						
4	-.032	.026	-.027					
5	.101	-.050	.003	.036				
6	-.078	.068	.076	-.032	-.036			
7	-.068	-.090	.013	.039	-.004	-.076		
8	-.137	-.123	.100	-.102	-.016	-.013	.042	
9	-.191	-.016	-.009	-.069	.048	.025	-.075	.143

**Table 10.1.11: Self-Concept Questionnaire (Version 2) - Final statistics after factor analysis, followed by varimax rotation, of self-rating variables.**

Factor	Eigenvalue	% of variance	Cum %
1	3.02	12.1	12.1
2	2.31	9.2	21.3
3	2.03	8.1	29.4
4	1.81	7.2	36.7
5	1.54	6.2	42.8
6	1.34	5.3	48.2
7	1.31	5.2	53.4
8	1.20	4.8	58.2
9	1.04	4.2	62.4

### 10.1.3.3.6 Gender Differences

#### 10.1.3.3.6.1 "Self-Descriptive" Variables

The "self-descriptive" variables were crosstabulated by gender, and values of chi-squared were calculated. There were no significant associations between gender and tendency to be schematic or aschematic (or constructual/aconstructual) on any variable.

#### 10.1.3.3.6.2 Extremeness of Self-Rating and Importance (Markus' Criteria)

There were no significant associations between gender and being schematic on any variable, using Markus' (1977) selection criteria.

#### 10.1.3.3.6.3 "Self-Rating" Variables

A series of t-tests revealed that there were eight variables on which the genders differed significantly in their self-rating. Significant differences are set out in Tables 10.1.12 to 10.1.19.

(1) "I have never felt confident that I could judge a person's intelligence"

**Table 10.1.12: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I have never felt confident that I could judge a person's intelligence".**

Item	Gender	N	Mean	s.d.	t	df	p
7. I have never felt confident that I could judge a person's intelligence	M	47	3.81	2.55	-2.06	179	.041
	F	134	4.84	3.09			

(2) "If someone criticizes me, I get upset"

**Table 10.1.13: Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "If someone criticizes me, I get upset".**

Item	Gender	N	Mean	s.d.	t	df	p
8. If someone criticizes me, I get upset	M	47	6.23	3.39	-3.34	179	.001
	F	134	7.98	2.87			

(3) "I don't think I would win a prize for creativity or originality"

**Table 10.1.14:** Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I don't think I would win a prize for creativity or originality".

Item	Gender	N	Mean	s.d.	t	df	p
14. I don't think I would win a prize for creativity or originality	M	47	3.79	2.81	-3.33	180	.001
	F	135	5.69	3.54			

(4) "I have a very logical mind"

**Table 10.1.15:** Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I have a very logical mind".

Item	Gender	N	Mean	s.d.	t	df	p
15. I have a very logical mind	M	47	8.38	2.35	1.92	180	.057
	F	135	7.48	2.91			

(5) "I'm bad at mechanical tasks"

**Table 10.1.16:** Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I'm bad at mechanical tasks".

Item	Gender	N	Mean	s.d.	t	df	p
19. I'm bad at mechanical tasks	M	47	5.29	3.40	-2.00	180	.047
	F	135	6.44	3.35			

(6) "Computers are a mystery to me"

**Table 10.1.17:** Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "Computers are a mystery to me".

Item	Gender	N	Mean	s.d.	t	df	p
20. Computers are a mystery to me	M	46	4.72	3.48	-5.16	179	.0001
	F	135	7.58	3.17			

(7) "I am a fairly sophisticated person"

**Table 10.1.18:** Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I am a fairly sophisticated person".

Item	Gender	N	Mean	s.d.	t	df	p
22. I am a fairly sophisticated person	M	47	8.28	2.48	4.40	180	.0001
	F	135	6.28	2.74			



(8) "I am not at all competent when it comes to mechanical devices"

**Table 10.1.19:** Self-Concept Questionnaire (Version 2) - Results of t-test comparing genders on their self-ratings of "I am not at all competent when it comes to mechanical devices".

Item	Gender	N	Mean	s.d.	t	df	p
24. I am not at all competent when it comes to mechanical devices	M	47	4.77	3.52	-2.88	180	.004
	F	135	6.38	3.23			

#### 10.1.3.3.6.4 Importance Ratings

There was one significant difference between genders in their importance ratings, on the variable "I am not at all competent when it comes to mechanical devices" (M: mean=6.06, s.d.=3.27, N=47; F: mean=4.81, s.d.=3.02, N=135:  $t=2.41$ ,  $df=180$ ,  $p=.023$ ).

#### 10.1.3.3.6.5 Schematism Scores

In contrast to the above results, there were no significant differences between the genders in Schematism/Self-Construction calculated by either technique.

Perhaps these differences in extremeness of self-rating, but not in being constructual on the given variables, reflects the use of gender stereotypes by males and females. That is, could it be that respondents knew the social stereotypes for extremeness of self-rating on the variables, but not for importance (cf. the one significant result above, however - definitely a social stereotype), nor for being constructual in the current definition of the present researcher, viz. inclusion in self-description?

#### 10.1.3.3.7 Correlations Between Scales

##### 10.1.3.3.7.1 Correlations of Self-Monitoring with Schematism Variables

Small correlations were obtained between Self-Monitoring and Schematism, and Self-Monitoring and Self-Construction (with Self-Construction score,  $r=.192$ ,  $N=170$ ,  $p=.006$ ; with Schematism score,  $r=.165$ ,  $N=170$ ,  $p=.016$ ).

##### 10.1.3.3.7.2 Intercorrelations of Schematism Scores

Self-Construction score correlated significantly with Schematism score ( $r=.599$ ,  $N=185$ ,  $p=.0001$ ).

### 10.1.4 Development of Questionnaire: Stage 3

#### 10.1.4.1 Introductory Remarks

In 1987 the final version of the questionnaire used in the present research sequence, called the Self-Construction Questionnaire, was devised for use in selecting subjects for Experiment 7 (described in Chapter 9 Part 2). It appears in Appendix 6.3. There were 22

items, 21 of which were the "core" items included in earlier factor analyses. It was necessary to devise and test this third version since the Markus task was not to be included this time, and items specific to other experiments were to be removed. Another item was exchanged because it had drawn comments from respondents, some of whom had actually written out a positive version to replace the negative one. Thus "I don't think I would win a prize for creativity or originality" was replaced by "I am rather more creative and original than many other people".

#### 10.1.4.2 Self-Construction Scores

158 Self-Construction Questionnaires were returned after distribution during testing sessions in 1987. The mean age of those completing the questionnaire was 21.08 years (s.d.=6.12, range=16.25 to 49.25 years). Ninety-two were female and 57 were male (nine missing values).

Table 10.1.20 shows descriptive statistics for the Self-Construction Questionnaire compared with those same statistics derived from the Self-Concept Questionnaire (Version 2), that is, the 1986 results.

**Table 10.1.20:** Comparison of scoring on Self-Construction in the 1986 and 1987 samples.

Scale/Score	Mean	s.d.	Min.	Max.	N
Self-Construction Questionnaire (1987)	12.68	4.79	1	22	158
Self-Concept Questionnaire (2) (1986)	12.48	4.89	0	25	185

Despite the fact that there were 25 items in the questionnaire in 1986, and 22 in 1987, the results were quite comparable, indicating some inter-subject reliability of the scale.

##### 10.1.4.2.1 Gender Differences in Scoring

A t-test revealed no significant difference between the genders in Self-Construction scores.

#### 10.1.4.3 Factor Analysis of "Self-Description" Variables

Although the Kaiser-Meyer-Olkin measure of sampling adequacy was at the margin of acceptability for doing so (.572 - see Discussion), the 22 self-description variables were subjected to a principal components factor analysis. Nine orthogonal factors emerged. As can be seen in Table 10.1.21 there were no sizeable interfactor correlations after oblique rotation.

**Table 10.1.21:** Factor intercorrelation matrix after principal components factor analysis, followed by oblique rotation, of the 22 self-description items of the Self-Construction Questionnaire.

Factor	1	2	3	4	5	6	7	8
1								
2	.026							
3	-.012	.009						
4	.003	-.018	-.055					
5	-.046	-.039	-.052	.019				
6	.043	.084	.024	-.043	-.016			
7	-.169	-.093	.052	.035	.039	-.008		
8	-.102	-.045	.096	.017	.041	-.0002	.084	
9	-.081	-.049	.087	.067	.032	.019	.064	.043

Results of a varimax rotation showed that nine factors accounted for 62.1 percent of the variance, results comparable to those obtained in 1986 (refer to Table 10.1.9), although in that case the first factor took up a relatively greater amount of the variance. Table 10.1.22 shows the results for the Self-Construction Questionnaire. It can be seen that eigenvalues are again consistently higher than one for every factor, but that the first factor accounts for less of the variance than it did in the earlier analysis. While it should be noted that Zwick and Velicer (1986) found that using the K1, eigenvalue greater than one, rule results in a consistent overestimation of the number of major factors in any data set, relative to the number of items in the questionnaire the present data are clearly not able to be summarized by a few derived variables.

**Table 10.1.22:** Self-Construction Questionnaire - Final statistics after factor analysis, followed by varimax rotation, of self-description variables.

Factor	Eigenvalue	% of var.	Cum. %
1	2.58	11.7	11.7
2	1.99	9.0	20.8
3	1.72	7.8	28.6
4	1.44	6.5	35.1
5	1.37	6.2	41.3
6	1.26	5.7	47.1
7	1.19	5.4	52.5
8	1.07	4.9	57.3
9	1.04	4.7	62.1

**Table 10.1.23: Factor loadings of 0.3 or higher on items of the Self-Construction Questionnaire (#=item substituted for the earlier, negatively-worded version).**

Item/Factor	1	2	3	4	5	6	7	8	9
I am not at all competent when it comes to mechanical devices	.821								
I am bad at mechanical tasks	.806								
Computers are a mystery to me	.678								
I approach all new tasks in a very methodical manner		.705							
I usually leave assignments until the last minute		-.666							
My desk or work area at home is usually very untidy		-.643							
I play a lot of sport			.762						
I am shy in large social groups			-.592		.303				
I tend to persist at tricky problems even when I am frustrated by them		.372	.396	.306					
Imaginativeness is not one of my most obvious abilities			-.828						
#I am rather more creative and original than many other people				.609					.439
If I have to do a boring and repetitive task I get very impatient					-.776				
I usually remain patient even when I make mistakes at a task					.637	-.311			
If someone criticizes me, I get upset						.841			
I have a very logical mind		.324				-.487		.328	
I find computer games quite addictive	-.308						.653		
I daydream a lot							.603		
I am quite greedy about my favourite foods							.488		
I find most word games fascinating								.789	
I am a good judge of people				.356				.530	
I am a fairly sophisticated person									.695
I am generous with money				.307					.568



#### 10.1.4.4 Interpretation of Factor Analyses

Superficially the above result appears to provide further support for the inter-subject reliability of the measure. However, although it was never intended that individual factors should be interpreted since the aim of the analysis was to determine that a range of different domains of the self was being sampled, examination of the items loading on each factor in the two years does to some extent undermine the apparent stability of the measure. Tables 10.1.23 and 10.1.24 on the previous two pages show the item-by-item loadings for 1987 and 1986 respectively. Loadings of 0.3 or greater only are shown. It is apparent that the factor structure derived in the two years is by no means identical.

#### 10.1.5 Acquiescence or Response Set

Given the nature of the questionnaire it was difficult to control for acquiescence or response set. Some items expressed in a negative direction were originally included, but comments from respondents suggested that they found it difficult to think in terms of the denial of a negative. For that reason items of this type were kept to a minimum. It was thus difficult to establish, with reference to the questionnaire alone, that an apparent cognitive style score was not simply acquiescence or response set, either due to the nature of the items, or to some interaction with individual variables.

However, several other lines of evidence which were brought to bear on the issue suggested that response set was not a serious problem. Firstly, the correlations observed between scoring on the questionnaire and a diversity of experimental variables suggested that respondents were genuinely doing the task as set. Thus, Self-Construction correlated with reaction times to make decisions about one's own personal characteristics (Experiment 5, described in the second part of the current chapter), and with number of judgments, and confidence in judgments, made about other people (Experiment 4), as well as with various task evaluation responses (Experiment 3).

Secondly, the measure correlated with other established measures, with the Private Self-Consciousness subscale (Self-Concept Questionnaire:  $r=.414$ ,  $N=51$ ,  $p<.01$ ), and with the Self-Monitoring scale (Self-Concept Questionnaire (Version 2):  $r=.192$ ,  $N=170$ ,  $p<.05$ ).

Thirdly, the measure did not correlate with a bogus questionnaire used to measure "Cognitive Style" (Experiment 7) ( $r=.089$ ,  $N=79$ ,  $p=.215$ ). This latter questionnaire is *prima facie* rather similar to the Self-Construction Questionnaire in terms of direction of wording of items and content of items. If individuals were responding in an acquiescent manner on the one questionnaire, it might be expected that they would do so on the other.

Fourthly, examination of the distribution of scores on the Self-Construction Questionnaire indicated that there was no clustering of scores at either the low or the high end of the scale. The distribution (not depicted here) was somewhat leptokurtic (kurtosis=-.63), and slightly negatively skewed (skewness=-.187).

Fifthly, the score for Self-Construction derived using this researcher's criterion correlated well with the score derived using Markus' (1977) more complex criteria (Self-Concept Questionnaire (Version 2):  $r=.599$ ,  $N=185$ ,  $p<.0001$ ).

Finally, specific analyses were undertaken in relation to the Self-Consciousness and Self-Monitoring scales to determine whether correlations with negative and positive items on those scales was approximately similar. This did not prove very satisfactory in relation to the former questionnaire since only two items are reversed ("Generally, I'm not very aware of myself" and "I never scrutinize myself"). However, correlations with Self-Construction were  $r=.275$  ( $N=51$ ,  $p<.05$ ) from the sum of the two negative items, and  $r=.406$  ( $N=51$ ,  $p<.01$ ) for the sum of the positive items. The Self-Monitoring scale is approximately evenly split into positively and negatively worded items, and although the total correlation between that scale and the Self-Construction Questionnaire is not high, comparing correlations with the two halves separately indicates that responses on the two sorts of items were similarly distributed (for "true" items -  $r=.173$ ,  $N=170$ ,  $p<.05$ : for "false" items -  $r=.167$ ,  $N=170$ ,  $p<.05$ ).

In conclusion, the evidence suggests that the Self-Construction Questionnaire probably does not induce acquiescent responding to any greater extent than many other satisfactory scales.

#### **10.1.6 Discussion**

It seems likely that the Self-Construction Questionnaire measures what might be considered a cognitive style variable, the tendency or willingness to think about one's characteristics, to know what they are, and to formulate a self-description quite consciously. It has been argued that the score is unlikely to reflect acquiescence, and further work with the measure might thus be warranted, despite the lack of comparability of the factor structures derived from two versions of the questionnaire administered in successive years.

A major reason for not considering the factor analytic results too seriously is that, given the nature of the scale, factor analysis was by no means an ideal form of analysis. Items were rated on 3-point scales (conceptually 2-point), and the Kaiser-Meyer-Olkin statistic was in every case only marginally adequate. While this indicates that correlation between items was never very high which in itself could be used as evidence that the items were from a range of different domains of the self, the problem of the basing of those correlations on 3-point scales cannot be overcome. The analyses were carried out in the absence of any preferable technique, but for the reasons mentioned the results should be interpreted with caution. Thus the value of the questionnaire as a valid or reliable instrument has neither been established nor disproven. With regard to the differences between the years, the inclusion in 1986 of the fairly complex Markus (1977) self-rating tasks, in addition to the few extra items, might have had an impact on the overall judgments made by

subjects. Therefore, were it to be considered worthwhile pursuing, both inter-subject and intra-subject reliability would still need to be established.

It seems unlikely that the criterion for selecting respondents who are constructual on certain dimensions is superior to Markus' (1977) criteria given the close relationship of the two measures and the similarity of the pattern of relationships with other measures (for example, Experiment 4). However, the questionnaire as it currently stands does have the virtue of simplicity.

On the other hand, the three category system which is essential for a "self-description" criterion (an item is, or is not, part of one's self-description) is likely to limit the size of correlations and thus militates against more sophisticated analysis of the scale.

A further problem is that to establish the task for the respondent requires her/him to consider whether the characteristic is applicable (part (a) of an item) before considering whether or not s/he has previously thought that about her/himself (part (b)). Although information from part (a) might prove useful for some purposes (as in some of the studies described here), it does not itself participate in the score derived from the scale. The questionnaire instructions could conceivably be rewritten so that respondents were directed to do part (a) mentally before answering a question in the form of part (b), but that questionnaire would need to be piloted.

Another point relates to recent theoretical work on the self-concept. In their formulation of the self-concept, Cantor, Markus, Niedenthal and Nurius (1986) argue that while research has not been devoted to examining the self-concept as a dynamic structure, it is intuitively obvious that self-conceptions can change according to situational factors. It is thus more realistic to think not of the self-concept, but of the current self-concept. However, this "working self-concept" "certainly includes some well-elaborated core conceptions that, because of their importance in identifying or defining the self (e.g., self-schemata), are chronically available" (Cantor et al, 1986, p. 104). The universe of self-conceptions is stable, but the working self-concept changes situationally, and at any given time is a subset of that universe. It may be assumed that what is being measured by using the "self-description" instruction is in some sense a "core" self-conception, or at least one that has fairly frequently been consciously considered (cf. Markus and Kunda, 1986). However, as has been noted at other points, "importance" may be a very powerful variable in relation to effects, and no direct question is asked about it in the Self-Construction Questionnaire. It cannot be assumed that inclusion in the self-description necessarily implies importance in the self-conception, although perhaps it implies "chronic availability". While it is implicit in the argument of Cantor et al that importance and availability are strongly related, this also cannot be assumed. To use an example that was used previously, I might have a very clear notion of my ineptitude in relation to mechanical devices, might always include that notion in spontaneous self-descriptions, and yet not consider such a fact about myself to be in any way important to my self-conception.



Finally, items for the questionnaire were deliberately selected as having relevance to Psychology I undergraduates, so that the application of the scale is likely to be limited. Should further measurement of the putative construct be undertaken it might be necessary to include different sets of self-relevant items for different subgroups. Each version would then need separate validation. Regarding the content of items, it could also be argued that although efforts were made to ensure that a number of unrelated domains of the self were included, it cannot be known on the basis of analyses undertaken whether a high score for some individuals might not simply reflect a personally fortuitous selection of items. Despite these difficulties with the scale itself, the work described in the second part of this chapter does provide evidence for the assertion that some individuals think about themselves and know their own characteristics in a range of domains with greater certainty than do others.

**PART 2**  
**EXPERIMENT 5**

**10.2.1 Introduction**

A reaction time study was undertaken in an attempt to further validate the "Schematism/Self-Construction" variable by relating it to a behavioural measure. Subjects whose Schematism and Self-Construction scores were known were asked to participate in a study in which they were to respond "true" or "false" to a series of items which might be self-descriptive; their reaction times were measured. Markus has used reaction times as dependent measures in a number of her studies. In 1977, for example, she reported that if an individual has a schema in a particular domain, reaction times to schema-relevant items are, in general, quicker than they are for the individual without that schema. In terms of schema theory, this is presumably because individuals who have developed a schema about some specific domain of the self will have integrated closely-related and relevant constructs into that structure. Thus, when an aspect of this "cognitive or knowledge structure" (Markus and Smith, 1981, p. 240) is activated, the entire structure is activated. Models describing this process have been referred to previously, and include "spreading activation" models and analogies with semantic coding (e.g., Collins and Quillian, 1969), and a "storage bin" model (Wyer and Srull, 1981, 1986).

Markus' (1977) method consisted of using a large number of trait adjectives, including some previously judged as related to "independence", and some to "dependence". Words relevant to a control domain, "creativity", were also included. Subjects were to press either a "me" or a "not me" button in response to each word. Markus found that while dependent schematics did say that independent words applied to them, they took significantly longer to make these judgments than did independent schematics. Overall, processing times of independent schematics were faster on schema-related words, as were processing times of dependent words for dependent schematics.

Aschematics, by contrast, did not use the dependent and independent words differentially in describing themselves, although they responded "me" to more dependent than independent words. There was no difference among aschematics in processing times for the two sets of words. Across all subjects average latency for a "not me" response to dependent words was 2.63 seconds, compared to 2.22 seconds for independent words; it was suggested that perhaps the dependent traits appeared more desirable and were therefore more difficult to reject. An examination of Markus' graphs indicates that latencies were generally in the range of 2.0-2.5 seconds for self-descriptive words, and about 2.2-2.8 for traits judged not self-descriptive. Markus et al (1982) replicated these results in relation to a different domain, that of gender.

The present researcher has suggested that "Schematism/Self-Construction" might be an individual difference variable, that is, that individuals think about themselves on a range

of variables to a greater or lesser extent. However, Markus, Smith and Moreland (1985) argued that it is unlikely that there could be any interpretation for their results other than as the expression of expertise in quite specific domains, since no intelligence or cognitive style differences have been found between schematics and aschematics in various domains. "Moreover, individuals are rarely found to be generally schematic (schematic in many domains) or generally aschematic" (ibid., p. 1501). Some evidence for this was presented in Markus' 1977 paper. Here she investigated the possibility that independent/dependent aschematics have generally global or undifferentiated cognitive styles. She used Kendall's tau-b as a measure of a subject's departure from the standard of responding "me" to all 15 independent words and "not me" to all 15 dependent words (similarly with the creative and non-creative words), arguing that the closer the value to 1 or -1, the more clearly the subject defined her/himself on this dimension. The prediction following from a cognitive style hypothesis would be that subjects with high tau values, either positive or negative, on the independent/dependent adjectives would be the same subjects with high absolute values of tau on the creative/non-creative words. Markus found no association between the sets of tau-b absolute values for Independents ( $r=.00$ ), Dependents ( $r=-.07$ ) or Aschematics ( $r=-.14$ ). However, in view of the results in relation to "Schematism/Self-Construction" presented in Part 1 of this chapter, and the fact that Markus compared only two domains, further investigation of this putative cognitive style variable across a range of domains seemed warranted.

If individuals differ in the extent to which they are "generally schematic....or generally aschematic" (Markus et al, 1985, p. 1501), it is likely that such a difference might be reflected in the speed with which they are prepared to endorse a range of items as self-descriptive. It was predicted that if individuals were asked to respond "true" or "false" to a series of self-statements, there would be a negative relationship between reaction times and Schematism/Self-Construction scores. That is, those who are high in Self-Construction are able to process self-relevant information in all domains more quickly simply because they have a better integrated and more extensive self-structure in general. They have more ready access to a variety of self-knowledge.

The prediction was to some extent tentative in that the reaction time effect reported by Markus is not universally demonstrable. Rogers (1981), for example, interprets his work (Kuiper and Rogers, 1979) as being consistent with a U-shaped relationship in which items of extreme relevance and extreme irrelevance result in shorter reaction times, and medium-relevance items result in longer ones. Although the main purpose of that research was somewhat tangential to the present discussion, being self-other differences in encoding and recall, Markus has herself found some results which might be interpreted as contradictory. For example, false feedback on an attribute was processed more slowly by individuals who were schematic on that attribute than by aschematics (1977). In a study by Markus, Hamill and Sentis (1987) it was found that subjects with "body weight schemas" took longer to

process some schema-relevant information than did aschematics. (The authors argue that a schema with an obvious referent like this one is likely to have both "universalistic" and "particularistic" features, and therefore even apparent aschematics will have "some concept or general organization of information about their body weight that allows them to evaluate verbal stimuli for self-relevance" (ibid., p. 60)).

Taylor and Crocker (1981) raise the possibility that perceptual and simple cognitive schemata may function to identify stimuli and process information rapidly while more complex social schemata may function, in part, to recognize information that requires longer and more detailed processing. They suggest that the latter type of schemata probably do both, enabling the perceiver to process some information more rapidly and other information in greater depth. They summarize the reaction time differences in processing schema-relevant versus schema-irrelevant input with the following hypothesis: "Whether or not schema-relevant material is processed faster than schema-irrelevant material depends on the valence, centrality, evaluative consistency, novelty, and implications of the material" (ibid., p. 103).

Zajonc (1980) takes a divergent perspective on reaction time studies for items in the self-concept. In arguing for his proposition that affective and cognitive reactions to stimuli are likely processed by two separate systems, Zajonc considers an experimental situation in which the subject is asked to indicate whether an adjective such as "honest" is self-descriptive. He argues that it is unlikely that the decision process involves checking any sort of list of trait adjectives because the self is simply not stored in this way. The question is most likely interpreted as "Is the trait 'honest' consistent with your perception of yourself?" He suggests that "...some form of affective consistency is probably involved. That is, the self as used in this task is probably some global and general impression suffused with affective quality. What is matched is primarily the affective quality of the item with the affective quality of the impression" (ibid., p. 167). Zajonc believes that this accounts for the relatively shorter processing times for self-referent items (as opposed to other-referent items) because "an emotional match would therefore be quite easy for the subject to verify" (ibid.). Further, he believes that there is a need in such studies to separate the elaboration and integration of the cognitive structure from the affect that pervades it. He suggests, however, that this is likely to prove very difficult to achieve, since the two are highly correlated.

Others (e.g., Rogers, 1981) have made an analogy between the self in memory and a semantic store. Indeed there are similarities between a study of the kind undertaken and the work of researchers like Collins and Quillian (e.g., 1969, 1970) who report several experiments on property and superset (category) comparisons in relation to semantic memory. In their model each word has stored with it a configuration of pointers to other words in the memory - this configuration represents the word's meaning. Presumably "myself" would have a very dense configuration. In studies generated within their model,

the task of subjects was to decide the truth of statements like "a cedar is a tree" and "tennis is a game" (true) or "lemonade is alcoholic" and "football is a lottery" (false). The grammatical subject was always a concrete noun from the lowest level in a hierarchy envisaged by Collins and Quillian (1969) (for example, "canary", a specific instance, would be level 0 in the hierarchy nested in "bird", level 1, within "animal", level 2). Analogously in the present study, "I" could be regarded as at the lowest level in a stored hierarchy. Half of their comparisons were property comparisons and half were categorical comparisons. In the present study, the judgments to be made could be regarded as "property comparisons".

Collins and Quillian (1969) found that the difference between property and categorical comparisons was large, and this is part of the evidence they use in support of their hypothesis that such information is hierarchically stored. They suggest various hypotheses to account for the difference in times taken to respond "true" and "false". For example, under the terms of "search-and-destroy" it is suggested that the subject is trying to find paths through her/his memory which connect the subject and predicate of the sentence. When s/he finds a path s/he must check to determine whether it agrees with what is stated in the sentence, and having checked to a certain "depth" s/he responds "false". Thus "false" time will be longer than "true" time, but may be highly variable depending on how many connective paths must be checked out before the sentence is rejected. If this is an accurate model, then implausible comparisons should be rejected faster than plausible ones ("a canary has dials" cf. "a canary has gills"). This result was obtained in the 1970 work of Collins and Quillian. Markus (e.g., 1977) has recorded longer times for "not me" than "me" decisions, but generally all reaction times in relation to self-relevant material are about twice those recorded in studies of property and category comparisons: the latter are in the range of about 0.9 seconds to 1.5 seconds (e.g., Collins and Quillian, 1969, 1970; Holyoak and Glass, 1975). This may reflect the assumed greater number of interconnections in the self-network.

In conclusion, the aim of the study was to investigate the relationship between Schematism/Self-Construction and reaction times to respond to a variety of self-items, and to compare specific results obtained with those of other researchers.

## **10.2.2 Method**

**10.2.2.1 Subjects:** Psychology I undergraduates who had already participated in Experiment 4 were contacted by telephone and asked to participate in a "Self-Perception Study". Fifty-three students were available at the time that this contact was made. None refused to participate in the study, but one failed to arrive at the appointed time. The average age of subjects was 20.47 years (s.d.=5.90).

**10.2.2.2 Statements:** Subjects were to be required to respond "true" or "false" to a series of statements. Thus a series of self-items which could apply to any individual were collected for the task. The Gough and Heilbrun Adjective Checklist (1965) was used as a source, as it

had been for the original Self-Concept Questionnaire, although some items reflecting underlying traits used in that questionnaire, but which had proved to be very skewed, were able to be excluded. Three items from the original Self-Concept Questionnaire not used in the Self-Concept Questionnaire (Version 2) were considered for inclusion since they were just below the criterion in constructing that second version. Two of these were included, but the third was not since it had drawn some critical comments when the former questionnaire was administered. Most importantly, an attempt was made not to overlap underlying trait concepts implied in the items with those of the Self-Concept Questionnaire (Version 2). No particular attempt was made to equalize the length of statements in the preliminary trial of the technique, since it was planned to examine times for each item separately as well as average times - and the time for reading and processing the statement should be a constant within-subject factor in any case. Five "factual" (i.e., empirically verifiable) statements were also included for comparison purposes (items 5, 10, 15, 20 and 25 in Table 10.2.2). It was hoped that the items included were roughly representative of positive, negative and socially desirable characteristics, but no independent ratings of these dimensions were obtained. The practice items included were Markus' (1977) "honest", "intelligent" and "friendly".

10.2.2.3 Procedure: Each subject came to the laboratory individually, was seated in front of a North-Star Advantage computer screen and given a single typed sheet of instructions to read. Once the subject indicated that s/he understood what was expected, namely that s/he was to decide for each statement "whether it is true or generally true of me, or false or generally false of me", the keypad attached to the computer was positioned appropriately as to the subject's dominant hand, and the subject began the practice items. The researcher then left the room and the subject initiated and completed the test items on her/his own.

### **10.2.3 Results**

#### **10.2.3.1 Relationship between Self-Construction (Schematism) and Reaction Times**

Pearson correlation coefficients were calculated between Self-Construction score and each individual item, between this score and an average reaction time to the factual items, an average reaction time to the personal construction items (those not regarded as "factual"), and an overall average. Table 10.2.1 shows these results. Also shown are results for a social desirability set (those items to which a majority of subjects responded "true"- see Section 10.2.3.3 below) and an adjusted set (excluding extreme scores - see Section 10.2.3.2 below). The same correlations were calculated with Markus' Schematism score. The results were remarkably similar for the two scoring techniques. Correlations with Self-Monitoring are also shown.

**Table 10.2.1: Correlations between Self-Construction, Schematism, and Self-Monitoring, and selected subsets of stimulus items used in reaction-time task.**

Type of Item (Average Reaction Time)	Self-Construction r	Schematism r	Self-Monitoring r
Personal Construction	-.274*	-.279*	-.058
Factual	-.378**	-.327**	-.112
Overall	-.287*	-.288*	-.063
Adjusted	-.293*	-.296*	-.055
Social Desirability	-.332**	-.370**	-.147

\* =  $p < .05$

\*\* =  $p < .01$

#### 10.2.3.1.1 Personal Construction Items

There was a significant negative correlation between Self-Construction score and reaction times to items from a variety of personal domains (that is, the average reaction time to respond to all but the "factual" items). This relationship, while not large, was in the predicted direction, and was statistically significant (with Self-Construction score  $r = -.274$ ,  $N = 52$ ,  $p = .025$ ; with Markus' Schematism score  $r = -.279$ ,  $N = 52$ ,  $p = .023$ ).

##### 10.2.3.1.1.1 Relationship With Self-Monitoring Score

The correlation between Self-Monitoring and time taken to respond to personal construction items was negligible ( $r = -.058$ ).

#### 10.2.3.1.2 Factual Items

There were somewhat higher negative correlations between Self-Construction and average reaction time to the five factual items ( $r = -.378$ ,  $N = 52$ ,  $p = .003$ ), and between Schematism and reaction times ( $r = -.327$ ,  $N = 52$ ,  $p = .009$ ).

##### 10.2.3.1.2.1 Relationship With Self-Monitoring Score

The correlation between Self-Monitoring and time to respond to factual items was small and non-significant ( $r = -.112$ ).

#### 10.2.3.1.3 Overall Average

There was a significant negative correlation between Self-Construction and average reaction times over all 30 items ( $r = -.287$ ,  $N = 52$ ,  $p = .019$ ), as there was between Schematism and overall average ( $r = -.288$ ,  $N = 52$ ,  $p = .019$ ).

##### 10.2.3.1.3.1 Relationship With Self-Monitoring Score

The correlation between Self-Monitoring and time taken to respond to all items was negligible ( $r = -.063$ ).

#### 10.2.3.1.4 Comparison of Subjects Above and Below the Mean on Self-Construction and Schematism

Subjects were split at the mean ( a number of them were clustered at the median) of both distributions of self-concept scores, and t-tests were calculated to compare the two halves. For the Schematism comparison there were no significant differences, and for the Self-Construction comparison there was only one significant difference. Subjects above the mean on Self-Construction responded more quickly to factual items than did those below the mean ( $t=2.2$ ,  $df=49.81$ ,  $p=.032$ ).

**Table 10.2.2: Item-by-item correlations between reaction times and Self-Construction scores, and reaction times and Schematism scores.**

Score Item	Self-Construction		Schematism	
	r	p	r	p
1. I have a variety of different hobbies	-.224	.055	-.118	.203
2. I am an ambitious person	-.295	.017	-.375	.003
3. I never persist at a puzzle unless I'm pretty sure I'll be able to solve it.	-.039	.393	-.081	.284
4. I am generally considerate of others	-.210	.067	-.210	.067
5. I am enrolled in Psychology I	-.418	.001	-.307	.013
6. I tend to be absent-minded	-.300	.015	-.274	.025
7. I am an assertive person	-.178	.103	-.281	.022
8. I am often lazy about jobs I don't want to do	-.240	.043	-.151	.143
9. I am a fairly cautious person	.041	.386	.104	.267
10. I always write with my left hand	-.353	.005	-.267	.028
11. I am conscientious about my studies	-.095	.252	-.201	.077
12. I often think that I am quite self-centred	-.214	.064	-.123	.192
13. I am a capable person	-.213	.065	-.219	.059
14. I often behave impulsively	-.281	.022	-.253	.035
15. I have blue eyes	-.309	.013	-.211	.067
16. I am rather an unconventional person	.006	.482	-.140	.161
17. I am generally optimistic	-.129	.182	-.239	.044
18. I am quite talkative when with friends	-.269	.027	-.233	.048
19. I think of myself as a moody person	-.236	.046	-.228	.052
20. I was born in Australia	-.017	.453	-.243	.042
21. I am quick to grasp a new idea	-.087	.270	-.026	.427
22. I consider myself to be rather a witty person	-.292	.018	-.269	.027
23. I was very rebellious when I was younger	-.041	.387	-.099	.242
24. I always cry when I see a sad film	-.285	.020	-.282	.022
25. I am fluent in half a dozen different languages	-.205	.072	-.181	.099
26. I definitely have a stubborn streak	-.200	.077	-.133	.174
27. I have had more than one bad experience through being too trusting of other people	-.120	.198	-.086	.272
28. I am a fairly serious person	.152	.141	.090	.262
29. I am a coward about pain	-.082	.282	-.240	.043
30. I think I see life in a fairly realistic way	-.249	.037	-.272	.026



#### 10.2.3.1.5 Item-by-Item Correlations

Although the item correlations were generally not large, 27/30 (present researcher) and 28/30 (Markus) of them were in the predicted direction, that is, higher Self-Construction or Schematism scores were associated with shorter reaction times (these proportions are significant using a Sign Test;  $x=3$ ,  $N=30$ ,  $p<.001$ ). Correlations are set out item-by-item in Table 10.2.2 on the previous page.  $N$  is 52 in every case.

#### 10.2.3.2 Correlations After Removal of Extreme Scores

To take account of at least one possible error, and at least one lapse of attention per subject, the longest and shortest reaction times were removed from each subject's distribution of scores. An adjusted overall average was calculated and correlated with Self-Construction, Schematism and Self-Monitoring. This procedure resulted in a change in the relationship with Self-Construction from  $-.287$  to  $-.293$  ( $p=.017$ ), with Schematism from  $-.288$  to  $-.296$  ( $p=.016$ ), and with Self-Monitoring from  $-.063$  to  $-.055$  (refer to Table 10.2.1 above).

#### 10.2.3.3 Social Desirability Responding

Frequencies of "true" and "false" responses to the 25 personal construction items were checked. Items for which the majority (defined as more than 40) of subjects all responded in one direction, true or false, were regarded as items attracting social desirability responding. These items were no. 2, "I am an ambitious person (45/52 "true")", no. 4, "I am generally considerate of others" (50/52 "true"), no. 11, "I am conscientious about my studies (47/52 "true")", no. 13, "I am a capable person" (50/52 "true"), no. 18, "I am quite talkative when with friends" (47/52 "true"), and no. 30, "I think I see life in a fairly realistic way" (46/52 "true"). Two further averages of reaction times were then calculated, one across social desirability items and the other across the remaining 19 (excluding factual) items.

##### 10.2.3.3.1 Correlation Between Self-Construction, Schematism and Social Desirability Set

There was a significant negative correlation between the social desirability average and Self-Construction score ( $r=-.332$ ,  $N=52$ ,  $p=.008$ ). This was also the case for Schematism score ( $r=-.370$ ,  $N=52$ ,  $p=.003$ ) (refer to Table 10.2.1 above). It should be noted, however, that this correlation is confounded with that for all "true" items (see below).

##### 10.2.3.3.1.1 Relationship With Self-Monitoring

There was a small negative relationship ( $-.147$ ) between Self-Monitoring and time taken to respond to the social desirability set of items.

### 10.2.3.3.2 Correlation Between Self-Construction, Schematism and Non-Social Desirability Items

The correlations of the non-social desirability items with Self-Construction ( $r=-.250$ ,  $N=52$ ,  $p=.037$ ) and Schematism ( $r=-.248$ ,  $N=52$ ,  $p=.038$ ) were also significant and negative although not of a large order.

#### 10.2.3.3.2.1 Relationship With Self-Monitoring

The relationship between Self-Monitoring and all items excluding the "factual" and social desirability sets was negligible ( $r=-.039$ ).

### 10.2.3.4 Comparison of Average Time To Decide "True" or "False"

On the average each subject responded "true" 8.38 times ( $s.d.=2.134$ ) and "false" 16.62 times ( $s.d.=2.134$ ) (this difference is significant,  $t=13.9$ ,  $df=51$ ,  $p=.0001$ ). The average time taken to decide "false" was significantly longer than that taken to decide "true". This difference was of the order of 300 milliseconds, the "true" mean being 2.523 msecs. ( $s.d.=.892$ ) and the "false" mean 2.837 msecs. ( $s.d.=.984$ ) ( $t=4.11$ ,  $df=51$ ,  $p=.0001$ ).

This result is generally consistent with Markus' (e.g., 1977) findings in domains of the self and with some of the property comparison findings in relation to semantic store (e.g., Collins and Quillian, 1969), although the latter result in consistently shorter latencies. It seems that consideration of the properties of "myself" takes longer than does consideration of the properties of birds, fishes and other objects in the natural world.

### 10.2.3.5 Comparison of Average Reaction Times to Various Items and Item Categories

#### 10.2.3.5.1 Comparison of Factual and Personal Construction Items

As might be anticipated it took a significantly shorter time to decide whether a factual item as compared to a personal construction item was true or false ( $t=9.735$ ,  $df=51$ ,  $p=.0001$ ). Table 10.2.3 shows the comparative means.

**Table 10.2.3:** Means and standard deviations of factual items, personal construction items, social desirability items, and non-social desirability items.

Type of Item	Mean R.T. (secs.)	s.d.
Factual	1.745	0.381
Personal Construction	2.818	0.999
Social Desirability	2.207	0.653
Non-Social Desirability	2.998	1.176

#### 10.2.3.5.2 Comparison of Social Desirability Items and Non-Social Desirability Items

It took less time to decide upon the socially desirable items than upon other personal construction items, although as has been implied above this may be largely accounted for by the fact that all social desirability items were in the "true" direction ( $t=6.41$ ,  $df=51$ ,  $p=.0001$ ) (refer to Table 10.2.3).

**Table 10.2.4:** Means and standard deviations of reaction times, item by item, showing reaction time rank.

Item	Mean R.T. (in secs.)	s.d.	Rank (of mean)
1. I have a variety of different hobbies	2.663	1.887	18
2. I am an ambitious person	1.804	.891	4
3. I never persist at a puzzle unless I'm pretty sure I'll be able to solve it	5.340	1.865	30
4. I am generally considerate of others	2.102	.707	7
5. I am enrolled in Psychology I	1.788	.563	3
6. I tend to be absent-minded	2.863	.345	23
7. I am an assertive person	2.359	1.215	15
8. I am often lazy about jobs I don't want to do	2.964	1.770	24
9. I am a fairly cautious person	2.641	1.493	17
10. I always write with my left hand	2.097	.615	6
11. I am conscientious about my studies	2.300	.752	11
12. I often think that I am quite self-centred	3.678	2.178	27
13. I am a capable person	1.845	1.026	5
14. I often behave impulsively	2.855	3.318	21
15. I have blue eyes	1.393	.370	2
16. I am rather an unconventional person	3.745	2.568	28
17. I am generally optimistic	2.198	1.193	10
18. I am quite talkative when with friends	2.103	.886	8
19. I think of myself as a moody person	2.316	.943	13
20. I was born in Australia	1.294	.317	1
21. I am quick to grasp a new idea	2.683	2.334	19
22. I consider myself to be rather a witty person	2.860	1.786	22
23. I was very rebellious when I was younger	2.486	1.308	16
24. I always cry when I see a sad film	2.277	1.033	14
25. I am fluent in half a dozen different languages	2.151	.726	9
26. I definitely have a stubborn streak	2.743	1.655	20
27. I have had more than one bad experience through being too trusting of other people	4.994	2.490	29
28. I am a fairly serious person	2.314	1.082	12
29. I am a coward about pain	2.990	2.126	25
30. I think I see life in a fairly realistic way	3.086	1.437	26

#### 10.2.3.5.3 Item-by-Item Means

An average reaction time for each item was calculated, and these times were ranked. Table 10.2.4 above shows the results of this analysis. The factual items headed the ranking, with some other positions being noteworthy. For example, "I never persist at a puzzle unless I am pretty sure I'll be able to solve it" takes the longest time; this item has been used for subject selection in a previous study of this project. It should be noted of course that there was no control for length of item, and this was one of the longer ones. When the item receiving rank 29 is also considered (item no. 27, "I have had more than one bad experience through being too trusting of other people"), it suggests that control for length would be desirable in a future study.

### 10.2.3.6 Correlations With Experimental Variables (Person Perception Study)

Pearson r correlation coefficients were calculated between average reaction times and some of the variables from Experiment 4, specifically number of judgments made in the third phase of the study, and confidence in those judgments.

#### 10.2.3.6.1 Correlations With Number of Judgments Made

As Table 10.2.5 shows, there were significant correlations between average reaction times and number of judgments made in each of the judgment categories, artistic talent, intelligence and temperament.

**Table 10.2.5: Correlations between reaction times to subcategories of items in Experiment 5 and number of judgments made in the artistic talent, intelligence and temperament categories in Experiment 4.**

Item Category	Number of Judgments Made		
	Artistic	Intelligence	Temperament
Personal Construction	-.433**	-.472***	-.368*
Factual	-.522***	-.350*	-.480***
Overall Average	-.449***	-.474***	-.384*

\* = $p < .05$

\*\* = $p < .001$

\*\*\*= $p < .0001$

These relationships were all in the direction that shorter reaction times were significantly associated with an increased number of judgments being made.

#### 10.2.3.6.2 Confidence in Judgments Made

Despite the impressive correlations between reaction times and number of judgments made, those between reaction times and confidence in judgments were negligible, ranging between -.152 and .034.

#### 10.2.3.7 Factor Analysis of Items

In order to determine whether a variety of domains had been sampled across the items, a principal components factor analysis was carried out on the responses to the items (true or false). From the 30 items 11 factors were extracted, accounting for 72.5 percent of the variance (it should be noted that the correlations on which this analysis is based result from a scale with only two points). The factor correlation matrix after oblique rotation showed negligible correlations between factors. The final statistics after varimax rotation are shown in Table 10.2.6. Once again this result can be taken as some evidence that a range of self-domains has been sampled.

**Table 10.2.6:** Final statistics after factor analysis, followed by varimax rotation, of responses to items.

Factor	Eigenvalue	% of variance	Cum. %
1	3.25	11.2	11.2
2	2.93	10.1	21.3
3	2.18	7.5	28.8
4	2.03	7.0	35.8
5	1.83	6.3	42.1
6	1.75	6.0	48.1
7	1.68	5.8	53.9
8	1.58	5.4	59.4
9	1.47	5.1	64.4
10	1.21	4.2	68.6
11	1.13	3.9	72.5

#### **10.2.4 Discussion**

Overall the results of this study can be considered to have confirmed the major prediction, that relating to Self-Construction (Schematism) and reaction time to make decisions about self-related items. Thus there was a relationship between the number of items on which subjects have a construct or schema and their behaviour. That there was not also a relationship with Self-Monitoring in this study or in Experiment 4 suggests that something other than a self-presentational aspect of social behaviour is being measured by the questionnaire technique. This conclusion is strengthened when considered in conjunction with findings in two unrelated areas on the relationships between Self-Construction and behaviour (presented in the reports of Experiments 3 and 4).

Some kind of cognitive style variable is a likely candidate for what is being measured in these studies. Whether such a variable underlies some of the work on schemas presented by Markus (e.g., 1977) is unclear. For Markus a schema, which is generally accessed by two or three trait terms, is conceived of as a somewhat more extended structure than is the basic unit used here, a specific construct. (An exception to her usual procedure can be found in the work on "body weight schemas" (Markus, Hamill and Sentis, 1987) in which the self-rating criteria were applied to the descriptor "overweight" only.) For this reason the terms "Self-Construction" and "Schematism" have been adopted. It should be noted nevertheless that Schematism, strictly speaking, is also a measure which only reflects the number of constructs (as the term is used here) rated, and does not necessarily reflect the number of underlying schemas in Markus' terms. In this case a "schema" is said to exist if the respondent rates her/himself as extreme on the variable while at the same time rating it as an important variable, but each variable is a single construct. However, the failure, in three studies, to find any point of divergence between the two measures in their association with certain behavioural measures requires some explanation.

Markus suggests that schema-relevant information should be processed more easily, any meaning extracted from a particular perceptual or behavioural event should depend on the current schema, and memory should be best for, and biased towards, schema-relevant information. The general definition of self-schemas used by Markus and her associates was as follows : "(they) are assumed to be summaries and constructions of past behavior that enable individuals to understand their own social experience and to organize a wide range of information about themselves" (Markus et al, 1982, p. 38). We use them to "categorize, explain and evaluate our behavior in various focal domains" (Markus et al, 1982, p. 38). There is nothing in the definition which implies that a self-schema must be reflected in the conjunction of two or more relevant trait terms. On the contrary, statements like "I have a variety of different hobbies" or "I usually remain patient even when I make mistakes at a task", which have here been termed "constructs" are as valid as "summaries and constructions of past behavior" as are trait terms like "honest" or "independent". Given the range of likely contents Markus allows for schemas - from images to specific incidents to traits - there seems to be no particular reason to restrict oneself to the use of trait terms, either singly or in clusters, to represent and/or access specific domains of the self.

Kelly (1955) used the repertory grid technique purportedly to elicit the main "constructs", generally dimensional, along which perceivers evaluated their social world. Later extensions of the technique (e.g., Bannister and Fransella, 1971) imposed on it the necessity that these constructs be dimensional. However, Higgins and King (1981) use the term "construct" to refer to "coherent information about some entity typically derived from specific instances or occurrences" (p. 71). They distinguish two major types of construct, the first being categories, that is, information about a class of objects, events or properties. The second is specifically relevant in the context of the present discussion; "proper constructs", or information about a specific, individual object or event.

At another point, however, these authors casually identify constructs with schemas, thereby making the issue even more problematic. Thus they argue that the proper construct "Johnny Carson", for example, "involves clusters of co-occurring behaviors, skills, appearance, and background" (ibid., p. 72). But some proper constructs "(e.g., an individual's voice quality) are unstructured because they involve, at least phenomenologically, a single attribute" (ibid., p. 72).

Schlenker (1980) uses the term "self-construct" exactly as others (notably Markus) would use "self-schema". For example, according to this author "self-constructs organize and guide the ways people process self-related information" (ibid., p. 51).

When Higgins discusses the effects of "construct accessibility", he is referring to traits. In one study, for example, exposure to the trait construct "reckless" increased the likelihood that a description of a behaviour would be characterized in terms of a closely-related construct such as "rash" or "crazy" (Higgins, Rholes and Jones, 1977). Despite the

conceptual and terminological confusion apparent in the literature it might be useful to consider that "schemata" consist of a variety of "constructs" at different "levels".

Considering Markus' technique for identifying a "schematic", then, in these terms she could be regarded as using the presence of constructs to indicate the existence of schemas, and this is not different from the procedure adopted in the work described here. If this argument has any validity, then it is not surprising that the "construct" items used in these studies, when used to select "schematic/constructual" respondents according to Markus' extremeness and importance criteria, should behave similarly to a "self-description" criterion applied to those same items, and used to select those same subgroups.

An additional point might be made about Markus' use of traits to indicate the presence of schemas. In her diagrammatic representation of self-schemas and the self-concept (Markus et al, 1982, p. 41) one example of a feminine schema "contains" "soft-spoken", "gentle", and "tender". When she operationalizes a schema she usually uses ratings on a combination of trait terms. Generally these refer to stereotypic or socially-shared notions of the concept in question, for example "tolerant", "conforming", and "obliging" for dependence, and "independent", "individualistic", and "assertive" for independence (Markus, 1977). Similarly, in the gender work (Markus et al, 1982) individuals were identified as schematic who explicitly held strong stereotypically masculine or feminine self-conceptions ("athletic", "competitive", "dominant" versus "co-operative", "cheerful", "gentle"). It is not inconceivable that being "independent" might have quite a personal meaning to an individual, referring only to financial independence, for example. Thus the individual might have a firm belief that s/he is "independent" while also valuing the fact that s/he is "tolerant", "conforming", and "obliging". In other cases Markus might be eliciting something closer to a social rather than a personal construction, that is, the interconnections between semantic groupings might be exhibited if a stereotype is well-learned, even when it is not entirely personally applicable. Trait terms can themselves act as "prototypes" (Cantor and Mischel, 1977), and a methodology that uses them as the only access to schemas might be considered impoverished.

In relation to the results of this study, it should be noted that in no case were the correlations large. Nevertheless, it does seem that the consistency of the findings across three studies cannot be ignored. That three separate and quite different tasks should produce such consistent relationships with a variable which is not predicted to exist on theoretical grounds is provocative. Even if the observations about techniques for identifying "schematics" are shown to be invalid, at the very least these results indicate that foreclosure on the "cognitive style" issue in relation to self-schemas would be inappropriate.

Some consideration must be given to the nature of such a cognitive style variable, and the implications of its existence, should further empirical work confirm what has been presented here. At the simplest level, it appears to be a tendency, perhaps a willingness, to think about and know about "myself" and my personal attributes. More than this, however,

it may be a strategy of handling information about "myself" so that it is readily available. If so, this is a difficulty for Markus' self-schema model.

If there is a cognitive style variable on which individuals differ it could also be that Markus' results are to some extent artifactual. That is, she envisages an individual's self-model as consisting of a number of different schemas each of which guides and organizes the processing of information in a given domain. Implicit in that view is the notion that it is simply a matter of discovering on which variables given individuals are schematic to have some insight into their self-models, and consequentially, into their likely manner of interacting with aspects of their environment. Were it the case, however, that individuals differ in the extent to which they build self-models at all, and that some individuals only build the most rudimentary self-models, some mediating process other than that envisaged by schema theorists may be operating when they are involved in self-environment interactions.

Such a conclusion is not inconsistent with the model of personality recently explicated by Cantor and Kihlstrom (1987). In this model in which "social intelligence" is the unifying construct, the "family of selves" of each individual is envisaged to play a key role in enabling "*social* tasks (to) become the property of *persons*" (ibid., p. 1). Despite an implication that individuals all rely on their selves to enable them to function in the social environment, it is conceivable that individual variation exists in the extent, and nature, of cognitive work undertaken in relation to those selves, and in the efficiency with which self-knowledge is applied in relation to ongoing environmental demands. Correlational studies between the putative cognitive style variable and various expressions of "social intelligence" might indicate the extent to which self-construction apparently mediates behaviour in the social world.

In view of the large number of comparisons made in sections of this thesis some of the results of borderline significance should perhaps be viewed with caution.



## CHAPTER 11

This chapter is the final one in which empirical work is described. To the extent that the studies covered in the chapter did not contribute to any of the experimental work reported previously, they could stand independently as a study sequence. However, since an attempt to develop a classification system for praising locutions is described, it could also be regarded as a fundamental contribution to the issues originally raised for consideration. In addition, in the final argument presented in Chapter 12, important reference is made to the results reported below.

In view of the analysis of Kanouse et al (1981), and the accumulating studies from different areas within psychology about the varieties of praise, it seemed that a study to investigate the possibility of creating a classification system for such locutions was needed, as was any evidence relating to the question of the differential effects of varieties of praise on children. Since praise is probably a fairly common mechanism by which parents attempt to control the behaviour of children, these issues were examined within the context of the parent-child relationship. In this context it is interesting to note that Amabile, in discussing rewards for creativity, suggests that it is possible to "develop a generalized (praising) style that accents the internal dimension" (Kohn, 1987, p. 56). Having spent a number of years investigating creativity, Amabile is now putting this belief into practice with her own young daughter. In responding to creative efforts she focuses on specific dimensions of the product or aspects of the process (for example, "Gee, how neat!", or "You tried something very different from what you did before").

The work described in this chapter is presented in four parts. Initially a classification of praising locutions was undertaken and this is outlined in Part 1. The study described in Part 2 developed from that preliminary work. A closed-format questionnaire was devised so that the relative likelihood of use of the varieties of praise, at least by parents, could be determined. Thus Part 2 was a study of the likelihood of use of the various locutions as estimated by parents and their children, and the relationship between those likelihoods and childrens' self-concepts. In Part 3 a follow-up study in which parents' attitudes were measured is described. In Part 4 a praise preference study is described. A further questionnaire was developed and used to assess children's preferences for the different praising locutions identified in the earlier studies.

**PART 1**  
**DEVELOPMENT OF A PRAISE CLASSIFICATION SYSTEM AND A QUESTIONNAIRE**

**11.1.1 Aim of study:** The aim of this study was to develop a preliminary classification system for the variety of praising locutions.

**11.1.2 Respondents and Procedure:** Since it is likely that there are different patterns of use of praise in a parent-child context compared to a work or school context for example, it was decided to limit this preliminary work to an investigation of parental praise types. The open-format questionnaire was distributed to students enrolled at the South Australian Institute of Technology in the Associate Diploma or Degree in Social Work. It was stipulated that respondents must be parents or foster parents, and that they should complete one questionnaire per child.

**11.1.3 The Preliminary Questionnaire:** The open-format questionnaire appears as Appendix 7.1. The following questions were included -

- (1) When was the last time you praised your child?
- (2) What had your child done which resulted in your praising her/him?
- (3) What were the exact words of praise used?
- (4) What sorts of things do you generally say in praise of this child?

**11.1.4 Results**

Fifty-five questionnaires were returned by 47 parents. In three cases the respondent returned between two and four questionnaires. In all other cases a single questionnaire was returned. The variable "within families/between families" was not examined, but it was noted that an investigation of the differences within families as compared to between families might prove interesting. It should also be noted, in relation to the measures of association referred to below, that a small number of non-independent cases were included in the data.

#### 11.1.4.1 Content-Analysis of Questionnaires

Content-analysis categories were devised for -

- (1) The behaviour which resulted in the child's being praised (see Appendix 7.2), and
- (2) The exact words of praise used; the same categories were used for the specific incident words and for those words generally used in praise of the child.

A colleague of the researcher also coded a sample (20%) of the questionnaires. 100% agreement was obtained between the two sets of codings for behaviour, and 98% between those for the words used. The majority of respondents had listed between one and five utterances for each of the specific and general cases; only the first five were content analyzed. Thus for each respondent a maximum of ten utterances were used in subsequent analyses.

A score was then assigned to each respondent for each content category (e.g., 0, 1, 2 etc. depending upon whether the category was not used, was used once, twice and so on) for the specific and general cases in turn.

Table 11.1.1 shows the content categories which were used to classify the free-response data. It should be noted that those praising locutions which are distinguished with an asterisk were not identified at this stage, but were added to the classification system after the research described in Part 2 was completed. The categories which were devised, and from each one of which an example was taken for the questionnaire used in the study described in Part 2, are set out in Table 11.1.1. The preliminary broad structure of the classification system is indicated by the capitalized headings, coded 10, 20, 30 and so on. For data coding purposes only the subcategories within this broader structure were used (e.g., 11, 21, 31 and so on). The letters "a", "b" to "s", in brackets after each coding number, indicate the position of this type of locution in praise questionnaires which were developed subsequently.

**Table 11.1.1: Content categories of parent praising locutions.**

Code	Parent Praising Locutions: Content Analysis
<b>1 0</b>	<b>Specific Praise Of Behaviour</b>
11	(a) Social reinforcement eg. "you did that well", "well done", and including any description of the behaviour eg. ".....that you didn't wake us last night".
12	(b) Expectation about future behaviour eg. "now you won't wet yourself", "now you'll study really hard".
<b>2 0</b>	<b>General Praise Of Child</b>
21	(c) A characteristic is attributed to the child as a result of the behaviour eg."you are clever", "you are helpful", "you are tidy".
22	(d) Attribution of motivation eg. "you must have wanted to work hard".
23	(e) Attribution of mood eg. "you must feel pleased with yourself".
24	(f) Attribution of a non-characteristic, global appreciation eg. "you are wonderful", "you are nice", "you are an excellent kid".
25	(g) Question about how child feels eg. "Does it feel good to have.....?"
26	(h) Labelling the behaviour without specifically labelling the child eg."that was a help", "that was clever".
27	(i) Attribution of ability eg. "I knew you could do it".
28*	(s) Attribution of behaviour eg. "you must have worked hard".
<b>3 0</b>	<b>Comments About Physical Characteristics</b>
31	(j) Comments about physical characteristics eg. "you are pretty", "you have a cute face".
<b>4 0</b>	<b>Telling Child S/he Is Good</b>
41	(k) Telling the child s/he (not the behaviour) is good eg. "you are a good boy", "good girl" (cf. "that was good" coded 11).
<b>5 0</b>	<b>Non-Praise</b>
51	(l) Thanks eg. "thank you for helping me" ("thank you" coded 51, "for helping me" coded 11).
<b>6 0</b>	<b>How Parent Feels About Behaviour</b>
61	(m) How parent feels about the behaviour eg. "I'm pleased that....." (coded 61, and the behaviour coded 11).
62	(n) Parent's exclamations of pleasure eg. "what a lovely surprise", "terrific".
<b>7 0</b>	<b>General Comments</b>
71+	(o) Extended general comments about the behaviour, sometimes including reference to a material reward eg. "now you can lick the beaters".
72	(p) Noticing that the behaviour has occurred eg. "Oh, you got your brother a drink", "you have tidied your room".
73*	(q) Indicating how the child will benefit from her/his own behaviour eg. "now you'll be able to find things in your room".
<b>8 0</b>	<b>Social Comparison</b>
81*#	(r) Comparing child's behaviour with that of siblings, classmates, self,others eg. "I couldn't play as well as that".

**Notes:** + Subsequent empirical work, described below, suggested that this category should have been divided into two separate ones, (1) reference to material reward, and (2) general comments in the sense of simply extending the conversation with the child.

# It was later judged that had this category been separated into two, the classification system would have been more complete. The two divisions are (1) positive comparison of the behaviour with that of others, and (2) positive comparison of the behaviour with the praised individual's own previous behaviour (see Eder, 1983, for example).

#### 11.1.4.2 Praise for Behaviours

Table 11.1.2 shows the behaviours which were mentioned and the rank-ordered percentages of respondents who praised those behaviours. The general categories of behaviour represented here could be classified as "helping around the home", "self-care and feeding", "skills improvement/mastery", "interpersonal behaviour" and "school".

**Table 11.1.2: Behaviours for which children receive praise and percentages of respondents mentioning them.**

Behaviour	Percent of respondents
Helping parents with household chores	14.5
Doing own chores	14.5
Improving/mastering a skill	12.7
Helping parent personally	9.1
Toileting appropriately	9.1
Dressing appropriately	9.1
Feeding appropriately	5.5
Doing well at school	5.5
Appropriate interpersonal behaviour	5.5
Completing a school assignment	3.6
Appropriate mood	1.8
Appropriate communication	1.8
Ready for school on time	1.8
Missing	3.7
Total	100.0

#### 11.1.4.3 Varieties of Praise

Table 11.1.3 shows the means and standard deviations of the scores for the different praising locutions reported by respondents. According to these figures, specific praise is frequently used, as are "good girl/boy", parents referring to their own feelings about the behaviour, general praise, and non-praise, or thanks.

**Table 11.1.3:** Means and standard deviations of the scores for the use of different praising locutions, specific incident compared to general score.

Type of Praise	Specific Incident Score		General Score	
	Mean	s.d.	Mean	s.d.
Specific praise	.509	.635	.473	.790
Expectation of future behr.	.055	.229	.091	.348
Attribution of characteristic	.164	.420	.291	.533
Attribution of motivation	.036	.189	.036	.189
Attribution of mood	.145	.488	.000	.000
Global praise	.018	.135	.091	.348
Question about feelings	.036	.189	.018	.135
Labelling the behaviour	.000	.000	.109	.315
Attribution of ability	.000	.000	.036	.270
Physical characteristic	.109	.416	.109	.315
Good girl/boy	.364	.557	.345	.517
Non-praise (thanks)	.255	.440	.218	.417
Parent's feelings	.473	.573	.309	.505
Exclamations	.073	.262	.200	.621
General comments	.400	.564	.164	.501
Noticing behaviour	.000	.000	.018	.135

#### 11.1.4.4 Further Analysis of Preliminary Data

The data were crosstabulated and a variety of analyses were undertaken in an effort to find any patterns in them. Significant findings emerging from these analyses are reported in Appendix 7.3. Only a few comments will be made here, since the main aim of this preliminary work was to produce a praise classification system, and, if possible, to develop a praise questionnaire.

If the specific incident words are assumed to be representative of the parent's praising utterances to this child, then the means for the specific incident should be about the same as they are for the utterances generally used. There is no appropriate statistical test which could be used to assess this assumption. However, a correlational analysis between the specific incident utterances and those generally used revealed some interesting relationships. It should be noted, however, that these results can only be used as a guide to possible

relationships. Firstly, Pearson  $r$  is not the most appropriate index of correlation given the low range of the scores, and secondly, when all variables are correlated with every other variable some significant relationships will occur on a chance basis. Further, it may be in any case that parents considered their own responses to the question about the specific incident, and made an inference about their general patterns of praise in answering that question.

Nevertheless, there was a significant relationship between the reported use of attributional praise on the specific occasion and attributional praise among the utterances generally used ( $r=.445$ ,  $p=.0001$ ). Attribution of motivation also correlated between the two sets of utterances ( $r=.481$ ,  $p=.0001$ ), as did the use of "good girl/boy" ( $r=.298$ ,  $p=.014$ ). Parents who used general comments on the specific occasion also tended to report using them generally when praising the child ( $r=.419$ ,  $p=.001$ ).

It is possible, then, that there are certain locutions that parents will habitually self-report as utterances used in praise of their child(ren). Thus, for example, it may be that some parents will tend to use attributional praise, or will tend to thank the child and see that as praise. Others may tend to make extended general comments. The analyses reported in the Appendix also raised some possibilities about parents' praising styles. For example, the behaviours praised apparently changed with age, as did the locutions used. There was some evidence, too, that parents choose their praising locutions relative to the specific behaviour being praised. The question of whether these impressions were accurate partly underlay the parent-child study reported in Part 2 of this chapter.

#### 11.1.4.5 Further Preliminary Work: Development of a Questionnaire

A further preliminary study was undertaken in preparation for the parent-child praise study. On the basis of the initial data it was decided to concentrate on two age groups, 8-year olds and 12-year olds, and to compare the locutions used by parents for these two groups. Thus a further preliminary questionnaire (see Appendix 7.4) was distributed to the same group of respondents. It was designed to ascertain what sorts of behaviours of children of these ages tend to be praised by parents. The plan was to select for inclusion in the final closed-format questionnaire three or four examples of behaviours which are apparently praised as frequently for 8-year olds as for 12-year olds.

Respondents were simply requested to write out just what behaviours they praised for children at these ages. Twelve forms for 8-year olds were returned, and sixteen for 12-year olds. Interestingly, the content-analysis categories used for behaviours in the initial preliminary study had to be expanded to accommodate these data. Appendix 7.2 shows the percentage of times each behaviour was mentioned compared across the two age groups. The most complete version of a behaviour coding system developed for use in this research is incidentally shown. Asterisks are used to indicate the behaviour categories not occurring previously. It will be noted that many of the so-called "behaviours" were actually

characteristics, such as independence and honesty, which parents believed that they praised. All characteristics mentioned are listed in Table A7.1 in Appendix 7.3.

After ranking the behaviours for each age group it was decided to select one example from each superordinate category with the exception of "self-care and feeding" since this was mentioned infrequently. Thus the behaviours selected for use in the questionnaire were from the categories "helping around the home", "skills improvement/mastery", "interpersonal behaviour" and "school".

#### 11.1.4.6 The Parent Praise Questionnaire

A questionnaire was developed which incorporated four behaviours, or situations, and sixteen different locutionary examples used by parents as praise. The locutions were empirically determined on the basis of the preliminary study reported above.

The situations were determined on the basis of parents' free-response data to be frequently recurring ones. Specifically, the four behaviours, or situations, were the child tidying her/his own room unasked (situation 1), the child bringing home a good school report (situation 2), the child practising and/or improving at some skilled activity (situation 3), and the child saving to buy a special gift for a family member or friend (situation 4). For each locution, a 7-point scale was included on which respondents could rate their likelihood of using this locution given the situation. This questionnaire appears in Appendix 7.5. Information about age of child, native language, and frequency of contact was also requested, since it was judged that these variables might relate to the ratings. The design of the study, and its outcomes, are reported in Part 2.



## PART 2

### PARENT-CHILD PRAISE STUDY

**11.2.1 Aims of study:** There were several aims to the study. It was hoped that at least partial answers could be provided to these questions -

- (1) Within each of two age groups (about 8 years and about 12 years), is there a difference in locutions used for different situations?
- (2) Is there a difference in type of praising locutions used at the two age levels?
- (3) Do praising locutions affect, or are they reflected in, children's self-concepts?
- (4) Do children agree with their parents' self-reports of praising locutions used?

**11.2.2 Design of Study:** The parent questionnaire has already been discussed. In addition a "child-version" was developed which included only two of the four situations comprising the parent version. The two situations used were "tidying own room" and "saving to buy a gift". As were their parents, children at the older age level were asked to assess likelihoods both of the behaviour occurring and of the different locutions being used. The questionnaire completed by children can be seen in Appendix 7.6.

It was also decided to have children at the younger age level complete the Piers-Harris Children's Self-Concept Scale (Piers, 1977, see below). Although this was not regarded as a very close approximation to a method for determining any relationships between praise of a specific characteristic and self-concept in that domain of the self, the question of whether different praising locutions had any measurable relationship to child praisees' overall self-concepts was considered to be an interesting and important one in its own right.

Thus, the overall design of the study was:

- (1) Parents of Year 3 (about 8 years of age) and Parents of Year 7 (about 12 years of age) children completed the Parent Praise Questionnaire.
- (2) Year 7 children completed the child-version of the questionnaire.
- (3) Year 3 children completed the Piers-Harris Children's Self-Concept Scale.

#### **11.2.3 The Piers-Harris Children's Self-Concept Scale**

The Piers-Harris Children's Self-Concept Scale was first published in 1969. According to Wylie (1979) it has gone through several revisions. It is a self-report instrument consisting of 80 items on the subject "The Way I Feel About Myself". The development of the scale and its initially established reliability and validity is reported by Piers (1969). The test appears to have high scores for internal consistency (.87 to .90) and is apparently reliable, having test-retest coefficients of around .71 to .72.

Items are scored according to a key in the direction of high (adequate) self-concept.

The structure of the scale was investigated using factor-analysis (results for Grade 6 (American) students). A principal-components factor analysis was done and 10 factors were

extracted. After a varimax rotation items with loadings of above .3 on each factor were inspected and the factor named. The 10 factors accounted for 42 percent of the variance and six "were large enough to be interpretable" (Piers, 1969, p.19). These were:

I Behaviour

II Intellectual and School Status

III Physical Appearance and Attributes

IV Anxiety

V Popularity

VI Happiness and Satisfaction.

These factors have been confirmed in subsequent studies (Piers, 1977). Scores on each factor can be derived, as can a total self-concept score. A new scoring key using Revised Cluster Scores (Piers, 1977) was used in the present study.

No evidence for a general factor has been found, according to Wylie (1979), although she believes that the authors intended their scale to reflect a child's "general self-concept".

Since 1969 the scale has been "used in hundreds of school systems and clinics, and as a major research instrument in many theses and dissertations" (Piers, 1977, p. 1). Piers reviews many of these studies in a 1976 Research Monograph (1977). Included are reports of reliability studies, with coefficients ranging from .62 to .96 in over a dozen tested groups.

Four separate studies reporting correlations with other self-concept scales indicate significant relationships.

Other correlates of self-concept are also reported. For example, cognitive style correlates significantly with self-concept: analytic cognitive style and high I.Q. subjects had significantly more positive self-concepts than did those with global style-high I.Q. or global style-low I.Q.

In one study (Shoshani, 1976) the researcher examined relationships among social maturity, self-concept and occupational knowledge and interests of upper elementary school children. According to Shoshani while the Vineland Social Maturity Scale was a fairly good predictor of self-concept and occupational knowledge, the most consistent predictor was verbal I.Q.

With regard to social desirability responding, the progenitors of the scale (Piers, 1969) believe that young children have a tendency to respond in a socially desirable direction, but that this reflects their confusion between how they are and how they should be rather than being a deliberate attempt to "look good". They conclude that while it cannot always be assumed that high scores reflect truly positive self-attitudes, it can probably be assumed that low scores reflect truly negative self-attitudes (since, they believe, children are not subtle enough to attempt to gain attention by "faking bad").

However, Wylie (1979) suggests that with an 80-item scale which has an equal number of positively- and negatively-keyed statements, random responding would result in a score of about 40. That is, there would be 40 coincidences between the subject's choice of "yes" or "no" and judges' ratings of "yes" or "no" as indicative of desirable reactions. According to norms given in Piers (1969), she continues, 20 percent of subjects attain scores this low or lower - thus, she argues, there is a strong possibility that "unreliable responding and poor self-regard are confounded to some unknown extent in many of the low individual scores" (Wylie, 1979, p. 175).

She suggests that a study of test-retest item stability among subjects with high, medium and low scores would be helpful. In addition, she suggests that some research on ideal-self responses and on self-ideal discrepancies would be valuable, since responses are scored against judges' conceptions of the desirable rather than against subjects' own conceptions.

#### **11.2.4 Procedure**

##### **11.2.4.1 Sampling**

In order to obtain a fairly uniform sample, one that was representative of some specifiable population, it was decided to sample from "private, co-educational schools in the Adelaide metropolitan area". Although socioeconomic status is known to be an important variable in parent-child communication patterns (e.g., Bee, Van Egeren, Streissguth, Nyman and Leckie, 1969), it was thought better, in an essentially exploratory study, to add in as few variables as possible.

As it happened, it was not possible to restrict the sample to this group, since not all schools falling in this category were prepared to participate. The final sample, then, came from two private co-educational schools, two private girls' schools (Year 7 only from one of these), and one public school (two respondents each in Years 3 and 7; area chosen was of a high socioeconomic status).

After discussion with school principals a strategy was devised whereby children each took home a package addressed "To Parents": this contained an explanatory letter including a slip asking permission that the child participate, the questionnaire for parents, and two stamped self-addressed envelopes, one for the slip, to be returned immediately, and the other for the questionnaire, to be returned by a specified date.

Reminder slips were also subsequently sent home with children from two schools, but this technique was abandoned when it became obvious that it had no noticeable effect on the number of returns.

On the average, the return rate from each school was 30%.

### **11.2.5 Results and Discussion**

Analyses appropriate to the four questions raised above were carried out. Some additional analyses were also done.

#### **11.2.5.1 Description of Sample**

There were a total of 94 parent respondents, but in a few cases the corresponding child data were missing due to absence from school on the day that the researcher did the testing.

Thirty (31.9%) of the children were in Year 3, and 64 (68.1%) were in Year 7. Of the Year 3 sample, 10 (33.33%) were male, and 20 (66.67%) were female. Of the Year 7 sample, 19 (29.69%) were male, and 45 (70.31%) were female.

The mean age of the younger group was 8.17 years (s.d.=.42) while that of the Year 7 children was 12.16 years (s.d.=.42).

It was decided that there were insufficient data from non-native speakers of English to warrant separate analyses for possible cultural differences. Only 4.26% of children in both groups combined spoke a native language other than English, while 7.45% of mothers and 12.09% of fathers did so.

#### **11.2.5.2 Main Comparison: Situations and Locations**

Two-way analyses of variance with repeated measures were carried out to determine whether there was a situation effect, a location effect and an interaction between situation and location for each age level separately. Tables 11.2.1, 11.2.2 and 11.2.3 show the results of the analyses for Year 3, and Tables 11.2.4, 11.2.5 and 11.2.6 show the results for Year 7. All tables show averaged tests of significance using sequential sums of squares.

**Table 11.2.1: Results of repeated measures analysis of variance, Year 3, Situation.**

Source of variation	SS	df	MS	F	p
Within cells	243.21	66	3.69		
Situation	33.82	3	11.27	3.06	.034

**Table 11.2.2: Results of repeated measures analysis of variance, Year 3, Location.**

Source of variation	SS	df	MS	F	p
Within cells	2266.39	330	6.87		
Location	1503.02	15	100.20	14.59	.01

**Table 11.2.3:** Results of repeated measures analysis of variance, Year 3, Situation by Locution.

Source of variation	SS	df	MS	F	p
Within cells	1532.68	990	1.55		
Situation X Locution	620.29	45	13.78	8.90	.01

**Table 11.2.4:** Results of repeated measures analysis of variance, Year 7, Situation.

Source of variation	SS	df	MS	F	p
Within cells	662.11	162	4.09		
Situation	76.95	3	25.65	6.28	.0001

**Table 11.2.5:** Results of repeated measures analysis of variance, Year 7, Locution.

Source of variation	SS	df	MS	F	p
Within cells	4217.43	810	5.21		
Locution	2573.63	15	171.58	32.95	.01

**Table 11.2.6:** Results of repeated measures analysis of variance, Year 7, Situation by Locution.

Source of variation	SS	df	MS	F	p
Within cells	4277.09	2430	1.76		
Situation X Locution	1171.85	45	26.04	14.79	.01

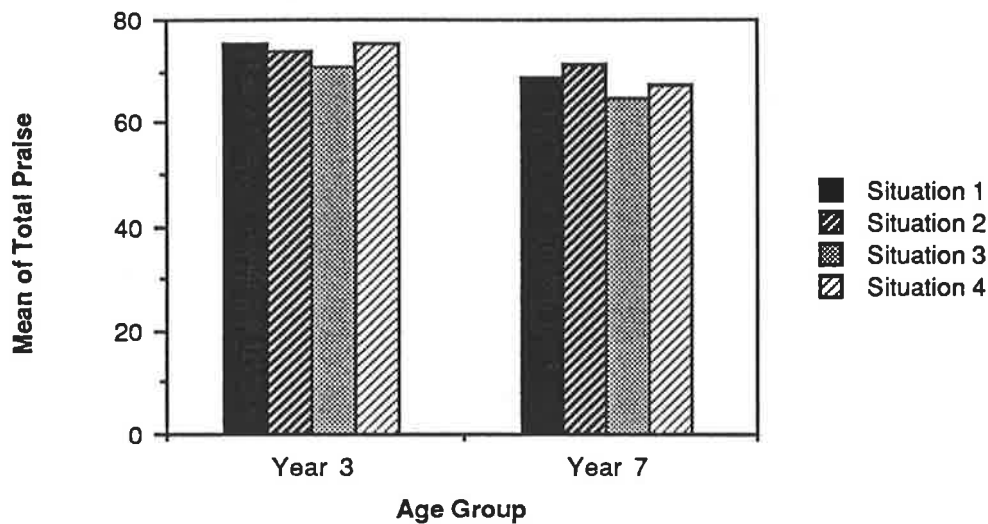
All results were significant for both age levels. That is, for children of both age groups parents were likely to vary their choice of praising locutions according to the situation or the behaviour being praised.

#### 11.2.5.2.1 Comparison of Means of Individual Praise Types and Total Praise Scores by Situation and Year

In this section analyses, tables and graphs are presented which compare means of praising locutions.

##### 11.2.5.2.1.1 Situation by Year

The total praise for each situation (summing the 16 likelihood ratings) for the two age levels was calculated as were the total praise scores. Figure 11.2.1 shows this information graphically. In every situation the older children apparently receive less praise than do the younger children.



**Figure 11.2.1:** Praise scores by situation and age level.

#### 11.2.5.2.1.2 Praising Locutionary Type by Year

A 4 X 16 X 2 analysis of variance with repeated measures on the first two factors (situation and locution) was calculated to determine whether there was any difference between the two groups of parents in their reported use of the different types of praise. Table 11.2.7.1 shows the results of this analysis in summary form, and Table 11.2.7.2 shows the means and standard deviations for each praising locutionary type summed across situations (the information is also presented graphically in Figure 11.2.2).

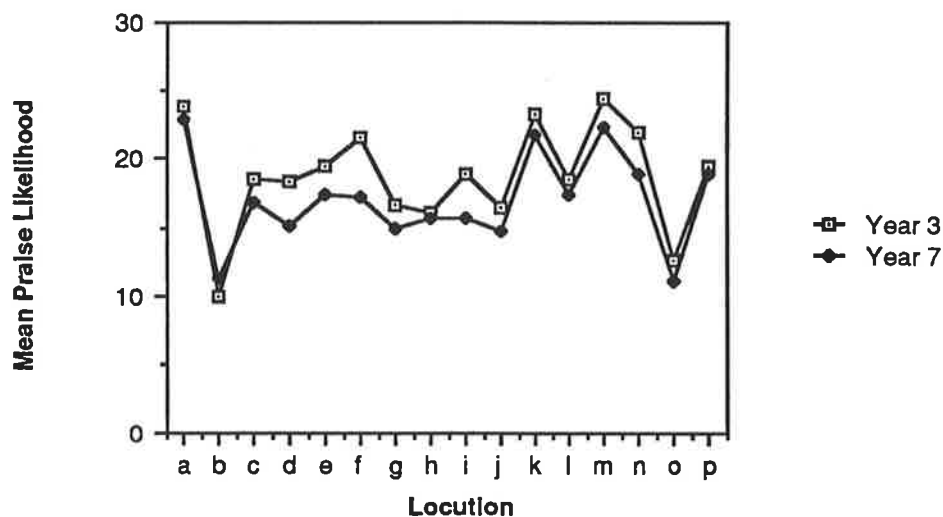
**Table 11.2.7.1:** Results of repeated measures analysis of variance comparing groups on their reported use of praise - summary table.

Source of variation	SS	df	MS	F	p
Group	202.74	1	202.74	4.05	.047
Situation	83.51	3	27.84	6.77	.0001
Locution	4144.06	15	276.27	49.31	.0001
Group X Situation	23.42	3	7.81	1.90	.130
Group X Locution	113.52	15	7.57	1.35	.164
Situation X Locution	1857.98	45	41.29	22.54	.0001
Group X Situation X Locution	93.44	45	2.08	1.13	.251

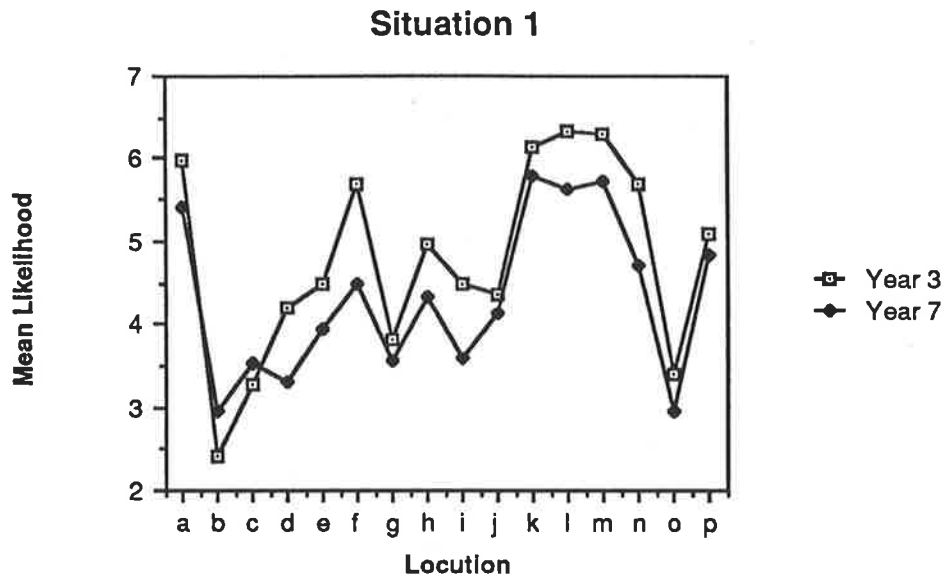
There was a significant difference between the groups, and as would be expected on the basis of the results reported in the previous section there were also significant situation and locution effects. There were no significant interactions with the group factor. It is clear from Table 11.2.7.2 that the difference between the groups is in the direction that the likelihood of children in the older group receiving every form of praise is less than it is for children in the younger group (Sign Test,  $N=16$ ,  $x=1$ ,  $p<.001$ ). There is one exception to this; as children grow older their parents are more likely to praise them by expressing an expectation about their future behaviour (locution b).

**Table 11.2.7.2:** Praise likelihood scores by locution type and age level.

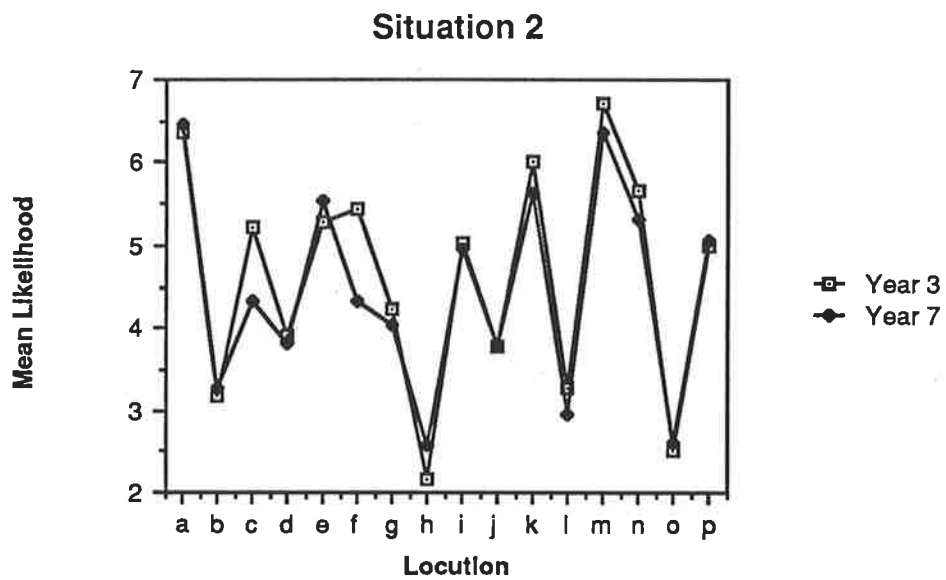
Age Group Locution	Year 3		Year 7	
	Mean	s.d.	Mean	s.d.
a Social reinforcement	23.86	4.71	22.89	3.54
b Expectation about behaviour	9.93	5.97	11.21	5.26
c Attribution of characteristic	18.61	5.08	16.77	4.20
d Attribution of motivation	18.32	5.57	15.18	5.69
e Attribution of mood	19.57	6.83	17.32	4.89
f Global appreciation	21.54	7.05	17.19	6.37
g Question about child's feelings	16.54	7.96	14.87	5.48
h Labelling behaviour	16.11	4.73	15.75	4.03
i Attribution of ability	18.86	6.47	15.74	5.67
j Comments about physical characteristics	16.46	9.52	14.74	7.66
k Telling child s/he is good	23.37	5.97	21.76	5.47
l Thanks	18.48	5.89	17.35	4.98
m Parent's feelings	24.44	3.32	22.34	4.45
n Parent's exclamations	21.89	7.23	18.85	6.33
o Extended general comments	12.61	7.15	11.00	6.46
p Noticing behaviour	19.54	7.22	18.88	6.63

**Figure 11.2.2:** Graph of praise likelihood scores by locution type and age level.**11.2.5.2.1.3 Praising Locutionary Type by Situation and by Year**

Figures 11.2.3.1 to 11.2.3.4 show the mean likelihoods of use of the different varieties of praise according to situation and age group. These graphs illustrate clearly that in every situation Year 7 children are less likely than are Year 3 children to receive every form of praise. At the same time there is a strong similarity in the reported relative use of the various locutions within the two age groups.

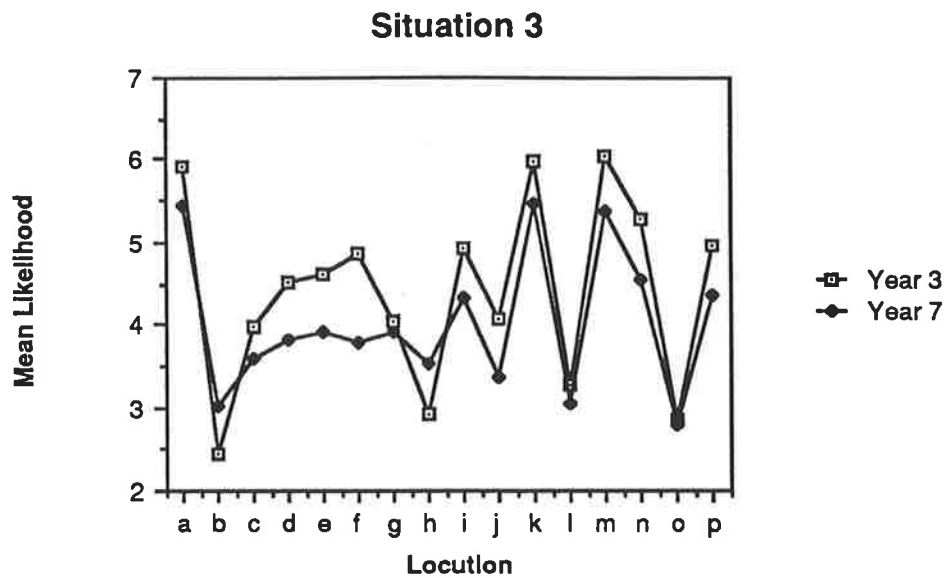


**Figure 11.2.3.1:** Praise locution type by year, situation 1, tidying own room.

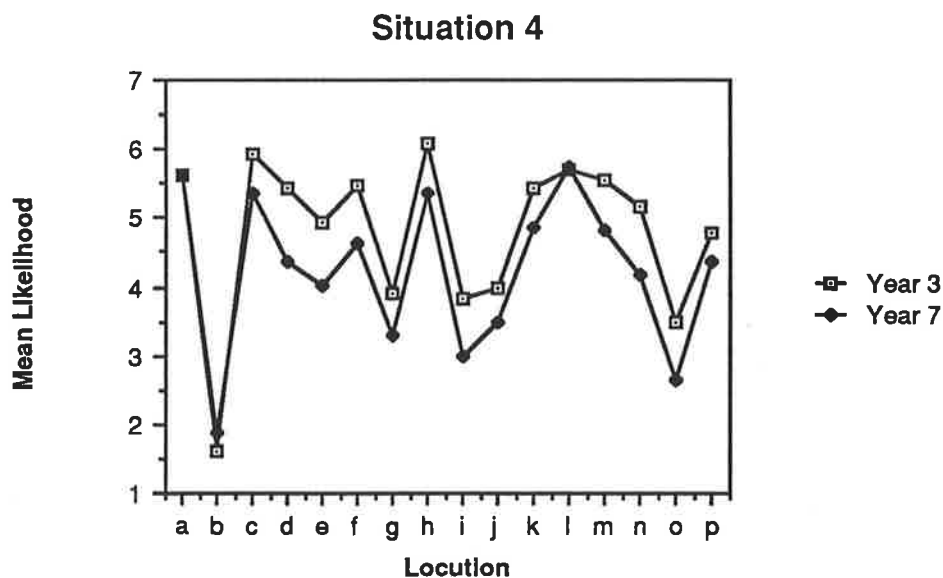


**Figure 11.2.3.2:** Praise locution type by year, situation 2, bringing home a good school report.





**Figure 11.2.3.3:** Praise locution type by year, situation 3, practising and/or improving at a skilled activity.



**Figure 11.2.3.4:** Praise locution type by year, situation 4, saving to buy a gift.

### 11.2.5.3 Correlational Analysis: Praising Locutions and Self-Concept Scores

#### 11.2.5.3.1 Correlational Analysis of Individual Praising Locutionary Type Scores

To determine whether there was a relationship between type of praise used and self-concept of the child, Pearson  $r$  correlations were calculated between each of the subscales, and the total score, of the Piers-Harris Children's Self-Concept Scale and the likelihood of use of each praising locution (the 16 locutions, a to p, summed across situations). These correlations are displayed in Table 11.2.8. As might have been expected, given the multiplicity of variables involved in parent-child interactions and the fact that the measures were independently obtained from parents and children, the correlations between the two scales were generally low.

**Table 11.2.8: Correlations between likelihood of praising locutions and Piers-Harris Children's Self-Concept subscales.**

Loc	Behr	School	Phys	Anxty	Popty	Happy	Total
a	.089	.067	-.012	-.017	-.005	-.141	-.081
b	-.278	-.037	-.077	-.147	-.128	-.174	-.219
c	.038	.175	.152	-.015	-.150	.104	.016
d	.118	.109	.279	.252	-.057	<u>.335</u>	.168
e	.095	.232	.246	.102	.019	.222	.163
f	.131	.248	.303	-.032	-.178	.211	.065
g	.092	.209	.141	.121	.061	.228	.093
h	-.123	.173	.190	-.016	-.017	.069	-.051
i	-.241	-.123	-.248	<u>-.358</u>	<u>-.321</u>	<u>-.441</u>	<b>-.457</b>
j	.057	-.021	-.166	.024	-.171	-.184	-.147
k	.160	-.056	.051	-.070	-.287	-.221	-.125
l	.199	.084	.199	.257	.121	.119	.161
m	.259	.210	.090	-.089	-.041	-.147	-.034
n	-.063	-.029	.057	-.237	.247	-.129	-.099
o	.119	.157	.218	-.026	.023	.055	.057
p	.021	.135	-.041	.067	-.051	.062	.003

Note: underlined correlation coefficients indicate  $p < .05$

**bold** correlation coefficients indicate  $p < .01$

However, there was a significant negative relationship between locution i, the attribution of ability retrospectively to the child (e.g., "I knew you could do it"), and the total self-concept score on the Piers-Harris Scale. Thus the more likely the parents were to attribute ability retrospectively to the child, the more inadequate the child's General self-concept (Total:  $r = -.46$ ,  $N = 27$ ,  $p = .008$ ). It might be argued that one significant correlation out of 16 could be ascribed to chance. However, it is worth noting that the correlations of this praise category with each of the six subscales of the Piers-Harris Scale were also negative, and three of them were significant at the .05 level (subscales Anxiety, Popularity, and Happiness and Satisfaction). This consistency tends to strengthen the finding.

If it should prove replicable, this finding has important implications. Firstly, it is consistent with the prediction that praise may affect the self-concept of the recipient of that praise. Secondly, that the correlation is negative suggests that some varieties of "praise" may have effects quite different from those intended.

It is perhaps worth noting too that, although none of the relationships is significant, another type of praise, that of expressing an expectation about the child's future behaviour,

showed a similar pattern of negative correlations. This observation is interesting in view of an apparent conceptual similarity between the two categories of "praise". The outcome of using both locutionary types in a situation where a child has just pleased the parent with good behaviour is actually to direct attention away from that good behaviour on to the thoughts or demands of the parent.

Some other relationships are also worth noting. Correlations with d, "attributing motivation to the child", are all positive (except Popularity self-concept, which is virtually zero), with Physical self-concept and Anxiety being of the order of .26, and the correlation with Happiness being significant ( $r=.34$ ,  $N=27$ ,  $p=.04$ ).

A consistent pattern also emerges with e, "attributing a mood to the child", with all correlations being positive and some large enough that they would reach statistical significance with twice the sample. The same is true of g, "asking the child how s/he feels", and while f, "global appreciation", is not quite as consistent, two of the correlations are of a large order (School and Happiness) while another is almost significant (Physical self-concept,  $r=.30$ ,  $N=25$ ,  $p=.07$ ). Relationships with "thanking the child" are similarly consistent.

A tendency towards a consistent pattern also emerges with k, "telling the child s/he is good", but this time the relationship is negative. Correlation with Happiness approaches significance ( $r=-.29$ ,  $N=26$ ,  $p=.077$ ).

It could be, of course, that the usage of these different praising locutions relates to some other variables such as parental warmth or personality variables, and that these latter might be more directly mediating any apparent effect on the child's self-concept. Nevertheless, given the investigatory nature of this study, the correlational results are quite striking. This is particularly so given the fact that the two sets of data came from independent groups.

In summary, although only one type of praising locution, attribution of ability retrospectively, revealed very clearly significant relationships with scoring on the Piers-Harris Children's Self-Concept Scale, the fact that any relationship was found between it and the Parent Praise Questionnaire is encouraging. The latter might well prove a useful preliminary instrument for other studies in which relationships between parental praise and children's self-concepts are being investigated.

#### 11.2.5.3.2 Correlational Analysis of Total Praise Score

Correlations between total praise (sum of the 4 X 16 likelihood ratings) and the Piers-Harris scores were generally negligible or close to zero. This could indicate, when taken together with the previously described findings, that the important variable is not how much praise is used, but specifically what type of praising locutions are used.

One result reported in Piers (1969) is interesting in this context. Some unpublished data of Cox apparently indicated that total Piers-Harris scores correlate significantly with subjects' perceptions of their parents as loving as opposed to rejecting ( $r=.56$  for grades 6-9). It would be interesting to determine whether any particular pattern of praise by parents contributes to this perception by the child.

#### 11.2.5.4 Correlational Analysis: Likelihood of Behaviour and Specific Locutions (Within Situation)

Correlations were calculated, for Years 3 and 7 separately, between the likelihood of the behaviour and the use of specific locutions. Only significant or near significant correlations are reported.

11.2.5.4.1 Year 3 - Situation 1: The more likely the child was to have tidied her/his room, the more likely the parents were to say that they noticed the behaviour ( $r=.46$ ,  $N=29$ ,  $p=.006$ ). Praising the specific behaviour ( $r=.30$ ,  $N=29$ ,  $p=.055$ ), thanking the child ( $r=.28$ ,  $N=28$ ,  $p=.08$ ) and exclamations ( $r=.29$ ,  $N=29$ ,  $p=.06$ ) all approached significance. Thus it seems that the more likely this behaviour was to occur, the more likely the parents were to use these specific locutions. Correlations with global appreciation and telling the child s/he is good were of the order of .23.

11.2.5.4.2 Year 7 - Situation 1: The more likely the child was to tidy her/his room, the less likely the parents were to praise the specific behaviour ( $r=-.28$ ,  $N=64$ ,  $p=.014$ ), and the less likely were they to express an expectation about future behaviour ( $r=.27$ ,  $N=64$ ,  $p=.016$ ) or to label the behaviour ( $r=-.27$ ,  $N=64$ ,  $p=.016$ ). They were also less likely to attribute ability to the child ( $r=-.23$ ,  $N=64$ ,  $p=.036$ ), to exclaim ( $r=-.223$ ,  $N=62$ ,  $p=.041$ ) or to say that they noticed the behaviour ( $r=-.27$ ,  $N=64$ ,  $p=.014$ ). However, the more likely this behaviour, the more likely the parents were to attribute a characteristic to the child ( $r=.26$ ,  $N=63$ ,  $p=.02$ ).

This is a completely different pattern of relationships from that of the parents of the younger group. However, it does make intuitive sense. Perhaps if the behaviour is more likely to occur, various sorts of praise are less likely because parents don't "need to" reinforce the behaviour. On the other hand, the more likely the behaviour, the more sense it makes to attribute a characteristic to the child on the basis of that behaviour.

11.2.5.4.3 Year 3 - Situation 2: The more likely the child was to bring home a good school report, the less likely were her/his parents to attribute motivation to that child ( $r=-.37$ ,  $N=30$ ,  $p=.023$ ) or to express an expectation about future behaviour ( $r=-.43$ ,  $N=30$ ,  $p=.009$ ), but possibly the more likely parents were to say that they noticed the behaviour ( $r=.24$ ,  $N=30$ ,  $p=.097$ ). Many of the other relationships were also negative, but some were negligible, so that it was not possible to determine whether this result might be suggestive of a pattern.

11.2.5.4.4 Year 7 - Situation 2: The more likely the child was to bring home a good school report, the more likely the parents were to attribute a mood or feelings to the child ( $r=.23$ ,  $N=64$ ,  $p=.031$ ). This is also different from the result obtained for the younger children.

11.2.5.4.5 Year 3 - Situation 3: The more likely the child was to practise and/or improve at a skilled activity, the more likely the parents were to attribute a mood or feelings to the child ( $r=.31$ ,  $N=30$ ,  $p=.048$ ), and perhaps to attribute motivation to the child ( $r=.29$ ,  $N=30$ ,  $p=.059$ ) or to say that they noticed the behaviour ( $r=.29$ ,  $N=30$ ,  $p=.06$ ). No other relationships were large.

11.2.5.4.6 Year 7 - Situation 3: There were no significant relationships for this situation, unlike those for the younger sample.

11.2.5.4.7 Year 3 - Situation 4: The more likely the child was to save up to buy a special gift for a family member, the more likely were the parents to thank the child ( $r=.35$ ,  $N=29$ ,  $p=.031$ ) and possibly to label the behaviour ( $r=.27$ ,  $N=29$ ,  $p=.07$ ), but it may be that parents were less likely to indicate their feelings about the behaviour ( $r=-.29$ ,  $N=29$ ,  $p=.062$ ) or to make general comments ( $r=-.25$ ,  $N=29$ ,  $p=.09$ ).

11.2.5.4.8 Year 7 - Situation 4: The more likely the child was to save up for a special gift, the more likely were the parents to attribute a characteristic to the child ( $r=.25$ ,  $N=63$ ,  $p=.023$ ) and to thank the child ( $r=.25$ ,  $N=63$ ,  $p=.023$ ). This is a somewhat similar result to that for the younger group.

In general, the pattern of correlations between likelihood of the behaviour and likelihood of different praising locutions was different for the two groups. It may be that there are insufficient data from the Year 3 group to indicate clearly the pattern of praise associated with increased likelihood of a behaviour. However, this seems unlikely since in some cases those correlations that were moderately large were in opposite directions for the two groups. Quite likely as children grow older, parents' expectations as to the desirable frequency of given behaviours change, and thus praise patterns in relation to frequency of occurrence also change.

That attribution of a characteristic to the older children was more likely to be reported as increasing in likelihood in two of the four situations the more likely the behaviour was to occur is an interesting result. In situation 1 this is inconsistent with the other relationships,

and in situation 4 it is one of only two significant relationships, thus suggesting that this locution might behave differently from other praising locutions.

#### 11.2.5.5 Correlational Analyses: Agreement between Parents and Children

##### 11.2.5.5.1 Correlational Analysis: Parent and Child Likelihood Ratings

To determine the degree of agreement between parents and their children, and as a reliability check, the likelihood ratings of Year 7 children and their parents were intercorrelated, as were their ratings of the likelihood of the behaviour. Parents and children agreed overall on the likelihood of the child tidying her/his own room unasked ( $r=.28$ ,  $N=57$ ,  $p=.016$ ). They also agreed on the likelihood of the child saving to buy a special gift ( $r=.28$ ,  $N=56$ ,  $p=.017$ ).

However, correlations for the other two situations were negligible, indicating that parents and children did not necessarily agree on the likelihood of the child bringing home a good school report or practising a skilled behaviour.

They also did not necessarily agree, overall, on the likelihood of the parents using the different forms of praise within each situation. There was apparently greater agreement on "tidying own room" (7/16 correlations significant at  $p<.05$ ) than there was on "saving for a special gift" (2/16 correlations significant at  $p<.05$ ). A Fisher exact probability test on these frequencies yielded a  $p=.057$ . Should this result prove veridical, it could be due to the fact that the former situation is likely to occur relatively frequently, whereas the latter would only be likely to occur at certain times of year. Thus both groups would have fewer instances to reflect upon in order to make their likelihood estimates. This could imply that in a questionnaire of this type some situations might be more effective than others in maximizing the accuracy of ratings.

The likelihood ratings for the use of each different kind of locution were also intercorrelated. Each situation is examined in more detail.

11.2.5.5.1.1 Situation 1: Parents and children agreed, overall, on the likelihood that parents would praise the specific behaviour ( $r=.32$ ,  $N=57$ ,  $p=.008$ ), attribute a characteristic to the child ( $r=.35$ ,  $N=55$ ,  $p=.005$ ), attribute motivation to the child ( $r=.35$ ,  $N=57$ ,  $p=.004$ ), and attribute a mood or feelings to the child ( $r=.31$ ,  $N=56$ ,  $p=.009$ ). They also agreed on the likelihood of parents globally appreciating the child ( $r=.28$ ,  $N=57$ ,  $p=.017$ ), attributing ability to the child ( $r=.26$ ,  $N=57$ ,  $p=.028$ ) and commenting on the child's physical characteristics ( $r=.34$ ,  $N=56$ ,  $p=.005$ ).

All other locutions in response to the child tidying her/his own room unasked resulted in small and non-significant correlations, indicating that, overall, parents and children did not agree on the likelihood that parents would express an expectation about future behaviour, label the behaviour, tell the child s/he is good, ask how the child feels about the

behaviour, thank the child, indicate own feelings about the behaviour, exclaim, make general comments, or indicate having noticed the behaviour.

11.2.5.5.1.2 Situation 4: Parents and children agreed, overall, on the likelihood of the parents attributing a characteristic to the child ( $r=.28$ ,  $N=57$ ,  $p=.018$ ) and on the likelihood of the parent thanking the child ( $r=.31$ ,  $N=56$ ,  $p=.009$ ). Correlations were not significant for any other locutions in relation to the child saving to buy a special gift, indicating low agreement between the two groups, parents and children.

This is interesting, since if it is assumed that parents and children would probably guess that thanks is likely to occur, that leaves "attribution of a characteristic" as the only locution which is agreed upon in both situations. Perhaps when parents do attribute a characteristic to the child it is very salient to the child, who notices and absorbs it. This is further evidence that perhaps attribution of a characteristic has in some sense different properties to those of other forms of praise.

11.2.5.5.2 Correlational Analysis: Parent and Child Likelihood Ratings (Individual Parent-Child Pairs)

Within subject-pairs' correlations were calculated for each parent-child pair for the two situations separately. For tidying own room, 17/60 pairs were significantly correlated ( $p<.05$ ), and for saving for a gift, 14/58 were significantly correlated ( $p<.05$ ). Means and standard deviations of these sets of correlations were calculated. They were very similar for the two situations (tidying own room - mean=.33, s.d.=.29,  $N=60$ ; saving for a gift - mean=.30, s.d.=.26,  $N=58$ ). When the correlations were themselves intercorrelated, however, it was found that agreement between parents and child on one situation by no means guaranteed agreement on the other ( $r=.09$ ,  $N=58$ ,  $p=.244$ ), thus strengthening the result obtained with overall ratings.

Correlations were calculated between the average "company" score and agreement between parent and child on the two situations. It would be expected that greater time spent together might result in greater agreement. This was not so (Situation 1 -  $r=-.02$ ,  $N=58$ ,  $p=.448$ ; Situation 4 -  $r=.12$ ,  $N=58$ ,  $p=.194$ ).

11.2.5.6 Correlational Analysis: Year 3 and Year 7 Likelihood Ratings

The means and standard deviations for all locutions, for all situations, for both age levels, were calculated. Figures 11.2.3.1 to 11.2.3.4 above depict the means. Correlations were calculated between the means of the two groups and these results are set out in Table 11.2.9. These results were impressive, as was that between mean praise for all situations added together ( $r=.95$  - see Table 11.2.7.2 above). This could be interpreted as meaning that the relative likelihood of each type of praise is functionally indistinguishable between the two groups.

**Table 11.2.9:** Correlations between means of likelihood ratings for use of locutions, Years 3 and 7 parents' data.

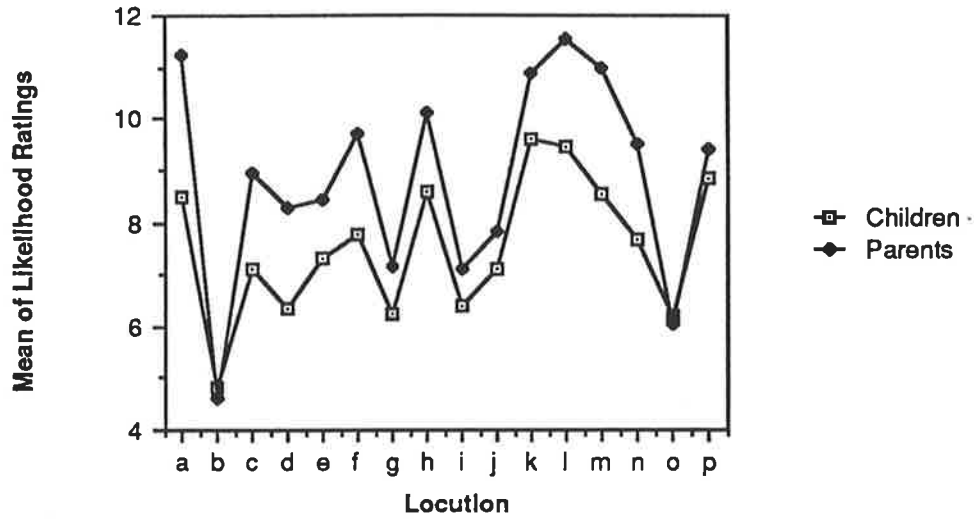
Sitn.	r
1	.93
2	.96
3	.93
4	.95

On the other hand, the overall likelihood was different. This was in the direction that in three of the four situations 12-year olds were less likely to receive most of the praising locutions than were 8-year olds. Using a Sign Test this was a significant difference between the groups (Situation 1 -  $x=2$ ,  $N=16$ ,  $p=.002$ : Situation 2 - n.s.: Situation 3 -  $x=2$ ,  $N=16$ ,  $p=.002$ : Situation 4 -  $x=4$ ,  $N=16$ ,  $p=.038$ ). "Expressing an expectation about future behaviour" was the one locution that increased in likelihood for the older children in all three situations. Situation 2, bringing home a good school report, behaved differently from the other situations, there being no significant difference between the two sets of means.

#### 11.2.5.7 Comparison of Parents' and Children's Likelihood Ratings

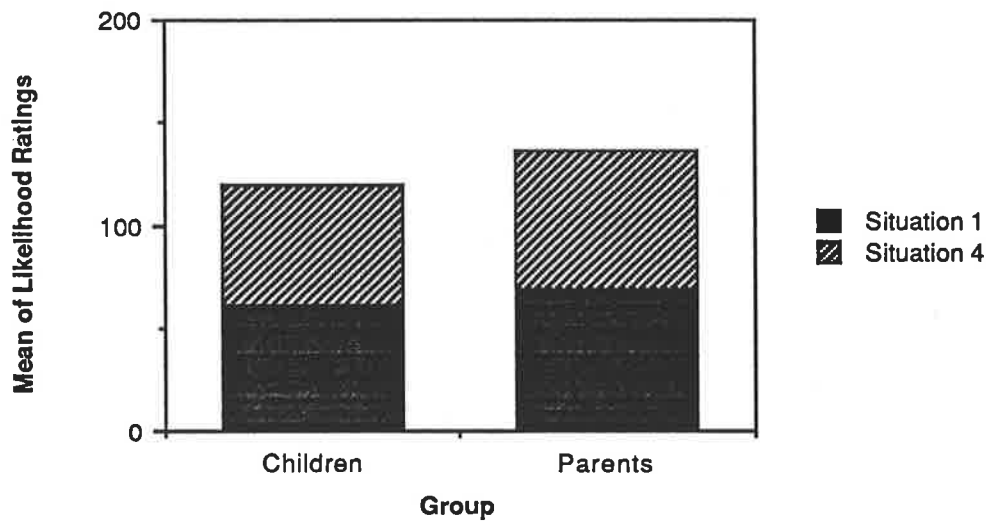
A total score was obtained, for children and parents, by adding together the ratings of similar locution types across situations (e.g., "a" in situation 1 added to "a" in situation 2). Means and standard deviations for each of the 16 locution types were then calculated for the two groups. Figure 11.2.4 shows these data. Parents' estimates of their likelihood of using the specific locutions were higher than those of the children on 14 out of the 16 categories (significant on a Sign Test -  $x=2$ ,  $N=16$ ,  $p=.002$ ). The two categories where the difference was in the opposite direction were "expectation about future behaviour" and "general comments". "Expectation" is interesting since this was the only category that, according to these analyses, was used more as the child grew older. All other types of praise were apparently used less. There was very strong agreement between children and parents on relative likelihood of using the 16 types of praise ( $r=.93$ ).





**Figure 11.2.4:** Graph of means of parents' and children's ratings for likelihood of use of different praising locutions.

Comparisons were also made between parents and children on total likelihood of praise in Situation 1 and Situation 4. Figure 11.2.5 depicts these data.



**Figure 11.2.5:** Graph of total likelihood of praise by situation, parents' and children's estimates.

### 11.2.5.8 Gender Comparisons

#### 11.2.5.8.1 Comparison of Gender (Year 3): Likelihood of Receiving Praising Locutions

T-tests were carried out on total praise likelihood for each situation, and on total praise likelihood, to determine whether there were any differences between male and female children in their receipt of praise. No significant gender differences were revealed in the Year 3 data.

#### 11.2.5.8.2 Comparison of Gender (Year 7): Likelihood of Receiving Praising Locutions

Similar analyses were performed for the Year 7 data as were done for the Year 3 data, but no there were no significant gender differences.

### 11.2.5.9 Comparison of Years 3 and 7: Likelihood of Behaviour

T-tests were carried out to determine whether any of the four behaviours described in the situations was more likely at either age. There was no significant difference for situations 1, 2 and 4, but the younger children were more likely (according to parents' ratings) to practise or improve at a skilled behaviour than were the older children ( $t=2.35$ ,  $df=91$ ,  $p=.02$ ).

### 11.2.5.10 Comparison of Years 3 and 7: Time Spent with Children

An average "in company" score was calculated for each subject by adding estimated daily hours during the week with those at the weekend, and taking their mean. A t-test showed that, according to parents, more time was spent with younger than with older children ( $t=2.13$ ,  $df=79.73$ ,  $p=.036$ ).

### 11.2.5.11 Correlation of Time Spent with Children and Use of Praise

Analyses were performed for each parent group separately to determine whether there was any relationship between time spent with the child and likelihood of using specific praise categories. Pearson  $r$  correlation coefficients were calculated using the average "in company" score and the total scores for each type of praise (summed across situations).

No consistent pattern emerged from the data provided by Year 3 parents. In fact, most relationships were negligible. There was only one significant result, that the more time was spent with the child the more likely were the parents to report using global appreciation ( $r=.35$ ,  $N=26$ ,  $p=.042$ ). Similarly, the Year 7 parents' data showed no consistent pattern of correlations. There was a significant relationship between likelihood of thanking the child and time spent with the child ( $r=.23$ ,  $N=63$ ,  $p=.035$ ). Since performing multiple correlations is likely to produce some significant relationships by chance a percentage of the time, it must be concluded on the basis of the parents' data that there is probably no relationship between amount of time spent with the child and type of praise used.

Interestingly, however, data provided by the children told quite a different story. Every one of these relationships was negative and many were certainly not negligible. Thus, according to the children, the more time was spent in company with parents the less likely were those parents to express an expectation about the child's future behaviour ( $r=-.34$ ,  $N=58$ ,  $p=.005$ ), the less likely were they to attribute a mood or feelings to the child ( $r=-.26$ ,  $N=57$ ,  $p=.027$ ) and the less likely were they to ask a question about the child's feelings ( $r=-.45$ ,  $N=58$ ,  $p=.0001$ ). They were also less likely to comment on the child's physical characteristics ( $r=-.22$ ,  $N=58$ ,  $p=.05$ ), and to make general extended comments after pleasing behaviours ( $r=-.23$ ,  $N=58$ ,  $p=.043$ ). They were, apparently, less likely to praise the child in general the more time they spent with her/him ( $r=-.28$ ,  $N=53$ ,  $p=.021$ ).

Given that parents and children disagree on aspects of parental praise, the question must be raised as to who has the more accurate perception. If the children are right, could these results be explained by proposing that there are at least two types of parent, those who spend a great deal of time with their children and treat them on an equal footing, and those who spend less time with their children but "make up for it" by lavishing praise on the child in a more intensive manner when they are together?

If the parents' result is accepted, could it be that many children simply do not notice parental praise and therefore underestimate its likelihood, perhaps the more so the more they are in company with their parents? This suggestion is not inconsistent with the disagreements between parents and children noted above.

#### 11.2.5.12 Praise Patterns

Unweighted least squares factor analyses were performed on the total scores for each category of praise (across situations). It was hoped that the sixteen categories of locution could be condensed into a smaller number of factors. Neither oblique nor varimax rotations demonstrated any clear pattern of factors and this was a consistent finding across all three sets of data, although there appeared to be about four (five, according to Year 3 parents) factors.

McQuitty (1961) linkage analyses were also carried out on the three correlation matrices but once again no interpretable structures could be discerned. The patterns which emerged are shown in Appendix 7.7. Although no clear conclusions regarding a factor structure were thus able to be drawn from these analyses, all groups did agree on the following groupings:

From linkage analysis:

Grouping (1) Social reinforcement (praising the specific behaviour), parent's feelings about behaviour, noticing behaviour.

Grouping (2) Global appreciation, telling child s/he is good, parent's exclamations.

Grouping (3) Attribution of mood, question about child's feelings.

Grouping (4) Attribution of a characteristic, attribution of motivation.

From factor analyses (varimax and oblique rotations):

Grouping (2) Global appreciation, telling child s/he is good, parent's exclamations.

Grouping (3) Attribution of mood, question about child's feelings.

Grouping (5) Attribution of motivation, thanks.

These groupings do make intuitive sense although they cut across the broader preliminary categories of praise (e.g., coded 10, 20 etc. in Table 11.1.1) which were initially devised. A tentative attempt to reduce the number of categories of praise shown in Table 11.1.1 could be advanced by characterizing locutions occurring within each one. Thus Grouping (1) might be characterized as "attention to specific behaviour", Grouping (2) as "enthusiastic response", Grouping (3) as "feeling response" and Grouping (4) as "interpretation of behaviour". Grouping (5) is not easy to characterize. It should be emphasized that these groupings are not solidly supported by the analyses, and further work would be needed to establish that such a restructuring would be a justified improvement on the original classification scheme.

#### 11.2.5.13 Additional Praising Locutions

All parents and Year 7 children had an opportunity to write out any additional locutions that the parents might use in each situation. Examination of these data suggested that the addition of a "social comparison" category was warranted, and it is included in Table 11.1.1. It would include such locutions as "you have done better than your brother", "you have the same taste as I do" and "you certainly play better than I can".

Some other locutions which recurred cannot clearly be classified as praise. Thus, parents said that they might list for the child the positive effects which would flow from her/his behaviour, such as "now you'll be able to find things in your room". Apparently they might also take the opportunity to make an object lesson of the occasion, saying, for example, "everyone should always do their best" or "you'll find in life that one of the greatest feelings is reward for effort". Since parents considered such locutions as praise, it was considered feasible to include the former type in the classification scheme. Thus a relevant category also appears in Table 11.1.1. The latter type might best be regarded as "extended general comments".

#### 11.2.6 A Parent Praise Questionnaire/Reinforcement History Questionnaire Study

A further small study was done to determine whether there were any relationships between perception of positive, negative and neutral experiences in growing up, as measured by the Reinforcement History Questionnaire (refer to Chapter 5), and the Parent Praise Questionnaire, adapted for retrospective use by adults. Fifty-two students from an introductory psychology course at the South Australian Institute of Technology completed the rating scales of likelihood of use of the different praising locutions from the perspective

of themselves at 12 years of age (Instructions appear in Appendix 7.8). They also completed the Reinforcement History Questionnaire.

Proportions of positive, negative and "neutral" (1-(positive/non-null+ negative/non-null experiences)) were calculated for each respondent. Proportions of positive and negative experiences were calculated in two different ways, (1) as a proportion of positive + negative, (2) as a proportion of total non-null responses (that is, the total excluding "does not apply").

Correlations were calculated between these five scores and (1) each type of praise (the 19 locutions were included), (2) praise score for each of the four situations, and (3) total praise score. A consistent pattern of correlations was found such that relationships between proportion of negative experiences reported and each type of praise, and praise score for each situation, were generally negative, whereas the converse was true for relationships between the proportion of positive experiences reported and each type of praise, and praise score for each situation. These relationships were high or significant for locutions a, c, d, f, j, o, l and s. Total praise score correlated significantly with proportion of negative experiences out of total non-null ( $r=-.27$ ,  $N=52$ ,  $p=.028$ ) and also with proportion of positive experiences out of non-null ( $r=.41$ ,  $N=52$ ,  $p=.001$ ).

Most interestingly, 18/19 relationships between individual types of praise and "neutral" proportions were negative, and 12 of these significantly so (c, d, e, f, h, j, l, n, o, q and s) as was the relationship with total praise score ( $r=-.41$ ,  $N=52$ ,  $p=.001$ ). It does seem that so-called "neutral" experiences are perceived as negative.

Repeated measures analyses of variance were also carried out to determine whether there were situation or locution effects. There was no situation effect ( $F=2.44$ ,  $df=153/3$ ,  $p=.066$ ), but there was a locution effect ( $F=26.19$ ,  $df=918/18$ ,  $p=.01$ ) and an interaction between situations and locutions ( $F=18.44$ ,  $df=2754/54$ ,  $p=.01$ ). Thus this sample also perceived a differential likelihood of use of locutions and that the use of some locutions varies between situations.

Means and standard deviations for the different types of praise (a to s) were calculated, as were mean praise scores for each situation and a mean score over all locutions. These results are shown in Appendix 7.9. In each case the means are somewhat lower than are those reported in this chapter.

**PART 3**  
**PARENT-CHILD FOLLOW-UP STUDY**

**11.3.1 Introduction**

A parent-child follow-up study was conducted four months after the study described in Part 2. There were basically two reasons for carrying out this study. Firstly, it was considered possible that the likelihood of use of different types of praise by parents might be related to some other variables such as their attitudes. Secondly, there had been a hint in the data that likelihood of use of praise by parents might be reflected in their children's self-concepts, and it was thought that should this finding be more clearly demonstrable it might be that some other variables were acting as mediators of the effect. It was thus decided to do a follow-up study in an attempt to measure an aspect of parental attitudes: a "reliability" study of the Parent Praise Questionnaire could be done incidentally.

There is a substantial amount of literature relating to parental child-rearing practices and child's self-concept. For example, Schwartz (1966) found that children who had a high self-concept had mothers who reported affectionate warmth to the children. Baumrind (1967), as did Schwartz, studied middle-class preschool children. She found that parents of the most competent and mature children, whom she termed Pattern 1 children, were firm, loving, demanding and understanding. Parents of Pattern 2 children, who were dysphoric and disaffiliative, were firm, punitive and unaffectionate, while mothers of Pattern 3 children - dependent and immature - were moderately loving but lacked control. Fathers of these children were ambivalent and lax.

Sears (1970) completed a follow-up study of 159 children who had been studied seven years earlier and noted that a high self-concept in children at the age of 12 years was related to received parental warmth when the children were five.

Coopersmith (1967) found that domination and lack of affection, lack of regard for good behaviour and lack of firm rules (or, alternatively, severe punishment) by mothers for their children prior to adolescence led to lower self-esteem. Further than that, high self-esteem boys were more emotionally stable, self-reliant and resilient. The parents in the study also had high expectations of children already exhibiting high self-esteem and gave them consistent support and encouragement. Parental acceptance (Helper, 1958) and positive attention from parents (Rosenberg, 1965) are also associated with higher self-esteem.

Sarason (1960) found that mothers of anxious children responded to, and evaluated, their children in terms of their own standards and needs rather than those of the children.

After reviewing a good deal of the literature in this area Samuels (1977) concluded that "parental love manifested by warmth, supportive encouragement, consistency, realistic expectation, and a balance between protectiveness and reward rather than punishment is more likely to result in positive child self-concept" (p. 91). A question of interest in the present context is whether any of these attitudes, behaviours or patterns is systematically

related to the use of different types of praise, which might then, in their turn, relate to the child's self-concept. Although studies of parent-child interaction have not always shown a correlation between parental behaviour and child's self-concept, it seemed reasonable to investigate these potential mediating variables by means of an attitude scale measuring parental attitudes to their children and to child-rearing.

A scale was sought which was apparently valid and reliable and which might also reflect actual parent behaviour. There is controversy over the use of such instruments since there are a number of findings (e.g., Brody, 1965) that independent direct observations on the same dimensions as are measured by a questionnaire are not related to scoring on that questionnaire. In 1965 Brody concluded that the relationship between verbally expressed child-rearing attitudes and actual behaviour was not strong.

However, more recently, Turner and Harris (1984) assessed the literature and concluded that "parental attitudes toward child-rearing...have been shown to be frequently related to actual parental behavior" (p. 166). They argued that it was "reasonable to assume that parental attitudes toward child-rearing are related to the ways in which parents interact with their children" (ibid., p. 106). Thus the area of the relationship between parental attitudes to their children and to child-rearing, and to behaviour, is clearly a viable one. However, available instruments are both scarce and disappointing.

One scale is the Parent Attitude Research Instrument (PARI) developed by Schaefer and Bell (1958). This includes three major subscales - democracy-domination, acceptance-rejection, and indulgence-autonomy - each of which contains 4-5 other scales (e.g., equalitarianism, irritability, strictness). The scale was used extensively in the sixties, notably by Coopersmith (1967) who, in his comprehensive study of the development of self-esteem in children, did find relationships between individual items of the scale and the self-esteem of mothers. However, after reviewing studies using the instrument, Becker and Krug (1965) concluded that response-set posed a major problem and that "the bulk of the evidence suggests that the PARI does not predict much very well" (p. 329).

Pumroy (1966) provides an alternative, the Maryland Parent Attitude Survey (MPAS). This incorporates scales identifying attitudes as Disciplinary, Indulgent, Protective and Rejecting. Social desirability responding is controlled by means of a forced-choice format. But Brody (1965), in comparing the PARI and the MPAS in their ability to predict mother behaviour in interaction with the child, concluded that "there appears to be no clearcut difference in predictability to behavior between the two" (pp. 321-322). The PARI apparently discriminated less sharply in the middle-range of scores while the MPAS yielded most differences between the total high and low groups and did not increase in sensitivity at the extremes. Nevertheless, the MPAS has been used to some effect. For example, Turner and Harris (1984) found relationships between parental attitudes and children's behaviour (surely a relationship as interesting as that between parent attitudes and parent behaviour).

Another scale has been developed recently by Goldberg and Easterbrooks (1984), but based on the work of Block (1965) and Cohler, Weiss and Grunebaum (1966). Called the Parental Attitudes Towards Childrearing scale (PACR), at the time the present research was done, little information was available about its psychometric properties or its effectiveness. It was therefore decided to use the Maryland Parent Attitude Survey of Pumroy (1966). In devising the scale Pumroy gave a pool of items to a group of nine psychologists with instructions to categorize each item according to the type of parent the item represented. These types, and their descriptions, were developed from the available literature on parental types. The four categories are Disciplinary, Indulgent, Protective and Rejecting. Detailed descriptions of these types appear in Appendix 7.10.

### **11.3.2 Procedure**

Four months after the initial contact was made with parents, a follow-up letter was sent in which the parents were asked to complete the praise questionnaire again (the notion of "reliability" was described simply so that in a sense the parents were set to try to remember how they had responded initially - however, since there were 68 individual ratings to make it seems unlikely that memory could be an important factor in results). They were also asked to complete the Maryland Parent Attitude Survey.

Fifty-two parents were contacted (these were parents who had given the researcher their names and addresses to receive feedback from the earlier study) and 30 returned questionnaires. Of these, three had not attached their names so no matching was possible; and not all respondents had completed both questionnaires. However, analyses were carried out where possible to determine whether parents responded similarly on the second occasion as on the first, and whether there were any relationships with the attitude variables.

### **11.3.3 Results and Discussion**

#### **11.3.3.1 Reliability of Parent Praise Questionnaire**

Intrasubject Pearson  $r$  correlation coefficients were calculated to determine whether the Parent Praise Questionnaire was reliable. The mean  $r$  was 0.59, with a range from 0.21 to 0.95, and a standard deviation of 0.17 ( $N=25$ ). However, it was subsequently concluded that the scale is quite a reactive one, and that therefore the notion of reliability in relation to it is not a sound one. Many parents felt that their praising practices had been altered as a result of participation in the study. This point is elaborated in the General Discussion at the end of this chapter.

#### **11.3.3.2 Means and Standard Deviations of MPAS Variables**

Means and standard deviations were calculated for the four subscales of the MPAS and these subscales were also intercorrelated (although they are not independent, Pumroy (1966) does these calculations). Table 11.3.1 shows the means and standard deviations of the MPAS subscales ( $N=24$ ).



**Table 11.3.1: Means and standard deviations of MPAS subscales.**

Subscale	Mean	s.d.
Disciplinarian	22.54	8.38
Indulgent	20.46	6.87
Protective	27.42	5.02
Rejecting	18.58	5.83

These data are comparable to those obtained by Pumroy who reports means for males and females separately (1966, p. 76; Table A7.12 in Appendix 7.12 shows his results).

### 11.3.3.3 Correlation between Use of Specific Types of Praise and MPAS Variables

Composite scores for the use of each type of praise were created by summing across situations for the first completion of the questionnaire. Thus 16 individual scores (locutions a-p) were calculated for each respondent and each of these was correlated with the MPAS variables.

The same composite scores and statistical calculations were done for the second completion of the Parent Praise Questionnaire. Table 11.3.2 shows the correlations for the two completions (Times 1 and 2 which were 4 months apart in time). N for individual correlation coefficients varies between 22 and 24. On the first completion, use of attributional praise (locution c) correlated significantly with Disciplinarian attitudes ( $r=-.47$ ,  $N=22$ ,  $p=.014$ ). Thus the lower the score on the Disciplinarian scale the more likely the parents were to report using this type of praise. There was a significant positive correlation between the use of this locution and the Protective scale ( $r=.39$ ,  $N=22$ ,  $p=.037$ ). At Time 2 (reliability completion) the result was similar, with the use of attributional praise negatively correlated, though not quite significantly so, with the Disciplinarian scale ( $r=-.33$ ,  $N=24$ ,  $p=.055$ ), and significantly positively correlated with the Protective attitudes subscale ( $r=.50$ ,  $N=24$ ,  $p=.006$ ).

**Table 11.3.2:** Correlations between MPAS subscales at completions 1 and 2, and likelihood of use of different types of praise.

Time	1				2			
Loc/Scale	Discip.	Indulg.	Protect	Reject.	Discip.	Indulg.	Protect.	Reject.
a	-.078	.041	.018	.199	-.197	.092	<b>.646</b>	-.384
b	.101	-.279	-.008	.033	-.083	-.047	.371	-.296
c	<i>-.469</i>	.259	<i>.389</i>	-.019	-.334	.148	<b>.500</b>	-.272
d	-.306	-.051	.345	.061	-.137	-.069	<b>.669</b>	-.462
e	-.141	-.117	.011	.332	-.275	.107	.323	-.139
f	<i>-.480</i>	<b>.517</b>	.102	.089	<i>-.394</i>	.312	<b>.431</b>	-.228
g	.049	-.238	.303	-.108	-.170	.081	<b>.480</b>	-.350
h	.011	-.099	.219	-.129	.113	-.189	<b>.490</b>	-.450
i	-.106	-.028	.264	-.099	-.297	.061	<i>.384</i>	-.188
j	-.106	-.028	.264	-.099	-.069	.056	<b>.469</b>	-.446
k	.042	.034	-.073	.055	.048	-.099	<b>.502</b>	-.490
l	-.205	.044	<i>.467</i>	-.274	-.059	-.052	<b>.572</b>	-.466
m	.071	.012	.030	-.013	.052	-.045	<i>.356</i>	-.354
n	-.261	.228	-.066	.307	-.318	.201	.246	-.162
o	-.168	-.072	.303	-.083	-.275	.163	<i>.452</i>	-.264
p	-.086	-.091	.235	.009	-.274	.121	<b>.558</b>	-.510

Note: *italicized* correlation coefficients indicate  $p < .05$

**bold** correlation coefficients indicate  $p < .01$

Self-reported use of global appreciation of the child (locution f) at Time 1 correlated negatively with Disciplinary attitudes ( $r = -.48$ ,  $N = 21$ ,  $p = .014$ ) and positively with Indulgent attitudes ( $r = .52$ ,  $N = 21$ ,  $p = .008$ ). At Time 2 the same Disciplinary result was obtained ( $r = -.39$ ,  $N = 24$ ,  $p = .028$ ) but the Indulgent scale result did not reach significance ( $r = .31$ ,  $N = 24$ ,  $p = .069$ ); however, given the low  $N$  this is still a good correlation. At Time 2 there was also a correlation between use of global appreciation and Protective attitudes ( $r = .43$ ,  $N = 24$ ,  $p = .018$ ). Oddly this same correlation was only 0.1 at Time 1.

On both completions there was a relationship between attributing motivation to the child (locution d) and Protective attitude scores (Time 1:  $r = .35$ ,  $N = 22$ ,  $p = .058$  Time 2:  $r = .67$ ,  $N = 24$ ,  $p = .0001$ ). The relationship between reported use of this type of praise and Rejection scores was not the same between occasions. On the second completion there was a significant negative correlation ( $r = -.46$ ,  $N = 24$ ,  $p = .011$ ). As Table 11.3.2 shows, there were many more significant correlations on the second completion of the questionnaire.

On both occasions the correlations between thanking the child (locution l) and Protective attitudes were significant (Time 1:  $r = .47$ ,  $N = 22$ ,  $p = .014$  Time 2:  $r = .57$ ,  $N = 24$ ,  $p = .002$ ).

Use of general comments (locution o) was also correlated with Protective attitudes on the second completion ( $r = .45$ ,  $N = 23$ ,  $p = .015$ ) and gave a high (non-significant) correlation on the first ( $r = .30$ ,  $N = 22$ ,  $p = .085$ ).

However, significant correlations on the second completion of the questionnaire between use of comments on physical characteristics (locution j), telling the child s/he is good (locution k), indicating own feelings to the child (locution m) and noticing that the behaviour has occurred (locution p) and Protective attitudes (all positive relationships) were not reflected in high correlations at Time 1.

Similarly, significant negative correlations at Time 2 between use of these four locutions and Rejecting attitudes were not reflected in high correlations at Time 1 (recall that Protective and Rejecting attitudes are negatively correlated). Perhaps the apparent strengthening of relationships with Protective attitudes over time might be a reflection of the reactivity of the scale. That is, those parents who were inclined to have such attitudes anyway might have contemplated the implications of the praise questionnaire, and changed their behaviour as a result of completing it.

#### 11.3.3.4 Correlations between Total Praise Score at Time 1 and Total Praise Score at Time 2 and MPAS Variables

A total praise score for each time was calculated by summing the 64 ratings on each completion. Correlations were then calculated with the MPAS variables.

None of the correlations at Time 1 were significant or even very high, but at Time 2 total praise score correlated positively with Protective attitudes ( $r=.60$ ,  $N=18$ ,  $p=.004$ ) and negatively with Rejecting attitudes ( $r=-.45$ ,  $N=18$ ,  $p=.031$ ).

#### 11.3.3.5 Correlations between Total Praise by Situation and MPAS Variables at Times 1 and 2

Separate praise scores for situations 1-4 were calculated by adding the 16 within-situation ratings. This was done for each completion in turn and the results were correlated with the MPAS subscale scores.

For the first completion no correlations were significant but one or two were high (e.g., use of praise in situation 3 correlated with Disciplinary attitudes,  $r=-.33$ ,  $N=21$ ,  $p=.074$ ; use of praise in situation 1 correlated with Protective attitudes,  $r=.29$ ,  $N=23$ ,  $p=.09$ )

The latter relationship was significant at Time 2 ( $r=.63$ ,  $N=22$ ,  $p=.001$ ) and there were other additional significant correlations in these data. Protective and rejecting attitudes correlated significantly with use of praise in all situations, in the former case positively, and in the latter negatively (see Table 11.3.3).

**Table 11.3.3: Correlations between Total Praise by Situation and Protective/Rejecting Subscales.**

Sub-scale Situation	Protective			Rejecting		
	r	N	p	r	N	p
1	0.628	22	0.001	-0.404	22	0.031
2	0.545	23	0.004	-0.487	23	0.027
3	0.562	22	0.003	-0.481	23	0.012
4	0.559	23	0.003	-0.385	23	0.035

There was also a significant negative relationship between use of praise in situation 2 and Disciplinary attitudes ( $r=-.37$ ,  $N=23$ ,  $p=.041$ ).

#### 11.3.3.6 Correlations between Self-Concept Variables and MPAS Variables

Since there were only eight pairs of scores entering into these analyses only brief reference will be made to the results of correlating the self-concept variables with MPAS variables. However, some interesting trends emerged, with four out of the six relationships being significant. This is particularly impressive given the very small N. For example, the less Disciplinary the parents' attitudes the better the child's School self-concept ( $r=-.72$ ,  $N=8$ ,  $p=.021$ ), and conversely the more Indulgent the attitudes of the parents the better the School self-concept ( $r=.64$ ,  $N=8$ ,  $p=.043$ ). Note, that these subscales are themselves negatively correlated.

The more Protective ( $r=.63$ ,  $N=8$ ,  $p=.045$ ) and less Rejecting ( $r=-.68$ ,  $N=8$ ,  $p=.029$ ) the parents' attitudes the less Anxious the child (note, as above).

There was a high but non-significant correlation between Disciplinary attitudes and Behaviour self-concept ( $r=-.53$ ,  $N=8$ ,  $p=.084$ ). Similarly there was a high positive correlation between Happiness and parents' Protective attitudes ( $r=.57$ ,  $N=8$ ,  $p=.068$ ).

There were no significant relationships between children's total praise scores (i.e., perception of parents' praise patterns by children) and MPAS variables.

**PART 4**  
**PRAISE PREFERENCE STUDY**

**11.4.1 Introduction**

Pety, Kelly and Kafafy (1984) developed a Praise-Encouragement Preference Scale for children. Their rationale for distinguishing between praise and encouragement rests on the work of Dinkmeyer and others (1963, 1976) who believe that praise will have a different outcome in terms of the recipient's behaviour than will encouragement. They argue that praise represents an evaluative stance involving judgments of the child's basic worth or of his behaviour. Generally, they suggest, it is used as a reward for completed tasks and behaviours. It may result in children learning to value themselves only to the extent that they are praiseworthy.

Encouragement, they argue, is relatively non-judgmental and involves the encourager sharing feelings or observations: it should act as feedback to enable the recipient to learn to evaluate her/his own behaviour in terms of whether or not it will assist in achieving the desired goal.

The aim of the study of Pety et al was to develop a questionnaire to measure a praise or encouragement orientation in children. Although they concluded that their scale needed further development, their additional aim of determining whether there were any age or gender differences was fruitful. They found that 4th., 6th. and 8th. grade subjects had a stronger preference for praise than did 10th. grade subjects. Across grade levels, males had a stronger preference for praise than did females.

Given the interesting outcome of their study and the expectation that a differential effect of different forms of praise might well relate to differential preference for varying locutions, it seemed that the question could be raised as to whether preference related to likelihood of usage (by parents) and/or to age and gender.

In compiling examples of praise and encouragement Pety et al have confounded some of the locutions which are separate and distinct in studies comprising the present project. An example they give is the following:

"Susan wrote an essay on the American Civil War for a social studies project. She asked her mother to read it. Afterward, her mother responded:

A. It looks like you put a lot of effort and thought into preparing this essay, Susan. I found it very interesting.

B. This essay is excellent, Susan. I didn't notice any mistakes in it. You're such a good writer."

Subjects had to choose which they would prefer to hear (presumably A is encouragement and B is praise - though the authors don't make this clear).

According to the definition of Kanouse et al (1981), both A and B are praising locutions. These authors point out, also, it might be noted, that "praise-like utterances persistently refuse to fall into neat classifications for the benefit of social-psychological analyses" (ibid., p.114). It is interesting that differences between groups were nevertheless found in the Pety study: subjects were discriminating between A and B in some way. Rather than the categories being praise and encouragement, however, perhaps what is represented in the examples is the informational/controlling distinction made by Deci (e.g., 1975), where A is generally more informational and B is generally more controlling - though these categories too are not mutually exclusive.

It could be argued that if praise is to act as reinforcement it should be pleasing to the recipient. Thus, if it could be found that different forms of praise were preferred, it might then be reasonable to investigate the differential effects on behaviour of these forms compared to less preferred forms. It would certainly be further evidence that children distinguish among the different varieties of praise.

Groups of children from Years 5, 7 and 10 completed a Praise Preference Questionnaire (see below) so that any developmental changes could be observed. Year 3 children were considered to be too young to reliably use the rating scales, and Year 7 was included for comparison with the earlier work. The aim of the study was to determine whether there are differences in preference for praise from parents according to situation, age and gender.

#### **11.4.2 Instrument**

The Praise Preference Questionnaire (see Appendix 7.11) was devised in a manner similar to that in which the earlier child-version of the Parent Praise Questionnaire had been devised. Two situations only were to be rated, "tidying own room" and "saving to buy a gift". The questionnaire was written in language suitable to the youngest age-group to participate, while still being acceptable to the oldest. Only 16 locutions were rated in the earlier study, but three more were added in this one. However, for comparison, data relating to likelihood of use of these additional locutions at about age 12 was collected from a sample of tertiary students (see below).

#### **11.4.3 Procedure**

Private schools in Adelaide were contacted, and letters were sent home to parents requesting permission for their child to complete the questionnaire. The researcher went to each school and supervised the children as they completed the questionnaires in a group.

As with the earlier study, the return rate from each school was approximately 30%. The sample is thus from the same population as that participating in the Parent Praise study in which parents of Years 3 and 7, and the Year 7 children, rated the likelihood of use of the different forms of praise. Because of the expanded set of locutions (locutions q, r and s added) in the praise preference study compared to the parent praise study, for comparison

purposes, a further set of data was collected. A group of tertiary students (N=54) from the South Australian Institute of Technology completed the Parent Praise Questionnaire from the perspective of themselves at 12 years of age. Reference was made to this study in the final section of Part 2 of this chapter. It should be noted that respondents contributing data were probably from a more heterogeneous group than those participating in the Praise Preference study.

#### **11.4.4 Results**

##### **11.4.4.1 Description of Sample**

Three groups participated in the study proper. They were from Years 5, 7 and 10.

(1) Group 1 (Year 5): There were 22 males and nine females in this group. The average age overall was 10.10 years (s.d.=.60).

(2) Group 2 (Year 7): There were 32 males and 14 females in this group. The average age was 12.28 years (s.d.=.33).

(3) Group 3 (Year 10): There were 51 males and 47 females in this group. The average age was 15.19 years (s.d.=.38).

##### **11.4.4.2 Overall Comparison of Situations and Locutions**

Repeated measures analyses of variance were carried out on the data from each group to determine whether there was any difference in liking for different locutions, or for locutions within the two situations.

###### **11.4.4.2.1 Group 1 (Year 5)**

There was no situation effect for the Year 5 data, but there was a locution effect, and an interaction between situation and locution. The results are shown in Tables 11.4.1 and 11.4.2.

**Table 11.4.1: Year 5 - Results of repeated measures analysis of variance, locution.**

Source of variation	SS	df	MS	F	p
Within cells	1128.79	486	2.32		
Locution	511.16	18	28.39	12.23	.01

**Table 11.4.2: Year 5 - Results of repeated measures analysis of variance, interaction between situation and locution.**

Source of variation	SS	df	MS	F	p
Within cells	600.70	486	1.24		
Situation by Locution	89.58	18	4.98	4.03	.01

#### 11.4.4.2.2 Group 2 (Year 7)

The Year 7 data also yielded a locution effect and an interaction. Tables 11.4.3 and 11.4.4 show the results.

**Table 11.4.3: Year 7 - Results of repeated measures analysis of variance, locution.**

Source of variation	SS	df	MS	F	p
Within cells	2374.21	774	3.08		
Locution	1149.68	18	63.87	20.82	.01

**Table 11.4.4: Year 7 - Results of repeated measures analysis of variance, interaction between situation and locution.**

Source of variation	SS	df	MS	F	p
Within cells	1186.76	774	1.53		
Situation by Locution	168.61	18	9.37	6.11	.01

#### 11.4.4.2.3 Group 3 (Year 10)

The results were similar for the oldest group as they were for the two younger groups. Tables 11.4.5 and 11.4.6 show the results for this group.

**Table 11.4.5: Year 10 - Results of repeated measures analysis of variance, locution.**

Source of variation	SS	df	MS	F	p
Within cells	5530.8	1692	3.27		
Locution	1787.3	18	99.29	30.38	.01

**Table 11.4.6: Year 10 - Results of repeated measures analysis of variance, situation by locution.**

Source of variation	SS	df	MS	F	p
Within cells	2581.09	1692	1.53		
Situation by Locution	230.80	18	12.82	8.41	.01

#### 11.4.4.3 Analyses of Locutions

Since there were no significant differences between situations for any group, it was decided to combine situations 1 and 2 to create a mean score for each respondent for each locution (e.g., mean of "a" rating for situation 1 and "a" rating for situation 2).

Using these new scores analyses of variance were performed for each locution to determine whether there was a gender effect, an age effect, and any interaction. Detailed

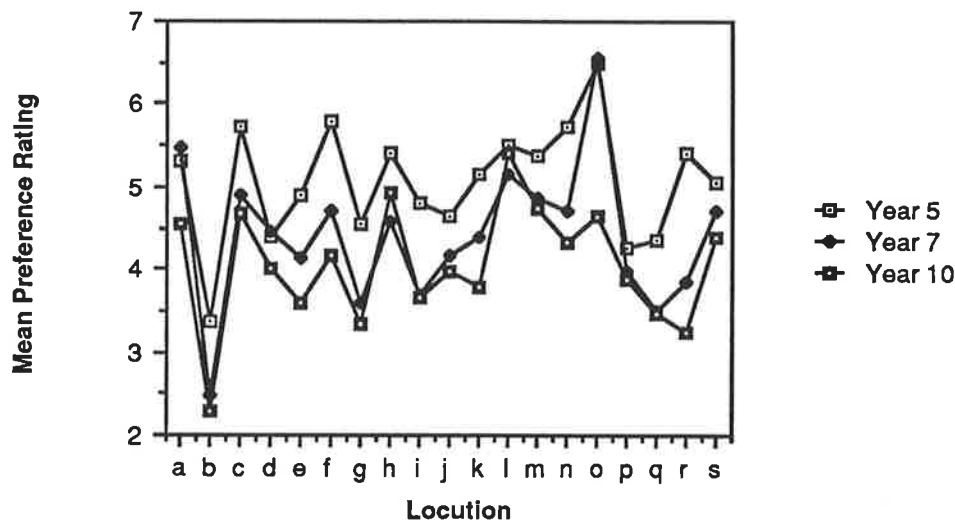


locution by locution results are shown in Appendix 7.13. In summary, these analyses suggested that there was a significant age effect for all locutions except d, j, l, p and s. This was always in the direction of decreasing liking as respondents grew older. In only two cases (a and k) were Groups 1 and 2 significantly different from Group 3. In all other cases Group 1 was significantly different from Groups 2 and 3. These results can be seen more clearly in Table 11.4.7 in which the genders have been combined within each group (see 11.4.4.4 below). In three cases (b, j and o) there was a gender effect. It should be noted that because of the unequal numbers in cells multi-factor analyses are not the ideal form of analysis. However, it is shown below that the results were confirmed by other statistical analyses.

#### 11.4.4.4 Oneway Analyses of Locutions

Since the numbers in the cells were quite unequal, it was decided to re-analyze the data, combining genders where possible, and using a oneway (as opposed to multi-factor) analysis of variance procedure. T-tests were also calculated between genders within each group and over all groups to determine where the gender differences lay.

The means and standard deviations for each locution are set out in Table 11.4.7, and Figure 11.4.1 depicts the means graphically. Table 11.4.8 shows the results of the individual analyses of variance.



**Figure 11.4.1:** Graph of means of preference ratings by group.

**Table 11.4.7: Means and standard deviations of preference ratings by group.**

Age group	Year 5		Year 7		Year 10	
	Mean	s.d.	Mean	s.d.	Mean	s.d.
<b>Praise category</b>						
a Social reinforcement **	5.30	1.25	5.46	0.91	4.54	1.29
b Expectation about behaviour *+ g	3.37	1.48	2.49	1.41	2.29	1.03
c Attribution of characteristic *+	5.74	1.43	4.89	1.37	4.67	1.39
d Attribution of motivation n.s.	4.40	1.15	4.45	1.33	4.00	1.39
e Attribution of mood *+	4.89	1.44	4.12	1.59	3.60	1.49
f Global appreciation *+	5.80	1.78	4.72	2.08	4.15	2.13
g Question about child's feelings *+	4.55	1.40	3.59	1.32	3.34	1.39
h Labelling behaviour *&	5.42	1.16	4.59	1.44	4.94	1.39
i Attribution of ability *+	4.80	1.35	3.70	1.39	3.65	1.47
j Comments about physical characteristics n.s. g	4.63	2.05	4.16	1.88	3.99	2.01
k Telling child s/he is good **	5.15	1.56	4.40	1.58	3.77	1.70
l Thanks n.s.	5.50	0.97	5.15	0.95	5.42	1.22
m Parent's feelings *\$	5.37	1.15	4.87	1.15	4.74	1.26
n Parent's exclamations *+	5.73	1.70	4.71	1.79	4.32	1.68
o Extended general comments ** g	6.48	0.96	6.54	0.78	4.64	1.83
p Noticing behaviour n.s.	4.27	1.58	3.97	1.24	3.88	1.34
q Child's benefits from own behaviour *+	4.37	1.22	3.49	1.36	3.45	1.35
r Comparison with others' behaviour *+	5.42	1.86	3.85	2.07	3.23	2.03
s Attribution of behaviour n.s.	5.06	1.21	4.71	1.61	4.40	1.43

**Notes:** \*=significant oneway analysis of variance ( $p < .05$ )

#=Years 5 and 7 significantly different from Year 10 (Student-Newman-Keuls,  $p < .05$ )

+ =Year 5 significantly different from Years 7 and 10 (Student-Newman-Keuls,  $p < .05$ )

&=Year 5 significantly different from Year 7 (Student-Newman-Keuls,  $p < .05$ )

\$=Year 5 significantly different from Year 10 (Student-Newman-Keuls,  $p < .05$ )

g=significant gender differences (see text)

**Table 11.4.8: Results of analyses of variance for each locution separately**

Locution	Source of variation	df	SS	MS	F	p
<b>a</b>	Between groups	2	31.96	15.98	11.19	.00001
	Within groups	172	245.59	1.43		
	Total	174	277.55			
<b>b</b>	Between groups	2	27.84	13.92	9.26	.0002
	Within groups	172	258.74			
	Total	174	286.58			
<b>c</b>	Between groups	2	26.94	13.47	6.89	.0013
	Within groups	172	335.94	1.95		
	Total	174	362.88			
<b>d</b>	n.s.					
<b>e</b>	Between groups	2	38.23	19.11	8.35	.0003
	Within groups	172	393.72	2.29		
	Total	174	431.95			
<b>f</b>	Between groups	2	65.77	32.88	7.74	.0006
	Within groups	172	730.77	4.25		
	Total	174	796.54			
<b>g</b>	Between groups	2	34.63	17.32	9.12	.0002
	Within groups	172	326.72	1.89		
	Total	174	361.35			
<b>h</b>	Between groups	2	12.50	6.25	3.35	.037
	Within groups	172	320.99	1.87		
	Total	174	333.49			
<b>i</b>	Between groups	2	33.026	16.51	8.13	.0004
	Within groups	172	349.33	2.03		
	Total	174	382.36			
<b>j</b>	n.s.					
<b>k</b>	Between groups	2	48.00	24	8.82	.0002
	Within groups	172	468.01	2.72		
	Total	174	516.01			
<b>l</b>	n.s.					
<b>m</b>	Between groups	2	9.39	4.69	3.19	.043
	Within groups	172	252.82	1.47		
	Total	174	262.21			
<b>n</b>	Between groups	2	46.88	23.44	7.98	.0005
	Within groups	172	505.40	2.94		
	Total	174	552.28			
<b>o</b>	Between groups	2	152.75	76.37	34.61	.01
	Withingroups	172	379.55	2.21		
	Total	174	532.29			
<b>p</b>	n.s.					
<b>q</b>	Between groups	2	20.96	10.48	5.92	.003
	Withingroups	172	304.27	1.77		
	Total	174	325.23			
<b>r</b>	Between groups	2	112.66	56.33	13.94	.00001
	Within groups	172	695.09	4.04		
	Total	174	807.75			
<b>s</b>	n.s.					

#### 11.4.4.5 Comparison of Males and Females

When t-tests were carried out comparing males and females over the sample as a whole (males N=105, females N=70), significant differences were indeed found for locutions b, j and o (b;  $t=2.15$ ,  $df=173$ ,  $p=.033$  - means  $M=2.7$ ,  $F=2.28$ ; j;  $t=-3.45$ ,  $df=173$ ,  $p=.001$  - means  $M=3.74$ ,  $F=4.76$ ; o;  $t=2.52$ ,  $df=173$ ,  $p=.013$  - means  $M=5.73$ ,  $F=5.06$ ). However, within-group t-tests revealed no significant differences between the genders except in the case of locution j for the oldest group ( $t=-4.2$ ,  $df=96$ ,  $p=.0001$  - means  $M=3.24$ ,  $F=4.81$ ).

Thus it seemed that the few gender differences that existed were very weak, requiring large samples to show them up. For this reason males and females were combined for oneway analyses of variance in the same manner as for all other locutions. Locutions b, j and o therefore also appear in Table 11.4.7.

#### 11.4.4.6 Comparison of Relative Likelihood of Use of Praising Locutions and Relative Liking for Them

The ranked liking means for each group and the ranked likelihood ratings for the earlier data are set out in Table 11.4.9.

**Table 11.4.9:** Ranked liking means, by group, and ranked likelihood ratings from tertiary students.

Group	Likelihood ranks				Preference Ranks		
	Parents		Children		Children		
	Yr. 3	Yr. 7	Yr. 7	Tert'y.	Yr. 5	Yr. 7	Yr. 10
<b>Praise category</b>							
a Social reinforcement	2	1	6	1	9	2	6
b Expectation about behaviour	16	15	16	16	19	19	19
c Attribution of characteristic	9	9	10.5	6	3	4	4
d Attribution of motivation	11	12	13	8	16	10	10
e Attribution of mood	6	7	9	11	12	13	15
f Global appreciation	5	8	7	12	2	6	9
g Question about child's feelings	12	13	14	15	15	17	17
h Labelling behaviour	14	10	4	7	6.5	9	2
i Attribution of ability	8	11	12	9	13	16	14
j Comments about physical charics.	13	14	10.5	18	14	12	11
k Telling child s/he is good	3	3	1	4	10	11	13
l Thanks	10	6	2	13	5	3	1
m Parent's feelings	1	2	5	2	8	5	3
n Parent's exclamations	4	5	8	14	4	7.5	8
o Extended general comments	15	16	15	19	1	1	5
p Noticing behaviour	7	4	3	3	18	14	12
q Child's benefits from own behr.				10	17	18	16
r Comparison with others' behr.				17	6.5	15	18
s Attribution of behaviour				5	11	7.5	7

Additionally, Spearman rho correlation coefficients were calculated between the results for the tertiary students and each of the three groups in the present study. The results suggest that correspondence between likelihood of use and liking for the locutions increased with age. The correlational results are set out in Table 11.4.10.

**Table 11.4.10: Correlations, by group, between rankings of tertiary students' likelihood of use of praise and preferences.**

Year 5	Year 7	Year 10
-.11	.24	.35

A more appropriate comparison point, viz. the likelihood ratings of Year 7 children, was not exactly comparable because of the addition of the three locutions q, r and s. When the preference ranks for the 16 locutions corresponding to those used in Study 1 were re-ranked for the Year 7 group, and Spearman rho calculated to determine the degree of correspondence between relative likelihood of use by parents as estimated by children (Year 7 group in Study 1), and relative liking by a comparable group of children (Year 7 group in Study 2), the result was not significant ( $\rho=.29$ ). This suggests that parents may not praise children in the manner which children would most prefer.

#### 11.4.4.7 Comparison of the Highest Ranking Locutions in Each Group

The highest ranking locutions in each group were as follows -

Year 5 - attribution of a characteristic, global appreciation, labelling the behaviour, thanks, parents' feelings, parents' exclamations, extended general comments, social comparison.

Year 7 - social reinforcement (specific praise of behaviour), attribution of a characteristic, global appreciation, thanks, parents' feelings, parents' exclamations, extended general comments, attribution of behaviour.

Year 10 - social reinforcement (specific praise of behaviour), attribution of a characteristic, labelling behaviour, thanks, parents' feelings, parents' exclamations, extended general comments, attribution of behaviour.

It is interesting to note that examples from almost all of the broader praise categories in Table 11.1.1 (e.g., those coded 10, 20 etc.) are represented among children's most preferred locutionary types. The exceptions are telling the child that s/he is good, and comments about physical characteristics. Similarly, all but the "feeling response" grouping advanced in Part 2 above are represented.

### 11.4.5 General Discussion

Results from four studies of praise in parent-child interactions have been presented in this chapter. From data collected in the first, a preliminary classification system for praising locutions used in these interactions was developed, as was a Parent Praise Questionnaire for use in a subsequent study. Further data suggested which behaviours or situations were most likely to lead to praise occurring. In the second study, praise patterns at two age levels were examined and it was found that parents were more likely to use some locutions than others and to use different locutions according to the situation. Older children were apparently in receipt of almost every category of praise to a lesser extent than were younger children. There was suggestive evidence in the data that there are likely to be correlational relationships between type of praise used by parents, and younger children's self-concepts. Some relationships between parental attitudes, as measured by the MPAS, and likelihood of use of praise, were presented in the third section. In the final study, children showed that they had clear preferences for some locutions over others, and these preferences did not appear to change with age.

These results raise a number of issues of both theoretical and practical significance, and these will be discussed below. However, it is necessary firstly to consider some of the methodological problems inherent in studies like those which have been described, particularly biasing of the samples and social desirability responding. It is very likely that there is a degree of biasing of the samples of parents who participated. Both at the stage of the collection of free-response data, and during the conducting of the parent-child praise-likelihood study, the researcher would have captured the interest of those parents who had a certain ideological bias in relation to child-rearing practices. Those who had the time and energy to participate may also represent a biased group. The problem of personal interest and involvement is an inevitable difficulty in studies in which an attempt is made to sample outside a setting in which there is some compulsion, either by authority or by peer pressure, to complete a questionnaire.

However, it could be noted that even at the stage of the follow-up study when only strongly motivated parents would still be participating, mean scores on the MPAS for these parents were not very different from those obtained by Pumroy (1966). This implies that the problem of biasing in the sample may not have been any more extreme than it might be in many other acceptable studies.

In addition, that parents and children contributed independent ratings in the praise-likelihood study meant that a form of reliability checking could be carried out. Collusion between parents and children is unlikely to be the explanation for the similarity between their ratings since the two groups completed their questionnaires on separate occasions, and even if children had come to school with the intention of remembering what ratings their parents

had made, the likelihood that they could do so across 32 scales is not very high. In any case, that parents completed their questionnaires without reference to their children is attested to by the fact that at every school the researcher found that a great many children were completely unaware of the fact that their parents had given permission that they be in the study.

Further, it could be argued that there is a sense in which biasing in the initial free responses, including selective recall and false inferences, is not an issue, since the aim of the study was to create a classification system for praising locutions. In order to create a comprehensive system it would be necessary to include examples of locutions which were rarely used as well as those most frequently used. Thus, if parents were indulging in social desirability responding by increasing the number of examples they recorded, this behaviour could only serve to expand the classification system.

While naturalistic studies would certainly be preferable to the use of self-report instruments in determining just how frequently the different locutions are used (cf. Shrauger and Schoeneman, 1979), the presence of an observer would itself be likely to affect behaviour. And, in relation to the final study, self-report is the only way to investigate individuals' likings or preferences for varieties of praise. Since all the locutions were positive, social desirability responding is unlikely to have been a major factor when children rated them according to their liking for them. Thus, it could be argued that the results presented in this chapter are likely to be as fair a representation of the actual situation as one might achieve without the unobtrusive use of sophisticated devices. Assuming that this is so, several issues in relation to the work need elaboration, and these will be considered below.

It is interesting to note that the locutions included by parents as being used when they are "pleased with" their children's behaviour (the operationalization of the praising concept used in the pilot studies) by no means always conform to the definition of praise used by Kanouse et al. If a classification system for any purpose is to be developed, perhaps a decision should be taken in advance as to whether the psychologists' framework will prevail, or whether locutions used in ostensibly praise-evoking situations by lay people should also be included.

Although this study was conducted specifically within the context of the parent-child relationship, there are many other situations and contexts within which praise is given and received. These include work and school and within a variety of other relationships such as spouse to spouse and friend to friend. The classification system which was developed for use in this study could form a basis for investigating praise patterns within other contexts. Indeed, it would be a valuable endeavour to determine whether the apparent decrease in praise received over the years studied continues into adult life. Much of the work described in previous chapters has related to investigations into the effects of certain types of praise on

young adults. Further investigation into the question of differential effects of varieties of praise over the life-span is warranted.

In relation to the suggestion of a relationship between praise and children's self-concepts reported here, were such relationships to be substantiated in future studies, the evidence would even then only be correlational and therefore no causal hypothesis could be advanced. There are likely to be other mediating factors, and these require further investigation. It is nevertheless a provocative finding that there may be a causal influence on how children feel about themselves due to how parents praise their desirable behaviour. It certainly implies that all forms of praise are not the same, and do not have identical effects.

Further evidence for the last proposition comes from the second study in which it was clearly demonstrated that children differentiate between varieties of praise in terms of their preferences. It is quite possible that the preferred locutions would have different effects on behaviour than the less preferred (or even disliked) forms.

While the analyses were generally quantitative in nature, some analyses indicated that qualitative distinctions could be made between the locutions in terms of their effects on children. Further research into these qualitative differences would be warranted, as would an analysis of the implications of these differences for models of learning. That is, while there are conceptual grounds for distinguishing among varieties of praising locution, and while there is some suggestion in the data that the categories may correspond to different outcomes for the recipients of praise, clear relationships between the different forms of praise and children's subsequent behaviour need to be demonstrated. If these exist, it would seem that all praise is not equally reinforcing. Different conceptual models would then be required to account for the differences in effect of various locutions.

With regard to the questionnaires used in the studies, these were preliminary instruments only and may need refinement. For example, there was an implication in one result emerging from the parent praise study (described in Part 2) that children and parents might agree to a different extent according to the situation used in the questionnaire. The praise preference study also highlighted some difficulties with using a questionnaire approach, notably in relation to the categories "extended general comments" and "noticing that the behaviour has occurred". Examples used for the former, extended general comments, included reference to activities and/or material rewards, whereas it seems that the original intention of this category (implied in parents' free-response data) was to indicate that they sometimes just chatted to the child in a general way. Thus these two forms of locution have been confounded in studies described in this chapter, in such a way that it is not possible to determine to which aspect children who rate it very liked are responding.

Noticing that the behaviour has occurred, on the other hand, received an overall low rating but it seems unlikely that children would not want their parents to notice their good behaviour. In the real situation, as opposed to the questionnaire version, there would



undoubtedly be non-verbal accompaniments to this form of locution; a revised questionnaire could include more detailed descriptions of specific scenarios for respondents to consider.

The other locution which deserves comment is parental expression of an expectation about future behaviour, which is least liked by all three groups. It is possible that an expectation expressed by a parent is interpreted by the child as tantamount to a command and is thus not a positive locution. A comparison could be made with an expectation expressed by a less familiar person (within an experimental context, for example, or in a new social situation) when the expectation may be more likely to be interpreted positively in that it means that the child is being seen as capable of the expected behaviour rather than that the behaviour is being demanded. It could also be noted that this type of locution was referred to in relation to the self-concept results as producing a consistently negative, though not significantly so, pattern of correlations with the Piers-Harris Children's Self-Concept Scale. Furthermore, attribution of ability, which did correlate negatively with that scale, received low ranks from all groups.

The results of this study are not particularly confirmatory of the results of Pety et al (1984), especially in that there were really no gender differences. As mentioned above, these researchers found that males had a stronger preference for praise (as compared to encouragement) than did females across all age levels. They also found that the three younger groups (4th., 6th. and 8th. grade) had a stronger preference for praise, while the oldest group (10th. grade) had a stronger preference for encouragement. If the eight highest ranked locutions for each group are compared, there is not a great deal of difference among the three groups, except that, for the youngest, social comparison is included and social reinforcement (praising the specific behaviour) is excluded. Global appreciation is included for the two youngest groups, but not for the oldest, as is attribution of behaviour. Labelling the behaviour ranks nine for the middle group, thus just missing inclusion, while it is included in the ranks of the oldest and youngest groups.

As implied previously, there does not seem to be any very obvious way to classify the most preferred locutions (as praise/encouragement, for example, or by using the scheme devised for the present studies) although it is understandable, and this has been discussed, why some of the least preferred locutions are so ranked. With regard to the attempt made in Part 2 to reduce the number of content categories, it might be noted that at this preliminary stage of research into "neat classifications" for praising locutions such a reduction appears to be an unlikely outcome given that the more work that was done with the original system, the more categories actually emerged. Future studies might focus on examining the degree to which apparently conceptually distinct locutions are functionally the same and this, in part, has been the aim of the work described in the foregoing chapters.

## CHAPTER 12

Material in this chapter will be presented in three main sections. In the first a summary of the major and incidental findings will be presented, and in the second conceptual issues will be discussed, as will related methodological issues brought into focus by the research. Finally, some of the implications of the research for future empirical work and for applied areas of psychology will be considered briefly.

### 12.1 Summary of Results: Preliminary Remarks

It must be concluded that, as argued in Chapter 1, "verbal reinforcement" is simply not as effective in controlling behaviour as has been presumed. An expanded conception of "verbal reinforcement" such that its form and content are varied, does not result in a revision of this conclusion. "Labelling", or the attribution of a characteristic, is also not as effective in evoking behaviour as the results of previous studies have suggested. Although people apparently can distinguish among the varieties of praise, at least in response to questionnaire items, if there are differential effects of different kinds of praise it seems that they are likely to be weak in terms of the target behaviour. On the other hand, the results of the studies reported here suggest that different locutions are likely to affect the praisee's attitudes to, or feelings about, the tasks engaged in at the time the praise is delivered, rather than actual task behaviour. This is also so in relation to feelings of confidence that one's judgments of other people are accurate. In broad terms, then, the results can be seen to support the major argument underlying the thesis, namely, that current conceptions of "verbal reinforcement" are impoverished and its effects may be better understood within the terms of various social cognitive models of behaviour. The fine details of these main conclusions will be elaborated.

A number of hypotheses formed the overall thesis and a variety of studies were undertaken to investigate these hypotheses, and these are summarized below. The results are summarized in terms of the propositions forming the thesis originally presented in Chapter 3. For a chronological summary, the Preface can be consulted. Additional results which are not central to the main argument are summarized separately.

#### 12.1.1 Summary of Studies by Initial Hypotheses

(1) "Praise, in its restricted sense of "social reinforcement", is not as effective as it is generally believed to be."

At the heart of this research project was the question of the effectiveness of praise, or, more specifically, the relative effectiveness of different kinds of praise. This question was thus the subject of investigation in most of the experimental studies undertaken (Study 1, and Experiments 2, 3, 4, 6, 7 and 8), but different perspectives were taken, or different issues examined, in each study. To make a very general statement, it was found that the praise groups did not perform differently from the control groups on the major dependent tasks, although there were other effects of praise in that attitudes to, or feelings about, tasks

were affected. The methodological difficulties which could have contributed to the former result will be discussed in the second section of this chapter.

In the pilot study, Study 1, some differences were found among some of the experimental conditions. Thus, while attributional praise and the expression of an expectation about future behaviour did relate to subjects' spending longer on dependent tasks, there were no differences between these two groups, nor between social reinforcement and control conditions.

Competing mediation hypotheses about the potential effects of attributional praise and expectation about future behaviour were examined in Experiment 2. A comparison was made between the effects of these locutions under the conditions of experimenter presence or absence during the dependent task. There was no difference between the praise groups and the control group on the main dependent measure. However, some differences were found among groups in their ratings of the games they were playing.

A similar research strategy to that used in Experiment 2 was used in Experiment 3, but this time the aim was to begin investigating the role that the subject's prior self-concept might play in mediating the effects of praise. Once again the experimental treatment did not relate to differences in the dependent measure, but it did apparently relate to subjects' evaluations of the games. In relation to both Experiment 2 and Experiment 3, it was suggested that the intrinsically interesting nature of the games might have interfered with possible effects on the main dependent measure. The results of Experiment 7, however, in which an attempt was made to reduce intrinsic interest by the use of tasks rather than games did not clarify this issue; despite careful planning, the tasks themselves proved as interesting as the games had done.

In order to overcome the problem of interest a task was devised for Experiment 4 from which a dependent measure could be derived which was independent of interest. In that experiment five different treatment conditions were compared with the control condition. These conditions were attributional praise, expectation, social comparison, social reinforcement and feedback. There were no differences among groups, with all experimental groups and the control group performing at the same level. Following the identification of a further variable, namely the "choosability" of the attributed behaviour, Experiment 8 was conducted as a replication of Experiment 4 but using a different characteristic. No effects on the main dependent measure were identified in Experiment 8, although the praising locutions could be distinguished in terms of their effects on subjects' confidence in the accuracy of their person judgments.

No effect of attributional praise was found in Experiment 6. The particular procedure used (written receipt of praise, with one delivery only) might have contributed to this result. However, there was an effect in that the experimental treatment compared to the control treatment appeared to affect subjects' task evaluations.

(2) "By creating a classification of praising locutions, an attempt might be begun to explore in more detail differing effects on behaviour of various locutions."

The sequence of parent-child studies was undertaken as a means of providing support for this assertion. These questionnaire studies were carried out in parallel with the earlier experimental studies, Experiments 1 to 3. It was found to be possible to devise content categories of praising locutionary type to classify free-response data provided by parents. This classification system was then used to develop questionnaires which were administered to parents and children in a preliminary investigation of the perceptions of praise by those groups, and of the apparent effects of parental praise on children.

It was found that clear discriminations were made by parents and children among varieties of praise both in terms of likelihood of use by parents, and in terms of children's preferences. Further, there was a suggestion in the data that different kinds of parental praise might affect younger children's self-concepts differently.

It was suggested in the discussion of this work that the existence of such a classification system would facilitate future research on the important relationship between varieties of praise and behaviour. The experiments reported in other sections were undertaken to investigate the relationship between certain of the praise types and behaviour. Results of Experiment 2 in which differences were found between groups on task evaluations imply that subjects reacted differently to two kinds of praise, attribution and expectation.

(3) "Different locutions may have differential effects on behaviour by virtue of the specific information conveyed to the praisee in these locutions."

The examples used in the original analysis of this assertion were attributional praise and expectation about future behaviour. The comparison of the effects of these two praise types was the subject of studies already summarized, Study 1, and Experiments 2, 4 and 8. No difference was found between their effects on the main dependent measure in Study 1 or in Experiments 2 and 4.

More detailed conceptual analysis in conjunction with further experimental work would be necessary before it could be argued that there was any evidence for this proposition. An analysis in terms of the focus of attention induced by varieties of praise such as that outlined briefly in Section 12.2.2.5 below might prove a useful conceptual direction.

(4) "Individuals' self-concepts, both in childhood and adulthood, are likely to be affected by the receipt of specific attributions from others, particularly significant or credible others."

Experiments 3 and 7 were designed to investigate this assertion on the assumption that the self-concept mediates behaviour consistent with it. The parent-child questionnaire studies were also seen as a means of elucidating the issue.

There were difficulties in implementing Experiment 3. Nevertheless some differences emerged in response to the experimenter attributing a specific characteristic to subjects, between those who had, and those who had not, previously considered themselves in terms of that specific characteristic. This result, in keeping with most experimental studies reported in this thesis, was not reflected in differences on the main dependent variable, but in subjects' ratings of the games they were playing. After one manipulation the "schematics" on persistence variables were generally more positive about the next game they played than were the "aschematics".

In the Parent Praise Questionnaire study a global measure of self-concept was used and it was not possible to relate specific parental attributions to specific child self-concept. However, some relationships emerged which were suggestive of an effect upon children's self-concepts of the use of specific kinds of praise by parents. This conclusion was drawn after examining the pattern of correlations between the reported likelihood of use of each locution and scoring on each subscale of the Piers-Harris Children's Self-Concept scale. Specifically, there was a negative relationship between the retrospective attribution of ability to the child and adequacy of self-concept.

(5) "Should there be differential effects of the varieties of praise, potential mediating mechanisms might be (a) an attempt by the praisee to maintain consistency between self-concept and behaviour, or (b) the desire to self-present so as to please the praiser and project a positive self-image."

Experiment 2 was designed to assess this proposition. Although no differences were found on the main dependent measure between the two types of praise examined, there was some effect on task evaluation due to the manipulations. It appeared that all subjects were motivated by self-presentational considerations in that they spent longer on all tasks under every condition in which the experimenter was present. There were differences between groups in their task ratings after two manipulations. Generally speaking the attribution groups differed from the expectation and control groups which did not differ from each other. The pattern of rating differences varied between one and two manipulations, with ratings apparently reflecting shifts in feelings of tension over time and according to experimental condition.

(6) "Further, the view of the self-concept being explored is that in which it is regarded as both process and structure, an information-processing model. Thus variables like one's personally judged prior status on a given characteristic could be expected to interact with any observed effects of praise on behaviour."

The methodology employed by Markus (e.g., 1977) has been discussed at length. It reflects her theory of the nature of the self-concept (but note that more recent work expands upon the earlier theoretical model). An instrument to measure "Self-Construction" evolved over the course of the project. In the version of the questionnaire used as a preliminary to

Experiment 4 the criterion used, viz. inclusion in one's self-description, was compared with Markus' criteria, viz. extremeness and importance on a given characteristic.

Overall scores for "Schematism" and "Self-Construction" were derived and it was argued that such measures might reflect a cognitive style variable. When correlations were calculated between Schematism, based on Markus' (1977) criteria, and Self-Construction, based on this researcher's criterion, and some of the experimental variables generated within Experiments 4 and 5, the pattern of relationships was similar for the two scores.

Correlations were calculated item-by-item between self-rating and importance rating in the Self-Concept Questionnaire (Version 2). Whereas Markus (Markus, Smith and Moreland, 1985) reports that this relationship is almost always high, this was found to be predictably so only in the case of positive characteristics.

Experiment 5 was undertaken to determine whether there was a relationship between Schematism and Self-Construction and reaction times to decide whether items which might be self-descriptive were personally true or false. Relationships were positive and moderately high, thus supporting the hypothesis of an underlying cognitive style variable. That is, individuals who apparently think about themselves and their characteristics more seem to be able to access such information more rapidly than can those who are low on "Self-Construction".

(7) "There may be different effects of attributional praise on behaviour depending upon whether what is praised is perceived to be within the range of behaviours which can be chosen by the praisee. That is, attributing a characteristic which directly implies an ability may not result in the same outcome as attributing a characteristic which implies a behavioural tendency or propensity."

This hypothesis was included after the completion of Experiment 4 in an effort to understand its outcome. Experiment 6 was undertaken specifically to investigate the possibility that being able to choose to behave consistently with the attributed characteristic might be important, and Experiment 8 was a modification of Experiment 4 such that the question could be further elucidated. Questionnaire studies were also undertaken to determine whether respondents perceived differences on a dimension of "choosability" among a variety of items.

In Experiment 6 attribution of a high-choice characteristic was compared with attribution of a low-choice characteristic, but the predicted difference between groups on the dependent measure was not found. There were, however, some interactions such that subjects evaluated the dependent task differently depending on the characteristic attributed. A contrasting effect on confidence ratings of the attribution of a high and a low choice characteristic was found in Experiments 4 and 8.

A questionnaire was designed which quite directly asked respondents to rate the extent to which doing the various behaviours was a matter of "wanting to enough" (that is,

one can choose to do it if one is motivated). The a priori classification into "ability" and "behavioural propensity" items was confirmed. The results of a further questionnaire study in which several characteristics were rated on a range of variables other than "choosability" showed that importance to the self-concept of the attributed characteristic is also a key variable.

(8) "A variety of individual difference variables may also interact with observed effects."

This section should be considered in the context of there being insufficient effects of the manipulated variables on the main dependent measures to enable examination of any interaction with individual difference variables. Variables which were examined were attributional style, reinforcement history, self-monitoring, self-consciousness and "self-construction", and "being schematic" on individual dimensions.

In Study 1, the attributional praise group completed a version of an Attributional Style Questionnaire and a Reinforcement History Questionnaire. A variety of relationships emerged, including correlations between awareness of the attribution and perceived controllability of bad affiliation situations and stability of all bad situations (achievement and affiliation). Time spent on tasks and number of attempts made at tasks also related to aspects of attributional style. There were few relationships between the experimental variables and the Reinforcement History Questionnaire, but for example, self-rated persistence related negatively to number of neutral experiences with significant others reported as occurring in childhood. There were a number of correlations between the two questionnaires.

Prior to Experiment 4 subjects completed the researcher's Self-Concept (Self-Construction) Questionnaire and Snyder's (1974) Self-Monitoring scale. While a number of relationships were found between the putative cognitive style variable derived from the former questionnaire, and experimental variables, relationships between these variables and Self-Monitoring were negligible. There was, of course, no effect of praise in this experiment.

Subsequent to participation in Experiment 3, subjects received a request to complete the Self-Consciousness scale (Fenigstein, Scheier and Buss, 1975; Buss, 1980). Scoring on Private Self-Consciousness correlated significantly with the cognitive style score, ultimately termed "Self-Construction".

Self-Construction related to a number of experimental variables in Experiments 3, 4 and 5, but not in Experiment 7.

### 12.1.2 Additional Results

As the research sequence developed some investigations or analyses which had not originally been planned were undertaken in response to outcomes of studies. Results of these will be reviewed briefly. It should be noted that some of these results have been alluded to previously.

Firstly, the sequence of Self-Concept Questionnaire studies indicated that a cognitive style variable might underlie some of the results presented by other researchers within the self-schema paradigm (Experiments 3, 4 and 5). Analyses also revealed that Markus' (1977) criteria for selecting schematics was not sacrosanct in that use of another criterion did not result in different outcomes (Self-Concept (Version 2) analyses).

Secondly, an effect of praise on the evaluation of tasks proved to be a consistent finding, if not one demonstrating a clear and predictable pattern (Experiments 2, 3, 7 and 6).

Thirdly, it seems very likely that the effects of different types of praise might differ depending on the behaviour(s) implied by the praise (Experiment 6, Behaviour Rating Questionnaire study and Characteristics Rating Study).

A number of other findings of potential importance were noted during the course of reporting the empirical work. For example, it seems that "neutral" experiences at the hands of significant others in childhood are perceived as more negative than those experiences initially considered as likely to be negative, and they are more negative in their apparent effects on attributional style in adulthood (Study 1). Another example is the difference between health and non-health items on the choosability dimension which is in the counter-intuitive direction (Behaviour Rating Questionnaire study).

In relation to "importance to the self-concept", a small study using a Characteristics Rating Questionnaire revealed that among the variables "self-rating", "desirability", "pleased if attributed", "choosability" and "trying to affect behaviour", it was a key variable.

## **12.2 Conceptual and Methodological Issues**

### **12.2.1 Introductory Remarks**

A number of different conceptual issues underlay the sequence of studies undertaken, and it became clear in the process of formulating and conducting these studies that methodological issues and difficulties are very closely intertwined with these conceptual issues. For example, an early question was that of what constituted the best study design to measure likely effects. It was necessary to choose tasks which were appropriate as measures of the attributed characteristic. A related problem was how to equate locutions so that the praise categories which were being compared with the attribution were accurately represented while not being confounded with other categories. A further issue to be considered was that of the effect of task order which can often be a confounding variable. While it was argued in Chapter 5 that the nature of the research questions was such that this was not a difficulty in the usual sense, some control over this variable was able to be introduced into later experiments: this topic will not be considered again.

Subsequently, a question emerged which was interrelated with these early problems, that of what dependent variable to focus upon. Other questions to be considered were what sorts of characteristic could reasonably be attributed and measured, and on what dimensions



characteristics should be equated across studies. A difficulty related to these questions was encountered when attempts were made to fill cells to complete a factorial design. Some of the problems were only overcome after further consideration was given to conceptual issues. For example, the conceptual and empirical work undertaken in relation to the nature of the attributed characteristic was not part of the originally planned sequence of research questions.

In addition to considering the issues already raised, an aspect of self-theory which relates to the choice of locutions, the activation of the "causal self", will be discussed below. Several further methodological and conceptual problems were encountered in the attempts to pursue the likely relationship between prior self-concept and praise, and these have conceptual links with the notion of the "causal self". For example, a decision had to be made as to how best to measure "being schematic" on a given variable. Finally, the role of affect in self-processes will be elaborated in relation to the likely mediation of praise effects.

As a final introductory point, it could be noted that inevitably variables which might have had an impact could not be examined. This fact represents a limitation on any research strategy. In relation to the type of experimental work described here, non-verbal factors and relationship factors could have been important, but were not studied. Although the experimenter was a constant factor across experiments and subjects, it is likely that non-verbal factors would play an important role in effects such as those under investigation. It was not possible to examine this variable within the scope of the research. Although the relationship with the experimenter was a fairly stable factor across subjects (discounting age and gender differences), factors such as liking, status and credibility are sure to be important. Yet these were not able to be investigated. In any real situation where the hypothesized effects might occur, the relationship between praiser and praisee is likely to be more long-term and personally involved on both sides (in this context see Jussim, 1986).

#### 12.2.2 Experimental Design and Strategy

Clearly if there are differential effects of varieties of praise on behaviour, those effects are subtle and difficult to demonstrate in a laboratory situation. Considered from one perspective the two sequences of experiments, one to determine whether different locutions affect behaviour differently, and the other to investigate whether there is any interaction with prior self-concept in the praised domain, can be seen as attempts to find appropriate experimental designs and strategies. A number of different strategies and tasks were employed throughout the course of the research - the computer games, and a variety of tasks, including creativity tasks (picture interpretation, consequences and verbal tasks) and person-judgment tasks - and techniques better adapted to investigating the research questions evolved over successive experiments. In any case the very difficulty of demonstrating any effects on the main dependent measures in a less-than-perfect study indicates that such effects are weak. Were they readily observable the need to refine measurement strategies would not have emerged.

### 12.2.2.1 Nature of Tasks

In Experiments 2 and 3 interest and persistence were apparently confounded, and in Experiment 7, for which tasks were devised to overcome this problem, the challenging nature of those tasks might have undermined the intended tedium and difficulty. In Experiment 4, too, the fact that the task was intrinsically very interesting, in addition to the fact that it reflected a characteristic of "low choosability", might partially explain the failure to find a significant effect. The actual task as set may have been so salient to subjects that other stimuli could not compete for their attention.

In relation to these problems, Weber and Cook (1972) suggest that experimental treatments "should have enough impact that subjects become absorbed in them" (p. 292). It was difficult to achieve this outcome without crossing the fine line to the area where the tasks were quite engaging. Weber and Cook suggest further that if the goal is to motivate as many subjects as possible, procedures evoking multiple ego tasks (Breckler and Greenwald, 1986) should be used. Although generally this approach would not threaten the validity of an experiment, they believe that if the evoked ego task is one that might be mediating the effect of interest then it could prove problematic.

There is some evidence in the data that subjects who participated in the laboratory experiments were motivated by concerns of the public self. Thus there might have been interference from the self-presentational motive such as to undermine the anticipated consistency between the relevant self-schema or self-construct, and behaviour. In this context, however, it could be noted that the conceptual issue of the interrelationship between private self-concepts and self-presentational strategies awaits deeper consideration.

Furthermore, tasks that can be implemented in a laboratory context might simply not be appropriate to the investigation of effects which are likely to be mediated by self-processes. As was discussed in Chapter 4, the importance of the consequences of the task might be expected to relate to the likelihood that attitude-behaviour consistency would be demonstrated (Sherman and Fazio, 1983). Whether the laboratory tasks undertaken in this research project were generally regarded by subjects as having important consequences for their own lives was not investigated, but it is unlikely to be so given the examples used by Sherman and Fazio (deciding what job to pursue or what university to attend). Thus the methodology may be seen as inadequate as a serious investigation of this conceptual model.

### 12.2.2.2 Number of Deliveries of the Manipulation

It seemed from the first experiment that at least two deliveries of the manipulation were necessary to result in any effect. Despite the fact that subsequent experiments indicated that two were inadequate it just would not be feasible to set up a paradigm in which many deliveries were made over a longer time. Yet it is likely that this would be the "real-world" situation. It must therefore be concluded that the experiments reported here were very weak

analogues of a true situation. Perhaps this implies that the sounder strategy would be to undertake research only in naturalistic settings.

Alternatively, it could be argued that studies are not only conducted for the purpose of making specific generalizations, but that apparently "artificial" experiments do enable researchers to understand the processes underlying various phenomena. Mook (1983) makes this point, arguing that it is this understanding that is then applied to the "real-world". Within this view the results of studies like those described here would by no means be invalidated by their abstraction from "real-world" settings. It could be argued further that what is needed is repeated and creative attempts to overcome implementation difficulties so that that important understanding can be achieved.

#### 12.2.2.3 Written versus Verbal Praise

Just as an experiment which would reflect the likely repetition of specific types of praise in the "real-world" is not feasible, so a laboratory study to investigate the effects of written praise as it occurs in real settings seems unworkable. Experiment 6 in which a written manipulation was used was probably a weak model relative to an applied situation. Although it was actually not undertaken to examine any hypothesis about written versus verbal praise, the fact that the method employed written rather than verbal praise raises questions about the value of aligning results from the two types of study. In educational settings, at least, written and verbal praise might often be delivered conjointly. Laboratory studies could be undertaken to elucidate the effects on subjects of receiving both written and verbal praise, in comparison to the effects of their separate delivery.

#### 12.2.2.4 Equating Locutions

A small subset from the compilation of praise categories presented in Chapter 11 was investigated. Even among these examples difficulties in equating locutions across categories were encountered. In every case the most obvious dimension, length of locution, was relatively easily equated, but this is likely to be a simplistic response to a complex issue. It was suggested that Kanouse et al (1981) made a significant contribution to the debate about positive verbal statements by drawing attributional, and thus cognitive, formulations into their argument, thereby broadening the scope of available conceptual models. They argued, for example, that the presumed differential effects of specific, as compared to general, praise, might be due to the different amounts of information available in the two types of locution. As it has happened, in relation to the studies undertaken, "information value" has not necessarily proven to be the most appropriate or conceptually helpful dimension on which to compare locutions. Furthermore, the categories of Kanouse et al cannot be clearly identified with those described in relation to the work reported here. Although conceptually the locutions examined could be considered in relation to the amount of information or type of information conveyed, in practice no independent ratings were obtained, and in terms of the effects on behaviour, other dimensions seemed to emerge more naturally as explanatory

variables. For example, salience of locutions apparently varied, as did the focus of attention engendered by them (focus towards praised self or praising other cf. Kanouse et al who use "focus" to distinguish between the direction of attention towards the praised person or the praised action or outcome), and their perceived controlling versus self-determining intent.

Because the effect of praise on task ratings might be regarded as an effect on a motivational, rather than a cognitive, aspect of an individual, the consistent finding of such effects might indicate that what is important is not so much what personal information is conveyed in the locution as what feelings are generated by it. This conclusion is consistent with the argument of Pittman and Heller (1987) that intuition and research findings indicate that we do not subject every event to an attributional analysis.

In the initial stages it was found to be very difficult to equate locutions among conditions in such a way that "activation" of relevant cognitive categories could be controlled. The greatest difficulty was found with an "expectation" condition in which at first it seemed essential not to mention specifically in that condition the characteristic attributed in the attributional praise condition. That is, "I expect you will be persistent" might be interpreted in many everyday contexts as "I think you are/can be a persistent person". (Incidentally this form of expectation might be contrasted with a form which implies "should" e.g., "I expect you to be persistent", which cannot be considered as praise according to the definition.) The locutions used in Experiments 1, 2, 3, 4 and 6 were devised to be as like locutions which would be used in natural contexts as possible, but it could be argued that "activation" was not adequately controlled in these studies when attribution and expectation, and indeed social reinforcement, were being compared. Subsequently locutions were devised to overcome the difficulty. A related issue, that of activation in relation to the causal self as mediator, is discussed in Section 12.2.2.5.

#### 12.2.2.4.1 Attributional Praise - Should it be a Trait?

A related question to that of whether, and if so how, locutions can be equated, is that of what sorts of characteristics can realistically be attributed. In looking for attributable characteristics it seemed natural to begin by considering trait terms. However, it was found that this was unnecessarily limiting when practical considerations were taken into account. Thus, in Experiment 8, a characteristic implying a behavioural tendency, but which was not a trait term, was used. According to Cochran's (1984) criteria "tends to look for the good in another person" would be a trait in any case. Primarily concerned with traits in relation to personality theory, he regards three criteria as essential to defining an aspect of a person as a trait. Firstly, it should be a personal characteristic rather than a physical, physiological, socioeconomic, or impersonal characteristic, secondly, it should be stable and enduring, and thirdly, it should be descriptive rather than explanatory. He suggests that individual habits, wants and needs might be included, but sometimes they will be traits. An example Cochran uses is "X always wrinkles his forehead in discussion" which might be regarded as a habit but is also a trait. There is no obvious theoretical reason for limiting characteristics attributed

in praise to single-word trait terms, and were further research to be undertaken in this area some of these more individualistic traits might be considered as a basis for studies.

An important factor in this context, raised in the introductory literature review in Chapter 4, relates to the prototypicality of actions representing traits. If the subject does not see the situation as one in which persistence or perceptivity can be displayed, regardless of her/his self-concept or any other factor, s/he may not display that trait (Buss and Craik, 1980, 1981). The work of Rothbart and Park (1986) is also relevant in this context. They argue that traits differ in their ease of confirmability from behavioural evidence. They found that judges could discriminate among traits on various dimensions, including imaginability, or "the clarity or specificity of the relationship between the trait concept and behavior exemplars" (*ibid.*, p. 136). Since traits vary in the degree to which they are represented by specific behaviours it is probable that the effects of attributional praise will not be identical for all characteristics. It seems intuitively likely, too, that further exploration in this area might unearth links with the "choosability" variable. A final point that deserves consideration is that some traits or attributable characteristics might be more amenable than others to being matched with non-attribution forms of praise on pre-specified relevant dimensions.

It is interesting to note that in one of the studies which was pivotal to the original argument underlying the thesis, the study of Miller et al (1975), the researchers did not use attribution in the sense of a trait term (for example, "you are a very good arithmetic student"). Indeed some of their manipulations, both verbal and written, could be considered rather as forms of social reinforcement (for example, "you are doing very well in arithmetic"). Just how attributions are delivered requires further investigation given that these researchers achieved significant results, while similar effects were not found in the present research.

#### 12.2.2.5 Activation of the "Causal Self" by Specific Locutions

Fenigstein and Levine (1984) describe two experiments which together demonstrate that the effect of self-referent cognitions (priming by being asked to use words like "me", "I", "my", "alone"), especially if they imply causal agency (subjects imagine self in different situations in which the cause of the outcome is ambiguous and could be attributed either to the self or the other), result in an increased likelihood that the individual will perceive her/his self as causal. Thus, in addition to controlling for construct "activation", a difficulty which was discussed above, it may be that a further methodological issue to consider is that of equating locutions simply in terms of self-reference. Were subsequent research to show that attributional praise had markedly different effects from those of other forms of praise, a reasonable explanation might be that self-referent cognitions had been activated and the causal self engaged.

Although Ross and Sicoly (1979) found that the accessibility of self-referent information was correlated with attributions of responsibility to the self, they failed to provide direct evidence of a causal relationship. However, when Fenigstein and Levine's subjects estimated in percentages the degree to which their actions caused the outcome in the ambiguous positive and negative situations, they attributed greater causal agency to the self after the treatment. In their next experiment Fenigstein and Levine elaborated on this finding by comparing causal and non-causal words like "active" and "influential" versus "passive" and "yielding". Self-attributions were greatest where the causal self was activated even when negative events were involved. This implied that it was the causality rather than the positivity that was the key concept to be activated.

The causal self is likely to be activated when the praisee hears a message which s/he can interpret as "I am a....sort of person". This may be contrasted with the message "I expect you will behave in ....a way" which may be interpreted in such a way as to focus inwards on the causal self or outwards onto the "controlling" praiser. That is, if the praisee interprets the message as "S/he thinks I am capable of ...." then the causal self is likely to be activated, whereas if s/he interprets it as "S/he wants me to...." then the controlling aspect of the message is likely to be salient. Very subtle differences in wording of locutions along with situational cues might make a very significant difference. Perhaps even the attribution of a characteristic irrelevant to the ongoing experimental context might have the same impact on task-ratings as those observed. At any rate, the question needs investigation.

#### 12.2.2.5.1 Attitude-to-Behaviour Process Model

Consistent with Fazio's (1986) model of the attitude-to-behaviour process there does not seem to be a relationship between the self-concept and behaviour without the activation of the relevant self-statement. However, even after that activation, no clear relationship has been demonstrated. Fazio and his colleagues (Fazio, 1986; Sherman and Fazio, 1983) have found, further, that the manner of attitude formation is important in their overall model. Those formed through experience with the attitude object result in greater attitude-behaviour consistency. Direct behavioural experience as compared with indirect, non-behavioural experience, results in a stronger object-evaluation association and as a consequence a more accessible attitude. There are two related implications of this observation. Firstly, attribution without prior behavioural experience can only be expected to be a weak source of information about one's characteristics.

Secondly, there is a methodological implication of this effect. According to Fazio, commonly used attitude measures may result in the creation of attitudes where none previously existed. That is, two attitudes measured "on paper" as being the same, might in fact represent stronger or weaker object-evaluation associations. Although it was hoped that the "self-description" instruction in the Self-Construction Questionnaire would overcome this problem, the results indicate that for some reason subjects were not referring to their self-constructs while engaging in the experimental tasks. Perhaps, then, subjects did simply

create self-constructions "on the spot" and these were not firmly enough held to result in consistency with behaviour at a later point in time.

Alternatively, a further aspect of Fazio's theory relating to the differential activation of automatic versus controlled processes might help to explain the findings. A controlled process apparently requires a motivational force, and importance of consequences seems to be the key in setting it off. Then the individual clearly focuses attention on the self, and the outcome may be a greater consistency between the attitude and the behaviour. Otherwise the individual will not consider her/his behaviour carefully because an automatic process is engaged (e.g., Sherman and Fazio, 1983; Fazio, 1986).

In the context of the parallel set out in an introductory chapter between Fazio's model and the sense of consistency in the self-concept-to-behaviour relationship used here, it might be argued that the personal construct which is genuinely part of the self-description would always entail a match with behaviour. Given that such a relationship was not found in the present research, a question could be raised about whether the consequences for subjects were sufficiently unimportant as not to result in a consistency-inducing controlled process.

#### 12.2.2.6 Availability of Subjects with Specific Characteristics

In the self-concept sequence of studies difficulty was found in achieving the planned designs because inadequate numbers of subjects were available to fill cells. The problem here was to find a characteristic which would maximize the chances of being able to run a full factorial design while being reasonably operationalizable. The issue of internal versus external validity is relevant to this problem; to maximize internal validity might jeopardize the applicability of findings beyond the laboratory. It could be noted, however, that emerging results might not thereby be invalidated since even if no direct generalization from the laboratory to an equivalent "real-world" setting were to be made, understanding of the mechanism by which attributional praise operates could still be advanced (cf. Mook, 1983; Henshel, 1980).

As it has turned out it is likely that "persistence", while ultimately meeting the criteria of operationalizability and variability within the subject sample, fell down on at least one other. As the Characteristics Rating Questionnaire demonstrated, importance to the self-concept may be a key variable.

#### 12.2.2.7 What to Measure (1)

As has been stated, a good deal of the research effort went into refining studies appropriate to investigating attributional and other forms of praise. Although measures used were those specific to the characteristic under consideration, clear effects on the main dependent measures were not found. It is difficult to reconcile this outcome with the results of a number of studies reported in Chapter 2. Perhaps the difference lies in the fact that many of the earlier studies of "labelling" were conducted in naturalistic settings where a range of uncontrolled variables might be operative.

Alternatively, the nature of the dependent measure might be the important factor. Most previous studies have used a categorical measurement with subjects being required to make a one-off response. In the present research more complex variables measured on interval scales were used. Subjects were required to sustain the relevant category of behaviour over time or across tasks. The question must be raised as to what is an appropriate measure of an attributed characteristic in a controlled setting.

#### 12.2.2.8 What to Measure (2)

Given the apparent impact of praise on affective and attitudinal reactions to tasks, the question of what to measure in such studies must be considered further. That is, by measuring the effect of different locutions on the target behaviour only, the researcher or behaviour modifier might be overlooking effects on other aspects of the individual, either immediate or over a longer term. This might be particularly so in naturalistic settings where control over variables is low, and there may be significant effects which are not apparent to the behaviour modifier. Whether there is any cross-situational generality of any such effects also needs to be investigated. The present work, as indeed did that of Deci (e.g., 1971), Ryan and their co-workers (e.g., Ryan et al, 1983), has underscored the point that "apparently subtle variations in the language of praise" (Kanouse et al, 1981, p. 98) do indeed have different effects, but what those effects are likely to be is a research topic in its own right.

By maintaining a focus on the target behaviour the behaviourist might miss the actual impact of her/his treatment. Leaving aside the apparent fact that "social reinforcement" is by no means always effective, observations relating to the interaction between praise and other factors indicate that behaviourist accounts of the effects of verbal stimuli on behaviour are likely to break down when any complexity in those stimuli enters the situation. The effects of praise on aspects of the individual other than those the praiser considers the target behaviour(s) must be considered. Expanding upon behaviourist accounts has meant, initially, introducing cognitive formulations, and may mean further, as has been implied, including affective and motivational constructs.

According to Pittman and Heller (1987), taking a motivational approach would lead to an examination of the question "Why do people make attributions?" Their own answers relate to the individual's need to retain control. For the recipient of praise, a subfunction of the "control" process might be the need to examine and understand the meaning and credibility of the praising locution (cf. Kanouse et al). Analysis in these terms lends weight to the argument that consideration must be given to the interpretation of the locution by the praisee, as well as to the feelings engendered by it. Measurement issues as complex as those resulting from a consideration of schema theory would probably be encountered in relation to determining how different individuals interpreted various locutions.



### 12.2.3 Measuring Schemas

Issues relating to the measurement of schemas have been raised at other points. The self-schema model is a valuable one, particularly given the reported consistency with which predictions generated by it are confirmed. There may nevertheless be a certain circularity in relating some of these measures to one another. It is surely to be expected that if a dimension is important, then the individual would use it frequently to make self-judgments. Then its very salience could lead to some of the observed effects, such as those relating to reaction times and the recall of related behavioural incidents. What such effects show may be rather that the individual has a schema that is activated on a fairly frequent basis, than that their non-occurrence indicates no schema at all. The question must be raised as to what information processing strategies a supposed "aschematic" does use (or an individual who is unclassifiable for that matter)? Are the mechanisms qualitatively different? And do the different mechanisms co-occur in the same individual? Markus does not appear to consider these questions.

In using the example of an individual with a weight schema she envisages the verbal summary labels, images about how one's body looks relative to others', and even knowledge about the caloric content of various foods being activated under an appropriate circumstance. But, she says, should the individual not have the weight schema, this type of information will either not be attended to at all, or it may be organized "with respect to some other self-structure" (Markus and Smith, 1981, p. 241). Whether this other self-structure is imagined to be a schema is unclear. If so, and this may not be a valid comment given the uncertainty in relation to that last point, the implication is that the schematic mechanism is the only one for organizing information coherently. Clarification on this point is all the more necessary in view of the question raised previously about "aschematics" and "unclassifiables".

As Taylor and Crocker (1981) argue, we need to determine what people are doing when they are not reasoning schematically. This may be partly determined by ascertaining what schemas are not and how they differ from similar concepts. These authors suggest that an alternative may be to reason from a partial or incomplete schema or a temporary theory or hypothesis. The former notion is an odd one, since surely one of the assumed properties of a schema is its malleability; it may thus be considered always incomplete. If a schema is to be regarded as a "structure" even a rudimentary version must be seen as a schema. Conceptual work in this area is of course ongoing. In her 1987 review article Markus (Markus and Wurf, 1987) refers to the regulation of behaviour "according to whatever set of dynamic structures....are currently activated in the working self-concept" (Markus and Wurf, 1987, p. 314). "Self-schemas" are included among "possible selves, prototypes, scripts, ego-tasks, standards, strategies,....(and) productions" (ibid.).

It is necessary too, according to Tetlock and Levi (1982), to specify the conditions under which people will assimilate inconsistent information into a schema as opposed to accommodating the schema to the evidence. In addition, there is a need to specify the conditions under which various schemata are activated or "primed" to guide information processing.

Essentially it might be argued that the growth of self-schema theory has outstripped methodological advances. Thus, while Markus (Markus, Smith and Moreland, 1985) argues that individuals with a schema in a given domain will act as "experts" in that domain and be able to recognize schema-relevant information, "chunk" stimulus material into optimally useful units, expand upon missing aspects of the stimulus material, and vary their information processing strategy, and indeed demonstrates these predictions empirically, it is not demonstrated unequivocally that these behaviours are related to a schema. Perhaps Markus' dependent variables might rather be her independent variables if one aim is to explore cognitive structure in relation to the self-concept. That is, techniques that are used to identify "schematics" are probably the weakest aspect of her research, while the behavioural findings are impressive.

In view of recent ideas about the status of unconscious processes in information processing (e.g., Meichenbaum and Gilmore, 1984), it might be instructive for the research technique to be inverted so that "being schematic" in a given domain were operationally defined in terms of some of the information processing outcomes. Subsequently, comparisons could be made among groups in their apparent cognitive organization of self-related material. That is, once it is seriously proposed that some schemata "are rarely explicitly formulated" (Meichenbaum and Gilmore, 1984, p. 281), that "they may be thought of as being implicit or as operating at an unconscious level" (ibid.) and that they contain ""silent assumptions"" (Kovacs and Beck, 1978, p. 528), then it makes more sense to use behavioural outcomes as indicators of their existence rather than to insist on the prior conscious awareness implied by some self-rating or questionnaire tasks.

#### 12.2.3.1 Is there a Schema "Theory"?

In view of the above argument it is important to consider the question of the status of "schema theory". In the context of comparing motivational and information processing (cognitive) approaches to attribution theory, Tetlock and Levi (1982) review the concept of a "research program". Utilizing a number of the concepts of Lakatos (1970), they state that all scientific research programmes have a "hard core" of basic and unmodifiable assumptions about their subject matter. These assumptions give direction to the programme, but are themselves sacrosanct because of the "negative heuristic" of the programme. That is, rather than confront evidence which appears to refute such assumptions, the researcher is likely to develop "auxiliary hypotheses" to account for the results. The "hard core" is thus well-protected.

In relation to the cognitive research programme (most specifically attribution theory but more widely applicable), the authors argue that the "hard core" is the conceptualization of the perceiver as an "intuitive scientist" who seeks to determine the underlying causes of behaviour. Implicit in this conceptualization, they believe, is the "positive heuristic" of the programme which directs the researcher to ask questions of the form "what type of intuitive scientist is the average person?", and "how well does he perform the information processing tasks?", and so on. That is, implicit in these questions is the assumption that they are the appropriate questions to frame, and moreover, that answers to them can be found. Thus, in a sense, it seems that the "hard core" cannot be falsified because of the nature of the questions it generates.

Tetlock and Levi (1982) question whether "schema theory" is a theory. They argue that, to the extent that it comprises a set of interrelated hypotheses which summarize the known facts and suggest the relationships among those facts and the implications following from them, schema theory is, at least superficially, a theory. However, if a theory is to be a good one, they argue further, it must show internal consistency among its terms, and it must be falsifiable.

Schema theory, as it currently stands, does not appear to be falsifiable. It has clearly stimulated research and related theory, but, say Tetlock and Levi, this has primarily been in the service of enlarging the pool of ideas and findings upon which researchers can draw should they wish to defend its "hard core". To state their position succinctly, the concept of the self-schema "provides a powerful tool for the negative heuristic of the cognitive research program" (ibid, p.76).

Tetlock and Levi would rather view the cognitive research programme not as a theory but as a conceptual framework within which to ask questions about certain cognitive processes. They reach this conclusion not only on the basis of unfalsifiability, but on that of a perceived lack of internal consistency in "schema theory". For example, processing times cannot be predicted because of anomalous results. On the one hand Markus (1977) reports shorter processing times for schema-relevant material, and on the other longer times (Markus and Hamill, 1978, in a paper cited by Tetlock and Levi, 1982; cf. Markus, Hamill and Sentis, 1987). The revision to the methodology suggested above might thus provide an impetus to the reformulation of aspects of the conceptual framework surrounding the hypothesized existence of "schemas".

#### 12.2.4 Implications of "Schematism"/"Self-Construction"

In relation to the argument presented for an underlying cognitive style variable, theoretical and empirical work in related areas add additional support to the evidence adduced here. For example, Linville (1982), in outlining a model relating cognitive structure to affect, argues that complexity of self-representation is an individual difference variable. She operationalized self-complexity as the number of independent conceptual features used

to think about the self. In a trait-sorting task subjects made similarity judgments of various self-roles. Linville argued further that because a more complex self is probably associated with a wider range of experiences it is likely that greater complexity will relate to less variability in moods and self-appraisals. She found support for this hypothesis. Negative feedback had a less negative impact on subjects with a more complex self-structure, and the latter related negatively to mood variability. The likelihood that there is a relationship between complexity of self-structure and positive feedback has of course been raised previously; further investigation could be undertaken using Linville's paradigm.

Another relevant perspective is that of Sorrentino and Short (1986) who, in proposing their theory of uncertainty orientation, argue that "there are many people who simply are not interested in finding out information about themselves or the world, who do not conduct causal searches, who could not care less about socially comparing themselves with others, and who 'don't give a hoot' for resolving discrepancies or inconsistencies about the self" (p. 379). Their theory has its roots in Rokeach's (1960) distinction between open- and closed-minded cognitive styles, but they explicitly point out the parallel with "current notions of category accessibility or cognitive schemata" (Sorrentino and Short, p. 380). In their view an uncertainty-oriented person desires clarity about her/his self or environment. While s/he will seek out new situations in an effort to make sense of the environment, because the certainty-oriented person is aiming to maintain the present state of information, s/he will remain in familiar situations. Empirical work apparently suggests that rather than being a motivational variable, uncertainty-orientation is a cognitive variable. Sorrentino and Short conceptualize it as a general class of self-schemata in the cognitive domain of certain versus uncertain outcomes. In an achievement-related situation, for example, motivation follows upon the arousal of the relevant construct.

Empirical and conceptual relationships between uncertainty orientation and the putative cognitive style variable, self-construction, need to be examined. As an individual difference variable, the latter is likely to relate to the effects of varieties of praise, perhaps especially those evoking a "causal self". If subjects low in self-construction are those who simply "don't give a hoot" for knowing about themselves, then they are unlikely to respond in the same manner as those who carefully construct their personal self. Thus, further to the results relating to the cognitive and other aspects of self-construction reported here, both the perspectives of Linville (and her empirical work) and of Sorrentino and Short strongly imply that the impact on motivation and mood of self-relevant feedback may be variable depending upon an individual's status in relation to self-construction.

#### 12.2.5 The Role of Affect - a Neglected Issue

It was suggested by Kanouse et al (1981) that praise sets in motion a number of processes some of which are cognitive, others motivational. Their argument was as follows - on the one hand praise is likely to direct the individual's attention to various aspects of her/his performance or abilities (or characteristics), and on the other it may initiate a process

of self-evaluation in order to determine whether or not the praise is credible. The affective aspects of these processes have been neglected in the discussion so far, and the empirical work reported in the preceding chapters strongly suggests that affective reactions are an important component in the response to praise.

It is only during the present decade that there has been a general resurgence of interest amongst psychologists in the topic of affect. Increasingly a "cold" cognitive approach is being regarded as inadequate to account for some phenomena. Whereas previously motivation alone was considered the "other side of the cognition/motivation coin" (Srull and Wyer, 1986), the "hot" side, recently Pittman and Heller (1987) have suggested that affect might be the appropriate variable to "heat up" cold cognitive processes. In an overview of their book on motivation and cognition, Sorrentino and Higgins (1986) briefly review the history of cognition and motivation within psychology, arguing that "the present cold approach is, in a sense, a step backward" (p. 8). They advance the notion of the "Warm Look" which would blend "cold" cognitive and "hot" motivational processes. The current emphasis on cognitions as the sole determinants of behaviour is, they believe, inadequate to explain social behaviour, and they would therefore prefer a "warm" model in which motivation and cognition are seen not only as inseparable but as synergistic. Pittman and Heller (1987) favour a model (after Buck, 1985) in which motivation, affect, mood and arousal are regarded as different levels of one underlying hierarchy, and they in fact use the terms "affect" and "motivation" interchangeably. Other contributors to this area have proposed different approaches. Weiner (1986), for example, believes that motivation will be understood only within the context of a detailed analysis of emotions.

Zajonc (1980) can be seen as having inspired some of the renewed interest in the area of affect. He distinguishes between cognition and affect, regarding them as "separable, parallel, and partially independent systems" (Zajonc, Pietromonaco and Bargh, 1982, p. 211). Briefly setting the issue in a historical perspective by distinguishing cognitive theories of emotion in which cognition is seen as underlying the emotional experience, from somatic theories in which it is the expression of emotion which is of interest, Zajonc et al (1982) suggest that there is not an identity in the interrelationship of the two processes. Whereas emotion cannot be experienced without some form of cognitive awareness, its expression does not necessarily require cognitive input. Cognitive processes can give specific meaning to affective states, but sometimes emotion and cognition can become dissociated. When this occurs emotion can be evoked with no clear rationale. In referring to such phenomena as the independence of preference and psychophysical judgments of the same stimuli, the classical conditioning of aversive reactions, and some effects in person perception, the authors present substantial evidence for their view. Further, they present evidence for the possibility that affect may be stored at the level of motor representations and they argue that this level is the one at which to examine the interaction of affect and cognition.

A finding by Ross, Lepper and Hubbard (1975) is consistent with Zajonc's view and it might provide a suggestion as to what was happening in the experiments described in preceding chapters. Ross et al found that even after they were told that their apparent success or failure at a task was rigged, subjects retained the affective response consistent with the original feedback. New information apparently could not make contact with the original affective response. Perhaps the affective consequences of a "labelling" manipulation relate to the positivity of the experience of being considered to have a positive trait. The trait itself might be discarded while the associated affect is retained (cf. Shrauger, 1975).

Other work in this area also highlights the important role of affect. For example, in relation to intrinsic motivation Pretty and Seligman (1984) suggest that negative affect generated by an extrinsic motivational orientation in overjustification experiments might be a basic mediator of the decrease in intrinsic motivation. Pretty and Seligman found that when positive affect was explicitly enhanced, the typical overjustification effect was eliminated. Boggiano and Hertel (1983) also reported data indicating that an intrinsic motivational orientation was associated with a relatively positive mood, while an extrinsic motivational orientation produced a relatively negative mood. Thus affect is clearly bound up with motivational orientations.

Some researchers have been interested in affect specifically in relation to the self-system. Markus and Wurf (1987) outline three intrapersonal functions of the self-concept, an information processing role, a motivational role, and a role as the regulator of affect. Essentially it is a homeostatic model in which the evocation of an affective state which is threatening to the self-concept leads to cognitive or behavioural action. The individual either restructures the working self-concept to support the prevailing self-view or seeks out others who support her/his self-view. How affect is represented in the self-concept is unclear, but Greenwald and Pratkanis (1984), for example, suggest that affect guides the original organization of our self-relevant experiences, some being classed as positive and some as negative. Another view is one in which the current working self may determine affect (e.g., Salovey and Rodin, 1985). At any rate, it is very probable, as Hoffman (1986) argues, that "the self-system is charged with affect" (p. 254). Thus, whatever the storage mechanism, when a self-schema or construct is activated, affective responses should result.

Weiner (1986) also believes that the self plays a fundamental role in human motivation but that the processes underlying that motivation are not extremely complex. On the contrary, "humans cannot possibly be immediately guided by all of the variables that have been suggested as determinants of action" (*ibid.*, p. 310). Rather, "at any particular moment in time, one or two emotions known to the actor will be the prime movers of most actions" (*ibid.*). Perhaps the observed effects on attitudes to, and feelings about, tasks reported here were due to the differential creation of a general mood state by the varieties of praise, which general state then mediated the subjects' task-rating responses. Whether this

putative process is, or can be, independent of a prior cognitive or attributional analysis of the praising event remains to be determined.

Raynor and McFarlin (1986) argue that integration of affective and cognitive processes in one model will be essential to understanding "motivation, action, and self-system functioning". They describe a model in which two types of value are distinguished, information value and affective value, "the distinction between finding out versus feeling good" (Sorrentino and Short, 1986, p. 382). Motivation in this model is a "multiplicative function of value and the expectancy of experiencing it" (Raynor and McFarlin, 1986, p. 328). Affective and information value can be recalled or anticipated and in this way can act to motivate. Both result spontaneously from experiencing the outcomes of action without conscious self-awareness. Within the self-system, however, phenomenal awareness of a source of value associated with an ability, attribute or self-image is required for motivation to result. Affective value in the self-system refers to positive and negative esteem, whereas information value refers to answering the question "who am I?" in terms of abilities, attributes, and self-images.

Raynor and McFarlin believe that their notions of stability and change are consistent with the "dynamic self-concept" of Cantor, Markus, Niedenthal and Nurius (1986) in that the influence of a particular self-image on behaviour will depend on how much positive and negative value it holds for the individual at a given point in time. The analysis of Raynor and McFarlin is also consistent with the argument that certain forms of praise may induce positive feelings which are then reflected in the evaluation of ongoing tasks. However, it is implicit in the notion of a "dynamic self-concept" that such effects would not be carried beyond the specific context. Whether there is any generalization of attitudinal and affective variables over time or across contexts needs to be established before the likely mediating processes can be clarified.

In relation to these points, it might be noted that Whitley (1986) found that informational attributions have an impact on post-performance affect in addition to that of causal attributions and causal dimensions. He considers his results with reference to a distinction between informational attributions and causal attributions (to ability, for example). Whereas the latter reflect the degree to which ability is perceived to have affected the outcome, informational attributions to ability reflect the degree of ability actors perceive themselves as having. Thus the observed effect on post-performance affect implies that conclusions are drawn about the self and evaluations of it resulting in positive or negative affect. On this basis Whitley argues that the concept of informational attribution should be added to the attribution-affect model of Weiner, Russell and Lerman (1979).

#### 12.2.5.1 Can Cognitive and Motivational Theories of Self-Agency be Reconciled?

Affective reactions do seem to be a consistent outcome of the use of praise under some experimental paradigms, but until models are expanded which incorporate the

interrelationship of cognitive and affective reactions and their ultimate relation to behaviour either in the short- or long-term, such effects will remain unpredictable. One model which does integrate cognition and affect is that of Wyer and Srull (1986). Their model of social cognition was briefly described previously. They believe that affect may be a feature of a referent bin header and/or it may be an integral part of one or more representations actually stored in the bin. When information is to be retrieved from Permanent Storage, the Work Space, "a temporary repository of all information that is operated on in pursuit of specific processing objectives" (*ibid.*, p. 323), is searched first. If affective concepts are among the elements that are in the Work Space, they may serve as cues to which bins should be searched for information. Such concepts can also be used as cues on which to base judgments of persons or objects. This model might point the direction for the necessary conceptual development of this area.

However, given that the self and its processes have been a recurrent and unifying theme throughout, it seems more likely that a model incorporating a comprehensive account of self-functioning is more likely to lead to an understanding of the mediating processes underlying the effects of praise. An interpretation of the effects of praise that has been considered, within Deci's (e.g., 1971) attributional framework, was that attributional praise might be seen to establish or alter the subject's locus of action such that behaviour could be seen as either being under the control of external factors or as the result of free choice on her/his part. There is a parallel in some experiments described here with Deci's methods, and his theory provides a framework within which to understand the task-rating effects. The repeated finding of differences among groups in task evaluation is consistent with his model of what is happening when praise is received.

Deci and his colleagues consider the interaction between cognitive attribution of own behaviour and subsequent motivation in relation to that behaviour. Perhaps Deci's (e.g., 1975) analysis could be broadened and his sense of the term "information" examined. For example, in the context of the present project, information about one's personal characteristics was assumed to be an important type of information, different from information about the success of one's behaviour in relation to task or goal-achievement. This idea is also consistent with processes outlined in the previous section (*cf.* Raynor and McFarlin, 1986, and Cantor et al, 1986). Furthermore, different types of information in different contexts might have individually different valences (*cf.* Sorrentino and Short, 1986).

Nevertheless, the self as origin/pawn distinction is likely to be a point of unity across a number of theories, cognitive and motivational, in which the self-system-behaviour relationship is considered. It is a distinction which is integral to the model of this relationship represented by the theory of self-determination of Deci and Ryan (1983). They describe three different styles of "self-regulation", only two of which represent self-determination. The styles are -



- (1) regulation by intrinsic motivation
- (2) regulation by internally-informational events (ones that have been "internalized into one's conflict-free sphere")
- (3) regulation by internally-controlling events (those that have been introjected from external control, and are therefore antagonistic to self-determination).

They argue that cognitive theories (as opposed to motivational theories) fail to make the important distinction between self-regulation by internally-informational events and self-regulation by internally-controlling events. This is an extension of the informational/controlling distinction made in relation to external forces operating on behaviour. Deci and Ryan argue that those events in the third category may be experienced by the individual as self-statements like "Don't you dare do that! You are already too fat" and so on, whereas those in the former two categories result in feelings of self-determination. Conceivably these might include self-conceptualizations. A model which can clarify the relationships among such variables as self-conceptualizations, self-talk, and attitudes/affect in response to ongoing environmental events will have contributed to the understanding of the response to varieties of praise (among many other events).

Indeed, in the latest statement of a conceptual model which has been evolving over more than a decade, Deci and Ryan (1987) come very close to such an all-encompassing model. They present a more elegant clarification of the framework that the present writer was building in the introductory chapters of this thesis, specifying how behaviour regulation can be mediated through events in the self-system. For example, they contrast internally-controlling self-statements like "I have to..." and "I should..." with the more autonomous "I'd find it valuable to..." or "I'd be interested in...". One can envisage the latter flowing from some important self-conceptualization, whereas the former are more likely to relate to the need to project a certain image. The authors also discuss the different effects on behaviour of autonomy-supportive and controlling contexts and events. An analogy might be drawn with varieties of praise which could be classed as one or the other. For example, perhaps attribution of a characteristic would be more autonomy-supportive in comparison to the retrospective attribution of an ability, "I knew you could do it". Deci and Ryan also argue that there is evidence for an individual variable, a general orientation towards or away from autonomous control.

However, if such a model is intuitively compelling, it must still be reconciled with other equally potent theories. For example, in Bandura's (e.g., 1978 a) theory of "reciprocal determinism", the self-system-behaviour relationship is also central. Bandura believes that "psychological functioning involves a continuous reciprocal interaction between behavioral, cognitive and environmental influences" (1978 a, p. 345). As was mentioned in an earlier chapter, he believes that it is not possible to refer to "behaviour" and its "controlling environmental conditions" as though they were fundamentally different events. The two are intimately intertwined.

The self-system in Bandura's theory does not control behaviour either; rather, "self-system" refers to "cognitive structures that provide reference mechanisms and to a set of subfunctions for the perception, evaluation and regulation of behavior" (1978 a, p. 348). Although Bandura's major focus is on "self-efficacy" which he believes to be the unifying feature in all successful behaviour change programmes, it could be argued that his approach is not incompatible with that of Markus, or of Deci.

Indeed, Nurius (1984) in her model of the "working self-concept" has expanded upon Markus' information-processing view of the self-concept in such a way as to potentially unite these perspectives. Nurius is most particularly interested in specifying what "elements and processes are involved in the interaction between self-knowledge and the social environment" (1984, p. 24). For this reason, she regards it as more realistic to think in terms not of a fixed entity as a self-concept but of that aspect of the self-concept which is currently active or "working", what is currently held in thought. She draws a parallel between her conceptualization and the S-O-R model of human behaviour in which the self mediates between the environmental stimulus and the organism's response, using the term "reciprocal determinism" to describe the functional relationship between the self, social forces, and behaviour.

By looking at self-conceptions under varying conditions she was able to support the notion of a working self-concept empirically. Exposing subjects to different experiences, she also found variations in their "possible selves", what they currently regarded as possible that they could achieve, do, or be. Her measurement technique involved asking subjects to select self-descriptors which applied to them in the situation. That is, how subjects saw themselves in one context as compared to another was an important variable. Nurius was also interested in which dimensions were susceptible to environmental influence. She found that perceptions of the current self and expectations for a future self, in addition to preferences, were quite unstable, whereas (as measured by importance ratings) self-referent motives and values were resistant to change. This finding, she argues, "is consistent with recent integrative models of motivation, action and self-system functioning which take the position that the relative stability of the self-system or the self-concept depends on the values component" (Nurius, 1984, p. 175).

Although Nurius did not make the link between selves and behaviour empirically, it is implicit in her discussion that she, like other researchers in this area, is also moving towards a model, both theoretical and practical, which is a synthesis of apparently different perspectives. More recently, Cantor et al (1986) suggested that possible selves "do more than cognitively represent goals and motives within the accessible pool of self-knowledge. They vividly represent the potential of the self actually accomplishing hoped-for end states or avoiding feared or dreaded ones. They depict not only outcome expectancies (and feelings) but also personal efficacy expectations, images, and feelings" (p. 100).

To take the argument further, Bandura's "feelings or expectations of self-efficacy" in relation to specific behaviours might, for example, correspond in operational terms to aspects of Markus' schemas in the sense that having or not having efficacy expectations in a given behavioural domain is likely to affect ongoing interactions with the environment. That is, the contents of a given schema might include such feelings which then determine whether or not certain environmental interactions are undertaken.

Bandura (e.g., 1978 a) also outlines a mechanism of behaviour regulation through self-evaluative consequences such as feelings of self-satisfaction, self-pride, and self-criticism. It could be argued that an analogy might be drawn between the "thought-produced distress" which he envisages occurring over "faulty" behaviour and an observation that one's behaviour was inconsistent with one's self-concept or idea either of how one is or how one wants to be, is out of line with one's private self (Pratkanis and Greenwald, 1985). If there is no schema in a particular area of behaviour, such self-regulatory mechanisms will not be operative, but once a working schema has formed (perhaps through one of the processes mentioned by Bandura) the continuous process of action, revision, action can occur, with behaviour, person and environment reciprocally affecting one another.

There is a problem in attempting to argue that these different theories are not as divergent as they might appear, in that Deci and Ryan (1983), at least, contrast their approach with other approaches. They specifically criticize Bandura. A major difference appears to be Bandura's failure to acknowledge that reinforcements, whether they are tangible objects or self-statements, are operationally separable events that are not necessary for the generation of some behaviours. While Bandura focuses on the idea that people engage in behaviours that they expect will lead to reinforcements, Deci and Ryan believe that intrinsically motivated, self-determined behaviour leads to intrinsically rewarding feelings. Such feelings are not operationally separable, self-administered statements.

They also contrast their theory with a cognitive-attributional analysis, according to which cognitive attributions, intrinsic interest and internal control result from post-behavioural self-attributions. Theories like this are thus, they argue, not theories of motivation since they fail to address the issue of instigation; the operation of intrinsic motivational processes is set in train prior to engagement in the activity. Neither such an approach, nor Bandura's, distinguishes between the two forms of "internal control". Deci and Ryan strongly favour their motivational theory as opposed to any cognitive or behavioural approach, and believe that a motivational analysis that focuses on the differences between informational and controlling events, both external and internal, is necessary to fully understand "self-regulated" functioning. However, to the extent that similar factors are accounted for within different models, it does seem that there are points of potential reconciliation within the theories, although their progenitors might argue against a complete reconciliation. The model that ultimately accounts for the observations reported in this thesis may need to be constructed with elements from a variety of perspectives.

### **12.3 Future Directions: Extension of Empirical Work**

Apart from the need for extended conceptual analysis of the areas of the self, self-schemas, and other self-processes, there are a number of issues to be resolved in the future. Some of these have been raised explicitly at various points, or have been implicit in the questions raised by the empirical work. Specifically, there is a need to relate various self-processes to behavioural outcomes and to behaviour change processes. Further conceptual work in relation to the concepts of "praise" and other "positive verbal statements" is still required, and this will contribute to the more detailed examination of aspects of locutionary content which is also needed. Relevant individual difference variables and their likely interaction with praising locutionary content have only been sketched in the work presented, and these could be more clearly delineated in future research. More information is needed about certain task variables. Finally, the applicability and limitations of research findings in this area await clarification. A brief review of each of these issues follows.

More intensive theoretical work is required to integrate a range of current social psychological theories and theories relating to behaviour change with a model of behaviour which incorporates the differential effects of various praising locutions. For example, further conceptual and empirical work could be carried out on the relationship between the working self, the self-concept's interface with the world of verbal reinforcements, attributional and other forms of praise, and the self-statements of such cognitive-behaviour modifiers as Meichenbaum (e.g., 1977). In addition, models in which behaviour change is seen as a process consisting of several stages (e.g., DiClemente and Prochaska, 1982) might usefully be considered in relation to the most effective use of different forms of praise.

According to Markus and Wurf (1987) there is a need to study self-presentation over time. They assert that few researchers have undertaken such a process analysis though Darley and Fazio (1980) have theorized about it. In addition, present understanding of the interaction between self-constructs and self-presentation is inadequate: this relationship between the private and public aspects of self needs further conceptual analysis and empirical investigation. Such work could be combined with the research referred to previously on the effects of praise on attitudes and affect over time and across situations. It is also important to establish whether these effects might be potential mediators of longer-term behavioural change in response to apparently ineffective praising locutions.

To extend the work in these areas may mean accommodating the fact that individuals will have acquired and developed various self-schemas through many different experiences, and that there are likely to be subtle differences among individuals in their apparently identical schemas. Very sensitive tools need to be devised for the measurement both of the existence of schemas, and of their properties. For this reason some pilot work along the lines of that suggested previously might prove valuable. It will be recalled that an "inversion" of the usual approach to measuring schemas was envisaged.

The work presented here has not contributed to a clarification of the relationships among various kinds of positive verbal statement (e.g., approval, appreciation, encouragement, compliments, praise), and this conceptual task could be undertaken in the future. The conceptual and functional similarities and differences of the subcategories of praise identified here need to be established, and the amount, or type, of information incorporated in various praising locutions awaits objective assessment. This work, in conjunction with further evaluation of the validity of the praise classification system developed, could ensure that locutions were better able to be equated for experimental purposes. That is, a variety of locutions need assessment on a variety of dimensions.

For example, it was suggested initially that the meaning of the locution to the recipient of praise was likely to be important. The present research, however, has shown that a range of other specific variables could be investigated. These include the focus of attention (towards self or other) engendered by the praising locution, the importance to the self-concept of its informational content, and also the importance to the individual of the outcome of the implied behaviour.

It has not been determined whether the task-rating effects hold for praise other than attributional praise, but given the possibility that there are different mediating mechanisms for the different varieties of praise, an answer to this question needs to be pursued. Work conducted broadly within Deci's paradigm (e.g., Ryan et al, 1983; Harackiewicz et al, 1987) certainly suggests that other evaluative statements result in differential responses to tasks.

The implications for effects of praise on individuals of the apparent cognitive style variable, "Self-Construction", requires further investigation. Clearly some variable which is conceptually close to it does exist. A scale to measure such a variable needs to be refined and conceptual development in the area of the interrelationships between Self-Construction and a range of other self-variables including self-awareness, self-monitoring and attributional style, would be valuable. These other variables and their interaction with responses to the information conveyed in praising locutions could be the subject of future studies.

The importance of ego-involvement also needs to be examined as situations differ in the amount of ego-involvement they evoke (Breckler and Greenwald 1986). That individuals might differ in their predisposition to become involved at all needs investigation too. The variable which was identified by Harackiewicz and her colleagues (e.g., Harackiewicz et al, 1985), competence valuation, could also be considered in its interaction with task variables.

Clearly the nature of the specific tasks used may be an important variable. For example, as reported in Chapter 4, Lintner and Ducette (1974) found that responsiveness to praise differed between an ambiguous coding task and an academic reading task. It is essential for the researcher into praise effects to know more about the nature of tasks as

perceived by subjects, and relevant tasks which more clearly meet all the criteria emerging from the present, and previous, research need to be devised.

Some refinement and replication of the experimental studies undertaken here is warranted by the results reported. Were it to be established that different affective and/or attitudinal reactions could be achieved through varying locutions, and that there was a clear and predictable relationship between these reactions and subsequent behaviour, the range of situations in which such knowledge could be applied would need to be determined. The issue of the relationship between the internal and external validities of studies undertaken in the area of the effects of praise on behaviour is a research topic in its own right. However it is approached, investigation into the application of the effects of varying praising locutions in clinical, work, health, educational, home and other everyday social settings is essential.

In relation to the results obtained in the Behaviour Rating study, further investigations are also warranted, including a replication of the study with a respondent group other than student nurses. Should a relationship between the perception of behaviour choice and the actual likelihood that behaviour is undertaken obtain, the result also has practical implications for behaviour change and control measures employed in various settings. It may be important to determine which category a given desired behaviour falls into before an action plan can be devised to initiate it. Thus it may be helpful to know that, for most people, being co-operative is regarded as being a matter of choice - if they want to enough, then they can do it. In this case a professional might focus on increasing the individual's level of motivation. Certainly an attributional or labelling strategy would be appropriate. On the other hand, to assist individuals to be more creative or perceptive will likely require a different approach. This could involve cognitive-behaviour modification strategies or other specific training.

In conclusion, further research into the dimensions of different categories of behaviour as they relate to the efficacy of varieties of praise is needed. This seems to be particularly important in view of the assertions of Wegner and Vallacher (1980) that "the self-system is only a weak tool for understanding and manipulating biological realities" (p. 264) and that self-system manipulation is only powerful (if at all) in relation to social interaction, social conventions, social attraction and intergroup relations. Given its widespread use, and the belief in the efficacy of praise among various groups, if the findings reported here can be validated then behaviour modifiers, parents and educators would benefit from specific knowledge about its finer details. Only then will the effective application of the varieties of praise be attainable.

**APPENDICES**

**APPENDIX 1 (STUDY 1)****Appendix 1.1: Experimental Tasks for Study 1****Appendix 1.1.1: Anagram Task**

On the following page are 3 lists of anagrams (jumbled words). Each anagram is followed by a space in which you can write its solution. For example:

C H A R I (is the word)    chair  
 .....

The first list contains 4-letter anagrams, the second 5-letter anagrams (as in the example), and the third contains 6-letter anagrams. Each anagram has only one solution. Try to solve each one in turn. If you have no questions, turn the page and begin.....

**LIST 1**

1. L B E L.....
2. K M L I.....
3. I Y C T.....
4. Y R E A.....

**LIST 2**

5. E G U J D.....
6. E O C V I.....
7. N U F Y N.....
8. E O U H S.....

**LIST 3**

9. S N D Y A U.....
10. W Z A R D I.....

**Appendix 1.1.2: Consequences Task****WHAT IF.....PEOPLE COULD BECOME INVISIBLE?**

If people could become invisible at will, what would the consequences be? Our individual lives would be affected, and so might the organization of societies.

I want you to imagine as many consequences as you can of people having the ability to become invisible at will. Write down any possible consequences you can think of, however strange they seem to you. Be as imaginative as you can.

If you have no questions, turn the page and begin..... (*one blank page was attached*)  
 .....

**Appendix 1.1.3: Twenty-five Dot Problem**

On the following page is a series of 25-dot matrices. The task is to find a way to connect these 25 dots using 8 straight lines without taking pen from paper.



You may make as many attempts (or as few) as you wish - if you use up all the matrices, please ask for some more.

There is more than one solution to this problem. As I am interested in your solution strategy, please feel free, if you think you have reached a solution, to try to find another one. Be sure to place a tick beside those solutions which you think are correct.

If you have no questions, turn the page and begin.....

• • • • •  
 • • • • •  
 • • • • •  
 • • • • •  
 • • • • •

*(initially 9 matrices on one sheet were given to the subject, who could ask for further sheets as required)*

#### Appendix 1.1.4: Post-Experiment Questionnaire

Psychologists have found that experimental subjects often form hypotheses about what the experimenter wants them to do. I am interested in any comments you would like to make about the experiment. For example, did you form any ideas about what the experiment was designed to investigate? What sorts of things were you thinking as you worked on the different tasks? Feel free to make any comments in the space provided. *(4 lines provided)*

Below are some rating scales which I would like you to complete. Firstly, I would like to know whether you think I had any expectations about how well you would perform in the experiment. Circle "1" if you think I expected you to do badly, and "9" if you think I expected you to do well. Circle "5" if you think I had moderate expectations about your performance. Use the points in between to indicate just what you think I expected. If you really have no idea what I expected, do not circle any number.

The experimenter 1 2 3 4 5 6 7 8 9 The experimenter  
 expected me to do badly expected me to do well

Now I would like you to consider the question of whether you think I made any judgment about you in relation to the personal characteristic of "persistence". Use the 9 points of the scale to indicate whether you think that I judged you to have the characteristic of "persistence". If you really have no idea whether I made a judgment or not, do not circle any number.

The experimenter made a judgment 1 2 3 4 5 6 7 8 9 The experimenter made a judgment  
 that I am not at all persistent that I am very persistent

Finally, I would like you to think about whether you consider yourself generally to be a persistent person. Once again, use the 9 points of the scale to indicate your judgment about

yourself. If you really are unable to make a judgment about yourself, do not circle any number.

I am not generally 1 2 3 4 5 6 7 8 9 I am generally  
a very persistent person a very persistent person

### **Appendix 1.2: Instructions to Judges**

Below is a series of items which describe the sorts of experiences that you might have had as you were growing up. I am adapting a scale using items of this sort, and I would like you to rate the alternative answers for me. For example:

When you asked your mother to help you with your homework, she usually

1. Helped you with your homework.

negative 1 2 3 4 5 6 7 positive  
neutral

2. Said you should be able to do it yourself.

negative 1 2 3 4 5 6 7 positive  
neutral

What I want you to do is to consider each answer from the point-of-view of the effect of the described outcome on you, that is, would you feel that you had received a positive response, a negative response, or one that was not clearly positive or negative. Use the seven points of the scale to judge each outcome in these terms.

Thank you for your help.

### Appendix 1.3: Adapted Reinforcement History Questionnaire

Note: In this questionnaire positive responses are designated by a "P" in brackets, negative by an "N" and neutral by an "Ne". These notations did not, however, appear on the version completed by respondents. The questionnaire is scored by adding the marked items into the specified categories, positive, negative and neutral.

#### REINFORCEMENT HISTORY QUESTIONNAIRE

This questionnaire contains a series of items which describe the sorts of experiences you might have had as you were growing up. Each item refers to an incident; after each incident some possible outcomes are described. Read each item carefully and then look at the 4 alternatives below it. You are to circle the letter referring to one incident, the one that describes what usually happened to you.

Here is an example:

When you asked your mother to help you with your homework, she usually

- a. Helped you with your homework (P)
- b. Told you that she was too busy (Ne)
- c. Said you should be able to do it yourself (N)
- d. Does not apply.

It is unlikely that any alternative describes what always happened to you. What I am interested in is what happened to you most often when you asked your mother to help you with your homework. Thus you would circle "a" if your mother did usually try to help you with your homework when you asked her to; you would circle "b" if she usually told you she was too busy to help; and you would circle "c" if she usually said that you should be able to do it yourself when you asked her for help. Of course you may never have asked your mother to help with your homework, because you didn't live with your mother, because you could always do your homework on your own, because you knew that your brother was bound to be more helpful, or for any one of a number of reasons. If you never did ask your mother's help with homework, for whatever reason, then you would circle "d", "does not apply".

There are 40 items in this questionnaire; they are similar in format to the example. For each item circle the alternative which best fits what happened to you. In every case you will have the opportunity of circling "does not apply". Try to use this alternative only if you genuinely never had this kind of experience. Please answer all the items. If you have no questions, turn the page and begin.

1. When there were friends of the family visiting your house, your mother usually
  - a. Complimented you on your good manners (*P*)
  - b. Lectured you on your poor manners (*N*)
  - c. Didn't mind much how you acted (*Ne*)
  - d. Does not apply.
2. When you told your father something new you learned at school, he usually
  - a. Seemed pleased with how much you had learned (*P*)
  - b. Made you feel that you really hadn't learned much (*N*)
  - c. Didn't mind much one way or the other (*Ne*)
  - d. Does not apply.
3. When you got a good mark on your school report in something, your friends usually
  - a. Looked up to you for being clever (*P*)
  - b. Made fun of you for being the teacher's pet (*N*)
  - c. Didn't mind much one way or the other (*Ne*)
  - d. Does not apply.
4. When you broke or spilled something at home, your mother usually
  - a. Told you that it was an accident and couldn't be helped (*P*)
  - b. Told you that you were clumsy (*N*)
  - c. Didn't say anything (*Ne*)
  - d. Does not apply.
5. When you were learning to ride a bike, or swim, or dance, or play sports, your father usually
  - a. Seemed pleased with the way you were learning it (*P*)
  - b. Didn't comment one way or the other (*Ne*)
  - c. Made fun of the mistakes you were making (*N*)
  - d. Does not apply.
6. When you brought home your school report, your father usually
  - a. Acted pleased with your marks (*P*)
  - b. Didn't mind much what kind of marks you got (*Ne*)
  - c. Acted displeased with your marks (*N*)
  - d. Does not apply.
7. When you asked your friends to share their toys, lollies, or other things, they usually
  - a. Wanted to share with you (*P*)
  - b. Paid little attention to what you asked (*Ne*)
  - c. Wouldn't share anything with you (*N*)
  - d. Does not apply.

8. When you tried hard the teacher usually
- Seemed very glad that you tried (*P*)
  - Treated you like everyone else (*Ne*)
  - Made you feel that trying hard wasn't much help if you didn't give the right answer (*N*)
  - Does not apply.
9. When you asked your friends for information, they usually
- Said you should know the answer yourself (*N*)
  - Were glad to answer your questions (*P*)
  - Didn't seem to know the answer (*Ne*)
  - Does not apply.
10. When you brought home your school report, your mother usually
- Acted displeased with your marks (*N*)
  - Acted pleased with your marks (*P*)
  - Didn't mind much what kind of marks you got (*Ne*)
  - Does not apply.
11. When you asked for toys, lollies, or other things, your father usually
- Acted as if you asked for more than you should get (*N*)
  - Gave you whatever you wanted (*P*)
  - Paid little attention to what you asked (*Ne*)
  - Does not apply.
12. When you tried to behave yourself at school, the teacher usually
- Got annoyed with you anyway (*N*)
  - Seemed very glad that you were trying (*P*)
  - Treated you like everyone else (*Ne*)
  - Does not apply.
13. When your friends were choosing sides for a game, they usually
- Didn't choose you until almost last (*N*)
  - Just picked without thinking too much (*Ne*)
  - Almost always picked you first (*P*)
  - Does not apply.
14. If you offered to help the teacher around the classroom, she would let you help her
- Never (*N*)
  - Sometimes (*Ne*)
  - Often (*P*)
  - Does not apply.

15. When you asked for toys, lollies, or other things, your mother usually

- a. Acted as if you asked for more than you should get (*N*)
- b. Paid little attention to what you asked (*Ne*)
- c. Gave you whatever you wanted (*P*)
- d. Does not apply.

16. When you visited a friend's house, he usually told his mother or father

- a. That you were just some kid from school (*N*)
- b. He made no comment about you (*Ne*)
- c. That you were a great friend (*P*)
- d. Does not apply.

17. When your mother explained something new to you, she usually

- a. Didn't mind much how quickly you learnt it (*Ne*)
- b. Complimented you on learning it pretty quickly (*P*)
- c. Criticized you for not learning it quickly enough (*N*)
- d. Does not apply.

18. When you had a spelling lesson at school, your teacher usually

- a. Didn't notice you more than any of the others (*Ne*)
- b. Told you that you did a good job (*P*)
- c. Told you that you did not do a good job (*N*)
- d. Does not apply.

19. When your father explained something new to you, he usually

- a. Didn't mind much how quickly you learnt it (*Ne*)
- b. Complimented you on learning it pretty quickly (*P*)
- c. Criticized you for not learning it quickly enough (*N*)
- d. Does not apply.

20. When you asked your father for some information, he usually

- a. Didn't seem to know the answer (*Ne*)
- b. Was glad to answer your questions (*P*)
- c. Said you should know the answer yourself (*N*)
- d. Does not apply.

21. When you played games with your friends, they usually

- a. Let you alone to do what you wanted (*Ne*)
- b. Looked up to you to be their leader (*P*)
- c. Told you to be quiet and didn't give you much to do (*N*)
- d. Does not apply.

22. When you asked your mother for some information, she usually

- a. Didn't seem to know the answer (*Ne*)
- b. Said you should know the answer yourself (*N*)
- c. Was glad to answer your questions (*P*)
- d. Does not apply.

23. When you tried to fix a toy, game, sports equipment, or something else, your father usually

- a. Didn't say anything much (*Ne*)
- b. Told you how you could do it much better (*N*)
- c. Told you that you were doing a good job (*P*)
- d. Does not apply.

24. When you did art and crafts (like paint, draw, sew or make things with clay), your friends usually

- a. Didn't notice particularly how you were doing (*Ne*)
- b. Told you that you were not doing a good job (*N*)
- c. Told you what a nice job you were doing (*P*)
- d. Does not apply.

25. When you had a reading lesson at school, your teacher usually

- a. Told you that you did a good job (*P*)
- b. Told you that you did not do a good job (*N*)
- c. Didn't notice particularly how you did (*Ne*)
- d. Does not apply.

26. When you had an arithmetic lesson at school, your teacher usually

- a. Told you that you did a good job (*P*)
- b. Told you that you did not do a good job (*N*)
- c. Didn't notice particularly how you did (*Ne*)
- d. Does not apply.

27. When you were doing chores at home, your father usually

- a. Told you that you were doing a pretty good job on them (*P*)
- b. Told you that you were not doing a good job (*N*)
- c. Didn't comment one way or the other (*Ne*)
- d. Does not apply.

28. When you were doing chores at home, your mother usually

- a. Told you that you were doing a pretty good job on them (*P*)
- b. Told you that you were not doing a good job (*N*)
- c. Didn't comment one way or the other (*Ne*)
- d. Does not apply.

29. When you tried to fix a toy, game, sports equipment, or something else, your friends usually

- a. Felt that you were doing a good job (*P*)
- b. Didn't say anything much (*Ne*)
- c. Made fun of how clumsy you were (*N*)
- d. Does not apply

30. When you lost something, your mother usually

- a. Acted pretty understanding (*P*)
- b. Didn't say anything one way or the other (*Ne*)
- c. Acted pretty angry (*N*)
- d. Does not apply

31. When you lost something, your father usually

- a. Acted pretty understanding (*P*)
- b. Didn't say anything one way or the other (*Ne*)
- c. Acted pretty angry (*N*)
- d. Does not apply.

32. When you got into an argument or a fight, your friends usually

- a. Thought you could take care of yourself (*P*)
- b. Didn't say much about it (*Ne*)
- c. Thought you were sure to lose (*N*)
- d. Does not apply.

33. When you did art and crafts at school (like paint, draw, sew or make things with clay), your teacher usually

- a. Told you that you did not do a good job (*N*)
- b. Told you that you did a good job (*P*)
- c. Didn't notice particularly how you did (*Ne*)
- d. Does not apply.

34. Your mother usually felt

- a. That you had no judgment when it came to clothes (*N*)
- b. That you knew what kind of clothes were nice (*P*)
- c. That what kind of clothes you liked wasn't important to her (*Ne*)
- d. Does not apply.

35. If you raised your hand a lot, your teacher usually

- a. Made you feel that you wanted to talk too much (*N*)
- b. Praised you for having a lot to say (*P*)
- c. Treated you like everyone else (*Ne*)
- d. Does not apply.



36. If you came home in dirty clothes after sport or after particularly rough play, your mother usually seemed
- Pretty angry (*N*)
  - Pretty understanding (*P*)
  - Not to mind much one way or the other (*Ne*)
  - Does not apply.
37. When you saw someone cheating at school and told the teacher, your friends
- Didn't like you for what you did (*N*)
  - Didn't comment one way or the other (*Ne*)
  - Said that you did the right thing (*P*)
  - Does not apply.
38. If you came home in dirty clothes after sport or after particularly rough play, your father usually seemed
- Pretty angry (*N*)
  - Not to mind much one way or the other (*Ne*)
  - Pretty understanding (*P*)
  - Does not apply.
39. If you played around during class at school, your teacher usually
- Got angry (*N*)
  - Didn't particularly notice you (*Ne*)
  - Made you feel that you were doing the wrong thing, but in a nice way (*P*)
  - Does not apply.
40. Most of the time your teachers seemed to
- Not like you very much (*N*)
  - Feel about you much the way they felt about the other kids (*Ne*)
  - Like you (*P*)
  - Does not apply.

**Appendix 1.4: Causal Dimension Scale**

On each of the following pages a situation is described.

For example:

SITUATION: You are involved in a car accident.

I am interested in what you feel the cause of this situation would be if it happened to you.

While events may have many causes, I want you to pick only one, the major cause or reason for this situation if it happened to you. Please write the cause or reason in the space provided below the situation.

For example:

CAUSE/REASON:                      I was inattentive

.....  
 .....

Once you have written in the cause or reason for this situation if it happened to you, I want you to think about this cause and rate it on a series of scales. Each scale has 9 points. I want you to circle one number, the one that best indicates your feeling about this cause.

For example:

1. Is the cause something that:

Reflects an aspect of the situation    ① 2 3 4 5 6 7 8 9    Reflects an aspect of yourself

If you feel that your being inattentive in that situation would definitely reflect an aspect of the situation rather than of yourself, circle "1" (as shown). If you feel that being inattentive would probably reflect an aspect of the situation, circle "2", "3" or "4", depending on how strongly you feel this. If you are uncertain whether being inattentive in the situation described reflects an aspect of that situation or an aspect of yourself, circle "5". If you feel that being inattentive in the situation definitely reflects an aspect of yourself, circle "9". Depending on how strongly you feel that the cause reflects an aspect of yourself, use "6", "7" or "8". Thus you should use the 9 points of each scale to best represent how you feel about the cause you have given for the situation described (in the example, "I was inattentive"). Circle only one number for each scale. There are 9 scales similar to the one used in the example. Rate your cause on each of these 9 scales.

When you have finished rating one cause or reason, turn the page and go on to the next situation. There are 12 situations in all. Try to vividly imagine yourself in each of the situations before you write down the major cause or reason if it happened to you.

To summarize, I want you to:

- (1) Read each situation in turn and vividly imagine it happening to you.
- (2) Decide what you feel would be the major cause of the situation if it happened to you.
- (3) Write that cause in the space provided.
- (4) Rate that cause on each of the 9 scales below it.
- (5) Go on to the next situation.

Remember, I am interested in your impressions and your opinions and feelings, so don't worry about what anyone else might think. Please complete all the situations.

If you have no questions, turn the page and begin.

.....

SITUATION 1: You meet a friend who compliments you on your appearance.

CAUSE/REASON:.....

1. Is the cause something that:

Reflects an aspect of the situation	1 2 3 4 5 6 7 8 9	Reflects an aspect of yourself
--	-------------------	-----------------------------------

2. Is the cause:

Uncontrollable by you or other people	1 2 3 4 5 6 7 8 9	Controllable by you or other people
--	-------------------	--

3. Is the cause something that is:

Temporary	1 2 3 4 5 6 7 8 9	Permanent
-----------	-------------------	-----------

4. Is the cause something:

Unintended by you or other people	1 2 3 4 5 6 7 8 9	Intended by you or other people
--------------------------------------	-------------------	------------------------------------

5. Is the cause something that is:

Outside of you	1 2 3 4 5 6 7 8 9	Inside of you
----------------	-------------------	---------------

6. Is the cause something that is:

Variable over time	1 2 3 4 5 6 7 8 9	Stable over time
--------------------	-------------------	------------------

7. Is the cause:

Something about others	1 2 3 4 5 6 7 8 9	Something about you
---------------------------	-------------------	------------------------

8. Is the cause something that is:

Changeable	1 2 3 4 5 6 7 8 9	Unchanging
------------	-------------------	------------

9. Is the cause something for which:

No-one is	1	2	3	4	5	6	7	8	9	Someone is
responsible										responsible

SITUATION 2: You have been looking for a job unsuccessfully for some time  
(for this and all subsequent situations the format and rating scales were identical to those for the first situation )

SITUATION 3: You become very rich.

SITUATION 4: A friend comes to you with a problem and you don't try to help.

SITUATION 5: You give an important talk in front of a group and the audience reacts negatively.

SITUATION 6: You do a project that is highly praised.

SITUATION 7: You meet a friend who acts in a hostile manner towards you.

SITUATION 8: You can't get all the work done that others expect of you.

SITUATION 9: Your girlfriend/boyfriend/spouse has been treating you more lovingly than usual.

SITUATION 10: You apply for a position that you want very much (e.g., a good job, a place in your chosen course at uni.) and you get it.

SITUATION 11: You go out on a date and it goes badly.

SITUATION 12: You get an increase in salary.

*This questionnaire is scored according to this key:*

*Good achievement situations - 3, 10, 12.*

*Good affiliation situations - 1, 6, 9.*

*Bad achievement situations - 2, 5, 8.*

*Bad affiliation situations - 4, 7, 11.*

*Locus of causality items - 1, 5, 7.*

*Stability items - 3, 6, 8.*

*Controllability items - 2, 4, 9.*

*Totals are calculated for each category.*

## Appendix 1.5: Correlations between Experimental Variables and Questionnaire Variables

Table A1.1 shows Pearson r correlation coefficients between selected experimental variables and all questionnaire variables. The following abbreviations apply:

### Experimental Variables

Avertime=the average of the times spent on the Consequences task and on the Matrix task.  
E's Expec=the subject's rating of the experimenter's judgment as to how well s/he would perform at the tasks.

E's Persist=the subject's rating of the experimenter's judgment of her/his persistence.

Persist=the subject's rating of her/himself as a generally persistent person.

Matrices=number of matrices attempted.

Conseq=number of distinctly different consequences produced.

Matr.time=time spent on the Matrix task.

Invis.time=time spent on the Consequences task.

### Causal Dimension Scale Variables

Good acht Loc=score for locus of causality of achievement situations with positive outcomes.

Good acht Stability=score for stability of achievement situations with positive outcomes.

Good acht Control=score for controllability of achievement situations with positive outcomes.

Bad acht Loc=score for locus of causality of achievement situations with negative outcomes.

Bad acht Stability=score for stability of achievement situations with negative outcomes.

Bad acht Control=score for controllability of achievement situations with negative outcomes.

Good affil Loc=score for locus of causality of affiliation situations with positive outcomes.

Good affil Stability=score for stability of affiliation situations with positive outcomes.

Good affil Control=score for controllability of affiliation situations with positive outcomes.

Bad affil Loc=score for locus of causality of affiliation situations with negative outcomes.

Bad affil Stability=score for stability of affiliation situations with negative outcomes.

Bad affil Control=score for controllability of affiliation situations with negative outcomes.

Good Loc=total score (achievement+affiliation) for locus of causality of all positive outcomes.

Good Stability=total score for stability of all positive outcomes.

Good Control=total score for controllability of all positive outcomes.

Bad Loc=total score for locus of causality of all negative outcomes.

Bad Stability=total score for stability of all negative outcomes.

Bad Control=total score for controllability of all negative outcomes.

### Reinforcement History Questionnaire Variables

Bad non-null=the proportion of negative experiences to total number of non-null ("does not apply" eliminated) experiences.

Good non-null=the proportion of positive experiences to total number of non-null experiences.

Bad gb=the proportion of negative experiences to the total of positive plus negative experiences.

Good gb=the proportion of positive experiences to the total of positive plus negative experiences.

Table A1.1 (over page): Correlations between experimental variables and questionnaire variables.

### Significance Levels

Significant correlations are indicated in the following manner:

$p < .05$  is shown in *italics*.

$p < .01$  is shown in **bold**.

$p < .001$  is shown underlined.

Variable	Av. time	E's Expec	E's Persis	Persist	Matrices	Conseq	Matr.time	Invis.time
Good achr Loc	-.084	-.134	.074	.206	.067	-.217	-.144	-.131
Good achr Stability.	.154	.297	.173	.164	.387	.492	.119	.075
Good achr Control	-.028	-.198	.134	.019	.037	-.070	-.121	-.039
Bad achr Loc	-.041	.091	.148	-.352	.068	-.159	-.023	-.165
Bad achr Stability	-.251	-.147	.061	-.320	-.016	-.300	-.445	-.111
Bad achr Control	.295	-.103	.089	-.103	.401	.216	.406	.029
Good affil Loc	.457	-.349	.252	.282	-.028	.361	.367	.233
Good affil Stability	.260	.268	.122	.078	.119	-.035	.179	.258
Good affil Control	.453	-.113	.045	.254	-.042	.060	.482	.105
Bad affil Loc	.225	-.152	.149	.252	-.139	.168	-.056	-.213
Bad affil Stability	.278	.287	.299	-.208	-.029	.149	-.065	.453
Bad affil Control	.417	.118	.351	-.145	.077	.402	.273	.437
Good Loc	.177	-.247	.186	.305	.007	.002	.104	.020
Good Stability	.295	.415	.219	.183	.389	.373	.213	.229
Good Control	.235	-.201	.118	.156	.002	-.015	.187	.032
Bad Loc	.095	-.014	.202	-.135	-.026	-.031	-.049	-.010
Bad Stability	.102	-.124	-.521	-.143	-.036	-.052	-.096	.160
Bad Control	.451	-.169	-.563	.005	.169	.325	.463	.268
Bad non-null	.259	-.279	-.310	-.176	-.086	.102	.111	.353
Good non-null	-.007	.054	.036	.391	.125	-.180	.003	-.312
Bad gb	.160	-.277	-.139	-.265	-.141	.028	-.008	.324
Good gb	-.080	.319	.154	.248	.138	.041	.082	-.268

**Appendix 1.6: Causal Dimension Scale Variables Correlated with Reinforcement History Questionnaire Variables**

Table A1.2 shows the correlations between scores derived from the two questionnaires.

**Table A1.2: Correlations between CDS variables and RHQ variables.**

Variable	Good/nn	Bad/nn	Good/gb	Bad/gb	Neutral
Good acht Loc	<i>.575</i>	-.144	<i>.340</i>	-.326	<i>-.572</i>
Good acht Stab	<i>.385</i>	-.324	<b>.460</b>	-.432	-.255
Good acht Control	<i>.390</i>	-.050	.190	-.144	-.415
Bad acht Loc	.210	-.240	.170	-.136	-.104
Bad acht Stab	.196	.108	-.211	.131	-.284
Bad acht Control	.045	-.018	.019	-.044	-.040
Good aff Loc	.326	.030	.073	-.030	-.388
Good aff Stab	.027	.050	-.082	.043	-.062
Good aff Control	<i>.398</i>	.039	.095	-.007	<b>-.474</b>
Bad aff Loc	.248	.044	-.193	.084	-.306
Bad aff Stab	.082	.093	.080	.098	-.145
Bad aff Control	-.169	.079	.115	.116	.148
All Good Loc	<i>.577</i>	-.096	.288	-.260	<i>-.601</i>
All Good Stab	<i>.327</i>	-.225	.313	-.319	-.245
All Good Control	<b>.490</b>	-.014	.180	-.104	<b>-.554</b>
All Bad Loc	.307	-.166	.026	-.061	-.256
All Bad Stab	.124	<i>.409</i>	-.286	.242	-.369
All Bad Control	-.075	<i>.396</i>	-.219	.199	-.137

Note: Significant correlations are indicated in the following manner -

p < .05 is shown in *italics*.

p < .01 is shown in **bold**.

p < .001 is shown underlined.





## Appendix 2.2: Experiments 2 and 3 - General Instructions

### Games' Ratings: General Instructions

There are 4 different games for you to play on the BBC computer. After each game I will ask you to fill out a short questionnaire about that game. To get a game PRESS THE SPACE BAR, the long black key at the front of the keyboard. You may leave a game at any point by PRESSING THE BREAK KEY at the top right-hand corner of the keyboard. While you are playing the games you may be asked to enter information into the computer. After you have done so, always PRESS RETURN, 2 rows up on the right-hand side of the keyboard. If you want to change what you have just typed you may do so by using the DELETE key, just below RETURN - but you must do so BEFORE PRESSING RETURN.

### THE GAMES

#### Alien Blaster

The aliens are invading your system and you have to blast them before they land and colonize earth. Only 5 have to land to take over.

To move RIGHT - PRESS 2

To move LEFT - PRESS 1

To FIRE - PRESS 0

Your score is displayed at the top of the screen. If you play more than one game, your best score so far is also displayed.

#### Maze

Your task is to find your way into the maze and out of the top of it. You are represented by a purple dot. You can move by PRESSING THE ARROW KEYS on the right-hand side of the keyboard - your direction is indicated by the direction of the arrow. You may retrace your steps, but if you do you will not be able to see where you are. Your score will be displayed continuously at the top of the screen. Both time and number of steps are taken into account - number of steps is most important.

If you should run into the sides of the maze, a warning tone will sound. And when you get to the end you will be rewarded with a victory tune.

#### Word-search

The object is to complete the story by filling in the gaps with the correct words. Each time you guess a word correctly it will appear in yellow in the right place and the computer will tell you how many words you have found and how many more there are to find. If you guess incorrectly the computer will simply tell you that the word was not hidden. Note that you have to wait about 30 seconds for the story to be displayed on the screen - but it will come! Remember that while you are typing in each word you may make corrections using DELETE, and that after each word you must PRESS RETURN.

Zombies

You are in a graveyard at midnight. You must evade the zombies for as long as possible by luring them into open graves. You can choose any number of zombies between 10 and 50 - of course, the more there are, the more difficult it is to escape.

To move LEFT - PRESS z  
 RIGHT - PRESS x  
 UP - PRESS \*  
 DOWN - PRESS ?

Appendix 2.3: Cloze Task StoryMOUSE

In the roots of a giant ..... there once lived a family of ..... It was a huge ....., and they lived in semi-darkness, for the tree's thick ..... hid the ..... from them, and they went about their business hardly ever venturing out ..... the ..... When the ..... appeared they slept, and when the ..... tried to light their ..... home they worked, poking their ..... faces into ..... to see if there was anything edible there. They gathered ..... and bits of fluff and twigs, which ..... moved from one place to another. They were always ..... about. Among these ..... was one who kept hearing a ..... noise ..... his .....

Appendix 2.4: Games' Rating Scales

Name.....

GAMES RATING

In order to assist me to select suitable games for my study, I would like your reactions to, and feelings about,....., the game you have just played. On this and the following page is a series of statements, each one followed by a 7-point scale. For example:

Playing this game was fun.

disagree 1 2 3 4 (5) 6 7 agree  
 strongly strongly

In this example, the student has circled "5" to indicate that s/he agrees fairly strongly that playing the game was fun.

For each statement I would like you to circle a number to indicate to what extent you agree with the statement. Circle "1" if you strongly disagree, "2" if you disagree fairly much, and so on up to "7" which indicates that you strongly agree with the statement. Please try to avoid "4", the "uncertain" point, if you possibly can.



APPENDIX 3.1 (EXPERIMENT 4)Appendix 3.1.1: Preliminary QuestionnairePerson Perception - Preliminary Questionnaire

When we form impressions of other people we often feel confident that we can say what sorts of characteristics or abilities they have even though we have very little information. There may be some things about which we feel more confident when we make such "first impression" judgments than others. For example, we might feel certain (a) that we can almost always judge immediately if a person is honest, and feel equally certain (b) that we are almost never able to judge accurately if a person plays the piano.

I am interested in your ideas of (a) and (b) above. That is, I would like you to write out up to five characteristics or abilities that you feel you can almost always make an immediate judgment about (a). These can be anything about a person ranging from characteristics to specific behaviour tendencies. Then I would like you to write out up to five characteristics or abilities that you feel you are almost never able to judge accurately (b). Again, these can be anything at all about a person. Please use the back of the page if you haven't enough space.

(a) Can judge.....

*(space)*

(b) Can't judge.....

*(space)*

Thank you very much for your help.

## Appendix 3.1.2: Person Perception Questionnaire (1)

### Person Perception Questionnaire

When we form impressions of other people we often feel confident that we can say what sorts of characteristics, attributes or abilities they have even though we have very little information. There may be some things about which we feel more confident when we make such "first impression" judgments than others. For example, we might feel certain that we can judge immediately if a person is honest, and feel equally certain that we are almost never able to judge a person's hobbies accurately.

Below is a list of person characteristics, attributes and abilities. I am interested in your idea of which of these you feel you can judge immediately with confidence, and which you feel you are unable to judge in this way. Please tick the "can" column for those you feel you can judge and the "can't" column for those you feel you can't judge.

e.g.,

Characteristic	can	can't
hobbies		
honesty		

Please feel free to tick neither column if you feel uncertain about a particular characteristic.

Thank you very much for your help.

.....  
 Table A3.1.1 shows the list of characteristics respondents considered, and the frequencies of "can" and "can't" responses. Twenty-four questionnaires were returned.

Table A3.1.1 (over page): Frequencies of "can" and "can't" (judge) responses to a list of person characteristics.

<b>Characteristic</b>	<b>can</b>	<b>can't</b>	<b>Total</b>
academically bright	8	13	21
age	16	8	24
aggressive	15	7	22
anxious	19	3	22
arrogant, high self-opinion	3	21	24
artistically talented	3	21	24
active in community	5	18	23
confident	21	1	22
conservative	18	5	23
content with life	9	14	23
creative, original	7	14	21
depressive	17	6	23
deep person	7	16	23
disorganized	10	13	23
enthusiastic	19	3	22
food preferences	3	21	24
friendly	22	2	24
genuine person	10	12	22
main life goal	1	23	24
groups identifies with	7	16	23
happy person	17	7	24
healthy, fit	17	6	23
hobbies, interests	3	20	23
style of home would have	4	19	23
honesty, integrity	10	12	22
intelligence	11	12	22
kind and caring	14	10	24
level of education	14	10	24
likeable person	20	4	24
likes and dislikes	2	22	24
moral values	4	20	24
musically talented	1	21	22
importance of others' opinions	10	12	22
outgoing, extraverted	21	3	24
outlook on life	3	21	24
politics	2	20	22
type of relationships	3	18	21
reliable	5	19	24
religion	3	20	23
self-esteem	14	8	22
selfish	16	8	24
sensitive	16	8	24
shrewd, calculating	11	13	24
shy	21	3	24
sincere	12	12	24
sporty	16	6	22
studious	12	12	24
trendy	22	2	24
trustworthy	7	16	23
working or unemployed	5	18	23
wise	7	15	22

**Appendix 3.1.3: Person Perception Questionnaire (2)****Person Perception Questionnaire (2)**

When we form first impressions of other people we generally use quite a specific set of dimensions (characteristics, attributes, abilities and so on). This may be partly because we feel fairly confident that we have an ability to make judgments in these specific areas. We have probably also considered ourselves in terms of the ability to make certain judgments but not others. For example, perhaps we have previously thought about ourselves in terms of the ability to judge age, but have never even considered whether we can judge what sort of home a person would have.

Below is a list of person characteristics, attributes and abilities, and 2 columns headed "have" and "haven't". I am interested not in whether you do make first impression judgments in terms of each of these characteristics, but in whether you have previously considered your ability to make such a judgment.

Please tick the "have" column if you are pretty sure you have thought about your ability to make a first impression judgment of a person on this characteristic before. Tick the "haven't" column if it's never occurred to you before to consider whether you are able to make this sort of first impression judgment about another person. Please feel free to tick neither column if you feel uncertain about a particular characteristic.

Thank you very much for your help.

.....  
 Table A3.1.2 shows the list of characteristics respondents considered, and the frequencies of "have" and "haven't" responses. Twenty-three questionnaires were returned.

**Table A3.1.2 (over page): Frequencies of "have" and "haven't" (considered ability to make a judgment) responses to a list of person characteristics.**



<b>Characteristic</b>	<b>have</b>	<b>haven't</b>	<b>Total</b>
academically bright	20	0	20
age	19	1	20
aggressive	16	7	23
anxious	16	4	20
arrogant, high self-opinion	19	1	20
artistically talented	9	11	20
active in community	4	14	18
confident	19	2	21
conservative	20	1	21
content with life	12	7	19
creative, original	12	6	18
depressive	14	6	20
deep person	12	8	20
disorganized	11	10	21
enthusiastic	14	5	19
food preferences	5	16	21
friendly	21	0	21
genuine person	19	2	21
main life goal	4	15	19
groups identifies with	10	9	19
happy person	19	2	21
healthy, fit	16	5	21
hobbies, interests	6	14	20
style of home would have	7	14	21
honesty, integrity	15	6	21
intelligence	20	1	21
kind and caring	17	3	20
level of education	20	1	21
likeable person	18	2	20
likes and dislikes	7	13	20
moral values	11	17	18
musically talented	3	17	20
importance of others' opinions	7	11	18
outgoing, extraverted	15	6	21
outlook on life	10	9	19
politics	5	15	20
type of relationships	12	8	20
reliable	16	5	21
religion	5	15	20
self-esteem	13	7	20
selfish	12	7	19
sensitive	20	1	21
shrewd, calculating	16	5	21
shy	21	1	21
sincere	19	2	21
sporty	16	5	21
studious	14	7	21
trendy	19	2	21
trustworthy	14	6	20
working or unemployed	9	12	21
wise	11	10	21

### Appendix 3.1.4: Judgment Task for Selection of Statements

#### STATEMENT CLASSIFICATION TASK

On the following page is a list of statements which may or may not be true of any given individual. Three categories are represented - statements referring to a person's temperament (T), statements referring to a person's intelligence (I), and statements referring to a person's artistic talent (A).

I intend to use these as part of an experimental task. To assist me to determine whether these 3 categories are clearly identifiable please could you indicate by a T, an I or an A in the space provided, into which category you think each statement falls.

Thank you very much for your help.

Catherine Delin

.....  
*Note: After each statement is shown the category in which judges considered it to fall, and the number out of 12 who made that judgment.*

1. S/he always makes clever doodles while talking on the telephone.....(A 10)
2. S/he is more intelligent than most people.....(I 12)
3. S/he is studying for a higher degree.....(I 12)
4. S/he will not go on holiday for fear of missing an episode of a favourite T.V. serial.....(T 10)
5. S/he is really skilled at doing quick cartoon sketches of friends.....(A 12)
6. S/he wouldn't panic if a workmate or family member badly injured her/himself.....(T 12)
7. S/he can carry on conversations in several different languages.....(I 12)
8. S/he is artistically talented.....(A 12)
9. S/he often behaves unpredictably.....(T 12)
10. S/he would take a lot of time and trouble over an injured pigeon.....(T 12)
11. S/he likes sketching in her/his spare time although s/he has no ability.....(A 10.5 i.e., 2 classifications made by one respondent))
12. S/he would be rude to a shop-assistant who shortchanged her/him.....(T 12)
13. S/he has had a studio built at home especially for doing pottery.....(A 11)
14. S/he reads encyclopaedias just for the fun of acquiring new information.....(I 10.5)
15. S/he doesn't just bake a cake but sculptures the icing to make it into a work of art.....(A 10)
16. S/he would hide a box of chocolates rather than share them.....(T 12)
17. S/he belongs to a debating club.....(I 8.5)
18. S/he would complain about a less-than-perfect meal in a restaurant and send it back to the kitchen.....(T 12)

19. S/he is sometimes commissioned by the news media to write political commentary.....(I 12)
20. S/he has absolutely no colour sense.....(A 11)
21. S/he illustrates children's books for a living.....(A 12)
22. S/he can never work out how to complete even the simplest form.....(I 12)
23. S/he is a very sociable person.....(T 12)
24. S/he would give away a big lottery win to charity.....(T 11)
25. S/he took art as a matric. subject.....(A 12)
26. S/he can do complicated numerical calculations mentally.....(I 12)
27. S/he likes nothing better than to stay out all night "raging".....(T 12)
28. S/he won a prize in an art competition.....(A 12)
29. S/he could answer almost any general knowledge question s/he was asked.....(I 12)
30. S/he only completed primary school.....(I 11)

### **Appendix 3.1.5: Experiment 4 - General Instructions**

#### **PERSON PERCEPTION STUDY: GENERAL INSTRUCTIONS**

In this study I am interested in whether you can make judgments about other people on the basis of different amounts of information.

There will be 3 different parts to the study, and I will ask you to make judgments about a total of 12 different people.

In Part 1 you will see 4 people (Persons I, J, K and L) on video, but you will not hear the soundtrack. I will ask you to rank them in order of intelligence (i.e., most intelligent to least intelligent). I will also ask you to rank the people on artistic talent (i.e., most artistically talented to least artistically talented). These characteristics have been measured by tests each person has done for me.

In Part 2 you will hear 4 people (Persons E, F, G and H) on tape, but you will not see the picture. I will ask you to make the same judgments as you did in Part 1, that is, to rank the people in order of intelligence and artistic talent.

In Part 3 you will see and hear on video-tape 4 more people (Persons A, B, C and D), and I will ask you to make some quite specific judgments about each one in turn. This task takes the form of a series of statements which may or may not be true of the individual. You will have the opportunity to indicate whether or not you think each statement is true or that you feel you just don't have enough information to make a judgment.

**Appendix 3.1.6.1: Intelligence Ranking Task**

NAME.....

**INTELLIGENCE RANKING TASK**

PERSONS.....

Please rank the 4 people according to your judgment of their intelligence. Simply fill out the table below with the letters corresponding to the 4 people you are judging. "1" means "most intelligent", and "4" means "least intelligent".

For example:

- 1 X
- 2 W
- 3 Z
- 4 Y

This would mean that you judged Person X to be the most intelligent, Person W to be the next most intelligent, and so on.

Even if you find this task difficult to do, please try to make a ranking (you can indicate how confident you are on the scale below). Please write your ranking here:

- 1
- 2
- 3
- 4

Please use the 7-point scale to indicate how confident you are in the accuracy of your ranking. Circle "1" if you are not at all confident of your ranking, and "7" if you are very confident. Use the points in between to show me just how confident you feel about your judgment (please try to avoid "4", the uncertain point, if you can).

I am not at all  
confident of  
my judgment

1

2

3

4

5

6

7

I am very  
confident of  
my judgment

**Appendix 3.1.6.2: Artistic Talent Ranking Task**

NAME.....

**ARTISTIC TALENT RANKING TASK**

PERSONS.....

Please rank the 4 people according to your judgment of their artistic talent. Simply fill out the table below with the letters corresponding to the 4 people you are judging. "1" means "most artistically talented", and "4" means "least artistically talented".

For example:

- 1 X
- 2 W
- 3 Z
- 4 Y







APPENDIX 3.2 (EXPERIMENT 8)Appendix 3.2.1: Judges' TasksStatement Categorization Task

I am organizing material for an experiment and I hope you will help me by completing this task. Below are 24 statements each of which might or might not be true of a given individual. Please could you categorize each statement according to the following scheme: if the statement were true of a person would it be a good, a bad, or a neutral fact about her/him?

Please use the space provided to write -

+ for good

- for bad

or, N for neutral

This form can be returned to the box outside the Psychology Department office labelled "C.Delin's Returns". Thank you very much for your help.

Catherine Delin

*Note: Appearing in brackets after each item are the frequencies of +, - or N judgments made for the item .*

- .....
1. S/he does pottery for a hobby.....(8/11 N)
  2. S/he gave away a big lottery win to charity.....(9/11 +)
  3. S/he would laugh at a weak joke to avoid hurting the joke-teller's feelings.....(8/11 +)
  4. S/he likes to read spy thrillers.....(9/11 N)
  5. S/he would be rude to a shop-assistant who short-changed her/him.....(10/11 -)
  6. S/he complains a great deal when ill.....(10/11 -)
  7. S/he lives in a home unit.....(11/11 N)
  8. S/he remains cheerful even when things go wrong.....(10/11 +)
  9. S/he likes nothing better than to stay out all night "raging".....(8/11 N)
  10. S/he would hide a box of chocolates rather than share them.....(10/11 -)
  11. S/he does complicated doodles while talking on the telephone.....(11/11 N)
  12. S/he would take a lot of time and trouble over an injured pigeon.....(11/11 +)
  13. S/he can't be trusted with a secret.....(10/11 -)
  14. S/he is very boastful about her/his abilities.....(11/11 -)
  15. S/he would stop to help a lost passerby even if late for an important appointment.....(10/11 +)
  16. S/he knows more than one language.....(5/11 N)
  17. S/he becomes bad-tempered when things don't go her/his way.....(11/11 -)
  18. S/he is always available to listen when friends have problems.....(11/11 +)



19. S/he is quite prejudiced against people of other races.....(11/11 -)
20. S/he has penfriends in several different countries.....(10/11 N)
21. S/he spends a lot of spare-time campaigning for nuclear disarmament.....(6/11 +)
22. S/he is intolerant of people who are not as intelligent as her/him.....(10/11 -)
23. S/he would try hard to find the owner of a purse s/he found in the street.....(9/11 +)
24. S/he took maths as a matric. subject.....(11/11 N)

Statement Categorization Task (2).

Thank you very much for completing an earlier version of this task for me. Since there was some disagreement among the judges about the categories, I would be very grateful if you would complete the task again for me.

Below are 26 statements each of which might or might not be true of a given individual. Please could you categorize each statement according to the following scheme: if the statement were true of a person would it be a good, a bad, or a neutral fact about her/him?

Please use the space provided to write -

+ for good

— for bad

or, N for neutral

This form can be returned to the box outside the Psychology Department office labelled "C.Delin's Returns". Thank you very much for your help.

Catherine Delin

*Note: Appearing in brackets after each item are the frequencies of +, - or N judgments made for the item .*

- .....
1. S/he has an ambition to buy a farm.....(10/11 N)
  2. S/he refuses to spread gossip that s/he hears about acquaintances.....(11/11 +)
  3. S/he sponsors several children in poor countries.....(10/11 +)
  4. S/he likes gardening.....(8/11 N)
  5. S/he would be rude to a shop-assistant who short-changed her/him.....(11/11 -)
  6. S/he complains a great deal when ill.....(10/11 -)
  7. S/he lives in a home unit.....(11/11 N)
  8. S/he remains cheerful even when things go wrong.....(10/11 +)
  9. S/he once won a prize for accurately completing a quiz on facts about movie-stars.....(11/11 N)
  10. S/he would hide a box of chocolates rather than share them.....(10/11 -)
  11. S/he does complicated doodles while talking on the telephone.....(10/11 N)

12. S/he would take a lot of time and trouble over an injured pigeon.....(11/11 +)
13. S/he can't be trusted with a secret.....(11/11 -)
14. S/he is very boastful about her/his abilities.....(11/11 -)
15. S/he would stop to help a lost passerby even if late for an important appointment.....(9/11 +)
16. S/he recently gave up work to return to full-time study.....(8/11 N)
17. S/he becomes bad-tempered when things don't go her/his way.....(9/11 -)
18. S/he is always available to listen when friends have problems.....(11/11 +)
19. S/he is quite prejudiced against people of other races.....(10/11 -)
20. S/he has penfriends in several different countries.....(10/11 N)
21. S/he always remembers friends' birthdays with a gift or a phone call.....(10/11 +)
22. S/he is intolerant of people who are not as intelligent as her/him.....(10/11 -)
23. S/he has a good sense of humour.....(11/11 +)
24. S/he took maths as a matric. subject.....(11/11 N)
25. S/he is always very practical in an emergency.....(11/11 +)
26. S/he prefers daisies to roses.....(11/11 N)

### Appendix 3.2.2: Person Perception Study: General Instructions

#### Person Perception Study: General Instructions

In this study I am interested in how we make judgments about other people given different amounts of information. There are 3 phases in the study. In the first phase you will see 2 people having a discussion on the video. The people are called M1 and F1. You will not hear the soundtrack of the video. Then I will ask you to look at a list of characteristics and tick off those which you think apply to each person. I will ask you to make judgments about both their good characteristics, and their more negative characteristics. I will also ask you to rate the difficulty of making each judgment.

In the second phase you will hear 2 different people having a discussion on the tape-recorder. These people are called M2 and F2. This time you will not see them. I will ask you to make the same judgments about each person as you did in the first phase.

Finally, you will see and hear 2 more people (called M3 and F3) on the video. Then I will ask you to consider some specific statements which might or might not apply to each person. I will ask you to tell me whether you think you can make a judgment about the person or whether you feel you just don't have enough information to make a judgment. I will also ask you to rate your confidence in your judgment if you did make it.

Each tape is about 5 minutes long and the three phases together take between 40 and 50 minutes.

**Appendix 3.2.3: Task for First Two Phases**

Name.....

Persons.....

**Person Characteristics Task**

Below is a series of characteristics which might or might not apply to the people you have just seen on the video or heard on the audio-tape. I would like you to think of each person in turn and looking at each characteristic in turn, consider whether you think the characteristic would apply to her/him. Tick "yes" if you think the person would have that characteristic, and "no" if you think s/he would not have that characteristic.

Then I would like you to tell me how difficult it was to make this judgment. In the "difficulty" ("diffic.") column write a number from 1 to 7 to show just how difficult you found it to decide. "1" means "not at all difficult" and "7" means "very difficult". Use any number between 1 and 7 to rate the difficulty - the bigger the number, the more difficult it was to make the judgment.

For example:

Person M1

Characteristic	yes	no	diffic.
creative	✓		2
sociable		✓	7

In the example, the student thinks that Person M1 is creative, and s/he did not find this a very difficult judgment to make. In contrast, s/he thinks that person M1 is not sociable, but s/he found this a very difficult judgment to make.

Please make a judgment about each person on each characteristic, even if you do find some judgments difficult to make - you can show me just how difficult in your rating. If you have no questions, go ahead.

.....  
Person.....

Characteristic	yes	no	diffic.
lazy			
kind			
bad-tempered			
friendly			
unconventional			
greedy			
generous			
impulsive			
dishonest			
trustworthy			

Person.....

Characteristic	yes	no	diffic.
lazy			
kind			
bad-tempered			
friendly			
unconventional			
greedy			
generous			
impulsive			
dishonest			
trustworthy			

**Appendix 3.2.4: Person Judgment Task**

NAME.....

**PERSON JUDGMENT TASK**

PERSON.....

Sometimes when we make judgments about other people we feel quite confident that we have enough information to assess them on certain characteristics or dimensions but not on others. For example, when we meet someone for the first time we might immediately feel that we can make a pretty good guess about what sort of house s/he would live in or what sort of books s/he would like to read. It's almost as if we gather information about a person a bit at a time, and only get to know her/him, or make judgments about her/him, as the opportunity arises.

In this task I would like you to consider making some quite specific judgments about each of the people you have just seen on video and to tell me whether you feel you can make a judgment about her/him. There are 24 statements which may or may not be true of the person. Please consider each one and circle "can make a judgment" if you feel you could say whether or not the statement is true of the person. But if you feel you just don't have enough information to judge please circle "can't make a judgment". In addition, if you circle "can make a judgment", but not if you circle "can't make a judgment", I want you to rate your confidence in your judgment on a 7-point scale.

For example:

1. S/he belongs to a debating club. Confidence  
 can't make a judgment                      can make a judgment                      .....

Circle "can make a judgment" if you think you know whether or not the person does belong to a debating club. If you circle "can make a judgment", you will also rate your confidence in your judgment in the space provided. "1" means "not at all confident" and "7"

means "very confident", and you can use any of the numbers from 1 to 7 to show just how confident you feel that your judgment about whether or not the person belongs to a debating club is correct.

Please feel free to circle "can't make a judgment" if you think you just don't have enough information to make a judgment. In this case you would not rate your confidence.

Please consider all 24 statements. If you have no questions, turn the page and begin.

.....

1. S/he has an ambition to buy a farm.	<u>Confidence</u>
can't make	can make
a judgment	.....
a judgment	a judgment

*(judgment categories included in actual version omitted from subsequent items)*

2. S/he refuses to spread gossip that s/he hears about acquaintances.
3. S/he sponsors several children in poor countries.
4. S/he loves the colour blue.
5. S/he would be rude to a shop-assistant who short-changed her/him.
6. S/he complains a great deal when ill.
7. S/he lives in a home unit.
8. S/he remains cheerful even when things go wrong.
9. S/he once won a prize for accurately completing a quiz on facts about movie-stars.
10. S/he would hide a box of chocolates rather than share them.
11. S/he does complicated doodles while talking on the telephone.
12. S/he would take a lot of time and trouble over an injured pigeon.
13. S/he can't be trusted with a secret.
14. S/he is very boastful about her/his abilities.
15. S/he is always available to listen when friends have problems.
16. S/he is quite prejudiced against people of other races.
17. S/he has penfriends in several different countries.
18. S/he always remembers friends' birthdays with a gift or a phone call.
19. S/he is intolerant of people who are not as intelligent as s/he is.
20. S/he has a good sense of humour.
21. S/he took maths as a matric. subject.
22. S/he is always very practical in an emergency.
23. S/he prefers daisies to roses.
- \*24. S/he seriously damaged another car when leaving a car-park and did not attempt to find its owner.

\* *No independent classification obtained.*

**APPENDIX 4.1 (EXPERIMENT 6)****Appendix 4.1.1: Initial Letter (Creativity) to Potential Subjects (Including Experimental Tasks)**

Department of Psychology

Dear

I am a postgraduate student in the Psychology Department doing research towards a Ph.D. I am hoping that you can help me to organize some materials that I want to use in a study early in 1987. My main interest is in the relationship between a person's self-concept and her/his behaviour. In the study that I am planning for next year I will be investigating the relationship between a person's self-concept of her/his creativity and her/his actual creative ability. In order to study this I need to devise some suitable tasks. I would really appreciate it if you could complete the enclosed form for me and return it to the box outside the Psychology Department labelled "C.Delin's Returns". If you do, I will credit you with 30 minutes' experimental time. Since it is generally anticipated that Psych. I students will spend 5 hours' experimental time during the course of the year, hopefully this task will be a fairly straightforward way to earn some time.

The form consists of an actual creativity test which I would like you to complete so that you can evaluate it for me. I will ask you to rate this task on a 7-point scale of difficulty and to tell me approximately how much time you spent on the task. A number of students will be doing the same task for me, and on the basis of your responses I will decide whether the task is appropriate for my study.

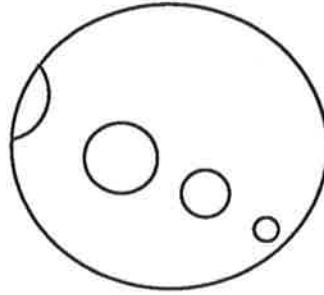
I'm particularly interested in your responses, so please don't discuss this with any of your friends until after you have returned the form to me. Thank you very much for your help.

Yours sincerely,

Name.....

Experiment Planning Form

Part A - Creativity Task: Here is a circle containing a picture. Please study the picture and write down what you see there. You can write down as many different answers as you like - go onto the back of the page if necessary. There are no "right" answers, so just write down as many different things as you can think of.



Name.....

Part B - Creativity Task Ratings: I want you to rate the creativity task you have just completed according to how difficult you found it, and also to tell me how long you spent working on it.

(1) In order to rate the task please consider the statement below and rate it on the scale. Circle "1" if the statement is not at all true of you, and "7" if it is completely true of you, using the numbers in between to indicate to what extent you found the task difficult. Circle one number only, the one that shows how true the statement is of you.

I found this task difficult.

not at all	1	2	3	4	5	6	7 completely
true of me							true of me

(2) Please write in the space provided your estimate of the length of time you spent on the creativity task.

I spent about.....minutes on the task.

Please return your completed form by.....to the box outside the Psychology Department office labelled "C.Delin's Returns". Thank you very much for your help.

**Appendix 4.1.2: Subsequent Letter (Creativity) to Subjects (Including Experimental Tasks)**

Department of Psychology

Dear

Thank you very much for completing and returning my form. I appreciate your time and interest. Unfortunately, it looks as if, overall, the task you evaluated for me is not suitable to be used in my study next year.

For that reason, I am hoping that you will help me just once more by evaluating a different creativity test. I have enclosed another form with this letter, and once again, if you do complete it and return it to me by .....I will credit you with 30 minutes' experimental time. It can be returned in the same way as before to the box outside the Psychology Department office labelled "C.Delin's Returns".

This time I am asking you to do the task for me and to rate it on rather more scales than you did the other one, since I really need this information to know whether I can use the task in my study next year. Once again, it would be better not to discuss it with your friends until after you have completed the task, since I really want to know what you think. Thank you very much for your help.

Yours sincerely,

.....

Name.....

**Experiment Planning Form (2)**

**Part A - Creativity Task**

**What If.....People Could Become Invisible?**

If people could become invisible at will, what would the consequences be? Our individual lives would be affected, and so might the organization of societies.

I want you to imagine as many consequences as you can of people having the ability to become invisible at will. Write down any possible consequences you can think of, however strange they seem to you. Go onto the back of the page if necessary.

.....

Name.....

**Part B - Creativity Task Ratings:** Below is a series of statements about the task you have just completed. I would like you to use the 7-point scales to indicate to what extent you agree with each of these. Remember how you completed the scale last time, circling "1" if the statement was not at all true of you, and "7" if it was completely true of you, or using any of the numbers in between to show just how true the statement was for you. Please complete



each of the following scales in the same way, circling one number each time to show just how you felt about the Invisible People task.

1. I found this task difficult.

not at all	1	2	3	4	5	6	7	completely
true of me								true of me

*(rating scales included in the questionnaire as administered have been omitted here from subsequent items)*

2. I enjoyed doing this task.

3. I think that other students would try hard at this task.

4. I didn't feel like spending much time on this task.

5. I would like to do other similar tasks sometimes for recreation.

6. It was important to me to do this task well.

7. I think that other students would find this task boring.

8. I felt tense while I was doing this task.

9. I tried hard at this task.

10. I think that other students would enjoy doing this task.

11. I did well at this task.

12. I cared how well I did at this task.

Finally, please write in the space provided your estimate of the length of time you spent on the creativity task.

I spent about.....minutes on the task.

Please return the completed form by.....to the box outside the Psychology Department office labelled "C.Delin's Returns". Thank you very much for your help.

---

### **Appendix 4.1.3: Initial Letter (Persistence) to Potential Subjects**

Department of Psychology

Dear

I am a postgraduate student in the Psychology Department doing research towards a Ph.D. I am hoping that you can help me to organize some materials that I want to use in a study early in 1987. My main interest is in the relationship between a person's self-concept and her/his behaviour. In the study that I am planning for next year I will be investigating the relationship between a person's self-concept of her/his persistence and her/his actual persistence. In order to study this I need to devise some suitable tasks. I would really appreciate it if you could complete the enclosed form for me and return it to the box outside the Psychology Department labelled "C.Delin's Returns". If you do, I will credit you with 30 minutes' experimental time. Since it is generally anticipated that Psych. I students will spend 5 hours' experimental time during the course of the year, hopefully this task will be a fairly straightforward way to earn some time.

The form consists of an actual persistence test which I would like you to complete so that you can evaluate it for me. I will ask you to rate this task on a 7-point scale of difficulty and to tell me approximately how much time you spent on the task. A number of students will be doing the same task for me, and on the basis of your responses I will decide whether the task is appropriate for my study.





**APPENDIX 4.2 (BEHAVIOUR RATING STUDY)****Appendix 4.2: Behaviour Rating Questionnaire**

Age.....years.....months

Gender (M or F).....

**Behaviour Rating Questionnaire**

People have a very wide variety of characteristics, including physical attributes (e.g., having blue eyes), abilities and skills (e.g., being musically talented or a good cook), and specific behavioural tendencies (e.g., being generally polite to others).

Clearly we are not able to display physical attributes which we do not possess. We may also feel that there are some sorts of abilities and behaviours that we can't display either, even if we really want to. For example, we might feel unable to improve on Einstein's theory of relativity, paint a masterpiece or pick up a snake. There are some behaviours or characteristics, however, which we could display if we were really strongly motivated to do so. So, for example, we might feel able to pick up a snake if we really really wanted to (even if we would hate it), but no matter how much we might want to, we might still feel unable to paint a masterpiece. Most people somehow just don't have what it takes to paint masterpieces.

In this questionnaire are a number of items ranging from "eat a worm" to "maintain one's ideal body weight". I would like you to assess each of these items in terms of whether being able to do the behaviour or display the characteristic is simply a matter of motivation. I would like you to rate each item on a 7-point scale. Circle "1" if you disagree strongly with the statement following the item and "7" if you agree strongly, using the points in between to show just how strongly you do agree. For example:

## 1. pilot a light plane

The ability to do this is simply a matter of having enough motivation, of wanting to enough.

disagree strongly 1 (2) 3 4 5 6 7 agree strongly

In this example, the student has circled "2" to show that s/he doesn't agree much at all that the ability to pilot a light plane is just a matter of wanting to do it. S/he probably thinks that there are a range of skills involved which most people wouldn't have, and therefore they couldn't do it just by deciding to. Look at this example:

## 2. go without sleep for 2 nights in a row

The ability to do this is simply a matter of having enough motivation, of wanting to enough.

disagree strongly 1 2 3 4 5 (6) 7 agree strongly

This time the student has circled "6" to show that s/he agrees pretty strongly that the ability to go without sleep for 2 nights in a row could be affected by enough motivation, that if we really wanted to we could probably do it.

The questionnaire begins below the dotted line. It contains 30 items. Please rate each one by showing me how much you agree with the statement that doing this behaviour or displaying this characteristic or ability is simply a matter of wanting to enough. Use the 7 points of the scale to indicate the extent of your agreement, trying to avoid "4", the "uncertain" point, if you possibly can.

Thank you very much for you help.

.....

1. do well on a spelling test appropriate for one's age level

The ability to do this is simply a matter of having enough motivation, of wanting to enough.

disagree strongly 1 2 3 4 5 6 7 agree strongly

*(rating scales included in actual version omitted from subsequent items)*

2. vote in an election (if one is of voting age and voting is not compulsory)

3. be a generally healthy person

4. be creative when one is asked to do a picture interpretation task one has never seen before

5. move closer to an object one really fears

6. be an intelligent person

7. persist at a tricky problem even when one is frustrated by it

8. say positive things to oneself

9. be good at maths

10. do regular exercise

11. be a good judge of other people

12. persist at a new problem even when one has run out of ideas

13. sort cards accurately in a psychology experiment

14. co-operate with others on a game

15. maintain one's ideal body weight

16. treat other people with kindness

17. share something one really wants with another person

18. be a generally persistent person

19. accurately rank a group of people according to their artistic talent after seeing (no sound) them briefly on video or hearing them briefly on tape

20. throw litter in a bin rather than on the ground

21. be a non-smoker

22. make a small donation to a worthy cause

23. eat a worm

24. make confident judgments about a range of characteristics of people seen and heard briefly on video

25. cut down on stress in one's life

26. eat mainly nutritious food

27. be patient when one has to do a boring and repetitious task
28. accurately throw a wad of paper into a waste-basket from 50 feet
29. look for the good characteristics in another person
30. take medicine or tablets prescribed by a doctor

**APPENDIX 4.3 (CHARACTERISTICS RATING STUDY)****Appendix 4.3: Characteristics Rating Questionnaire**

Age.....years.....months

Gender (M or F).....

**Characteristics Rating Questionnaire**

People have a very wide variety of characteristics, including physical attributes (e.g., having blue eyes), abilities and skills (e.g., being musically talented or a good cook), and specific behavioural tendencies (e.g., being generally polite to others). I am interested to know how you feel about some of these person characteristics.

Eight characteristics are represented in this questionnaire. For each characteristic I will ask you to make 5 different judgments. An example of each type of judgment is set out below. Each one is in the form of a statement which I will ask you to rate on an 11-point scale. Circle "1" if the statement is not at all true for you, and "11" if it is completely true for you, using the points in between to show me just how true the statement is for you. Look at these examples:

1. I am an honest person.

not at all 1 2 3 4 5 6 7 8 (9) 10 11 completely  
true of me true of me

2. Being honest is an important part of my idea of myself.

not at all 1 2 3 4 5 6 7 8 9 (10) 11 completely  
true of me true of me

3. If I could choose my characteristics all over again, I would choose to be honest.

not at all 1 2 3 4 5 6 (7) 8 9 10 11 completely  
true of me true of me

In no.1 in the example, the student has circled "9" on the 11-point scale to show that s/he thinks of her/himself as a pretty honest person. S/he has circled "10" in no. 2 to show that s/he regards honesty as a very important part of her/his self-concept, but in no. 3 has circled "7" to show that, given a choice, s/he would only want to choose honesty as a personal characteristic to a moderate extent.

In addition I want you to imagine a situation in which someone has told you that you have the given characteristic, perhaps on the basis of something you have just done, or even for no obvious reason. I am interested in how you would feel about that. Look at the example:

4. If someone were to tell me that s/he regards me as an honest person, I would feel very pleased.

not at all 1 2 3 4 5 6 7 8 9 (10) 11 completely  
true of me true of me

The student has circled "10" to show that s/he would be very pleased to be told s/he was seen as honest by the other person. However, sometimes when a person compliments

us on our characteristics we might wonder whether there is some "ulterior motive" for the compliment, whether perhaps they are trying to get us to behave in a certain way. For example, suppose a classmate told you that, in her/his opinion, you were really good at psychology, you might wonder whether that person was hoping for some help with a psychology assignment. In no. 5, then, I am interested in your feelings about the possible meaning of being told you have a given characteristic. Look at the example:

5. If someone were to tell me that s/he regards me as an honest person, I would feel that s/he was trying to affect my behaviour in some way.

not at all 1 2 (3) 4 5 6 7 8 9 10 11 completely  
true of me true of me

This time the student has circled "3" to show that s/he would not believe it very likely that the other person was trying to affect her/his behaviour by saying s/he was honest.

There are 40 items in the questionnaire, covering the 5 different types of judgment you have seen in the examples for 8 different characteristics. Each item is followed by a rating scale. Please make a judgment for each item, if possible avoiding "6", the "uncertain" point. Don't worry about how others would rate the characteristics. I am interested in your ratings. Thank you very much for your help.

.....  
1. I am a kind person.

not at all 1 2 3 4 5 6 7 8 9 10 11 completely  
true of me true of me

*(rating scales included in actual version omitted from subsequent items)*

2. Being creative is an important part of my idea of myself.

3. If I could choose my characteristics all over again, I would choose to be a person who looks for the good characteristics in another person.

4. Being neat and tidy is an important part of my idea of myself.

5. If someone were to tell me that s/he regards me as a creative person, I would feel that s/he was trying to affect my behaviour in some way.

6. Being kind is an important part of my idea of myself.

7. If I could choose my characteristics all over again, I would choose to be intelligent.

8. If someone were to tell me that s/he regards me as good at making first impression judgments about another person's artistic abilities, I would feel that s/he was trying to affect my behaviour in some way.

9. I am good at making first impression judgments about another person's artistic abilities.

10. If someone were to tell me that s/he regards me as a kind person, I would feel very pleased.

11. If someone were to tell me that s/he regards me as a persistent person, I would feel very pleased.



12. If someone were to tell me that s/he regards me as a person who looks for the good characteristics in another person, I would feel that s/he was trying to affect my behaviour in some way.
13. If I could choose my characteristics all over again, I would choose to be a perceptive person.
14. If someone were to tell me that s/he regards me as a neat and tidy person, I would be very pleased.
15. I am a perceptive person.
16. If someone were to tell me that s/he regards me as a person who looks for the good characteristics in another person, I would be very pleased.
17. If I could choose my characteristics all over again, I would choose to be creative.
18. If someone were to tell me that s/he regards me as a kind person, I would feel that s/he was trying to affect my behaviour in some way.
19. Being persistent is an important part of my idea of myself.
20. Being good at making first impression judgments about another person's artistic abilities is an important part of my idea of myself.
21. If someone were to tell me that s/he regards me as a persistent person, I would feel that s/he was trying to affect my behaviour in some way.
22. If someone were to tell me that s/he regards me as a neat and tidy person, I would feel that s/he was trying to affect my behaviour in some way.
23. Being intelligent is an important part of my idea of myself.
24. If someone were to tell me that s/he regards me as a perceptive person, I would feel that s/he was trying to affect my behaviour in some way.
25. I am a person who looks for the good characteristics in another person.
26. I am an intelligent person.
27. I am a persistent person.
28. If someone were to tell me that s/he regards me as a perceptive person, I would feel very pleased.
29. If someone were to tell me that s/he regards me as a creative person, I would feel very pleased.
30. If I could choose my characteristics all over again, I would choose to be kind.
31. If someone were to tell me that s/he regards me as good at making first impression judgments about another person's artistic abilities, I would be very pleased.
32. I am a neat and tidy person.
33. If I could choose my characteristics all over again, I would choose to be persistent.
34. If someone were to tell me that s/he regards me an intelligent person, I would feel that s/he was trying to affect my behaviour in some way.
35. Being a person who looks for the good characteristics in another person is an important part of my idea of myself.

36. If I could choose my characteristics all over again, I would choose to be good at making first impression judgments about another person's artistic abilities.
37. Being a perceptive person is an important part of my idea of myself.
38. If I could choose my characteristics all over again, I would choose to be neat and tidy.
39. I am a creative person.
40. If someone were to tell me that s/he regards me as an intelligent person, I would feel very pleased.

## APPENDIX 5 (EXPERIMENT 7)

### Appendix 5.1: General Instructions Cognitive Style Study

#### General Instructions

Some psychologists believe that every individual is either left-brain dominant, that is, analytical, verbal, mathematical and logical, or right-brain dominant, that is, artistic, intuitive, imaginative and non-verbal. In this study I am interested in the relationship between left- or right-brain dominance and attitudes to, and feelings about, some different sorts of tasks. Firstly, then, I will ask you to complete a "Cognitive Style Questionnaire" to enable me to determine whether you tend to be left-brain dominant or right-brain dominant.

Then I will ask you to try some different tasks on the BBC computer. Don't worry if you have no experience with computers. All the necessary instructions will be explained, and I will be present to assist you. There are 4 different tasks for you to try. After each one I will ask you to fill out a short questionnaire about that task. Since I am only interested in your attitudes to, and feelings about, the tasks, you only need work on each one long enough that you then feel able to rate it.

To get a task PRESS THE SPACE BAR, the long black key at the front of the keyboard. You may leave a task at any point by PRESSING THE BREAK KEY at the top right-hand corner of the keyboard.

While you are working on the tasks you may be asked to enter information into the computer. After you have done so, always PRESS RETURN, 2 rows up on the right-hand side of the keyboard. If you want to change what you have just typed you may do so by using the DELETE key, just below RETURN - but you must do so BEFORE PRESSING RETURN.

#### THE TASKS

##### Word Matching Task (see below for data)

In this task you will be presented with 3 words and asked to find a fourth word that "goes with" the other three. To enter your solution, type in the word and PRESS RETURN. You can use DELETE to make corrections while you are typing.

You must find the correct match for the words before you can try the next problem.

##### Translation Task (see below for data)

The object of this task is to translate words from English to Esperanto or from Esperanto to English. Two versions of a passage will appear on the screen, one in English and one in Esperanto. Once you begin the task you will be able to review the passages so that you can make your translation. You can do this by pressing the @ key. A word will appear on the screen in one of the languages, and you will simply type in what you think is its equivalent in the other language. If you are correct, you will hear a victory tune. If not you will have to delete your incorrect word before you can try again. You cannot go on to the next word until you have correctly translated the current word.

Word Search

The object is to complete the story by filling in the gaps with the correct words. Each time you guess a word correctly it will appear in yellow in the right place and the computer will tell you how many words you have found and how many more there are to find. If you guess incorrectly the computer will simply tell you that the word was not hidden.

Note that you have to wait about 30 seconds for the story to be displayed on the screen - but it will come!

Remember that while you are typing in each word you may make corrections using DELETE, and that after each word you must PRESS RETURN.

Magic Square

In this task, a 3 X 3 square of numbers will appear on the screen. This square is a "magic square" in that all the rows and columns add up to the same number.

When you first see the square, 3 of the numbers are shown as ? question marks. Your task is to complete the square by guessing or calculating the correct numbers to replace the question marks. The computer will then tell you how long you took to solve the square and how many guesses you made, before you go on to the next square.

.....

Word Matching Task (Data)

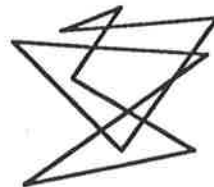
<u>Words</u>	<u>Answer</u>	<u>Words</u>	<u>Answer</u>
call box line	telephone	between cart slow	go
point hat ball	pin	up book charge	cover
blue cake cottage	cheese	coffee cover under	ground
man wheel high	chair	weight pipe pencil	lead
motion coach down	slow	heavy tip dog	top
stool powder ball	foot	tower band night	watch
third birthday surprise	party	nip nap call	cat
house village fly	green	back gap light	stop
plan show board	floor	black order air	mail
key wall precious	stone	magic out jack	black
chocolate iron tender	bar	carriage machine metal	gun
basket snow bearing	ball	shape scholar friend	ship



In Part B you will be asked to choose a name for each shape in a series of pairs of shapes. The 2 shapes are numbered (1) and (2). Please select the name you consider most appropriate for each shape by filling in numbers (1) and (2) in the spaces provided. For example:



(1)



(2)

Booqalume is number....., and Rujerin is number.....

In the first space write in the number of the shape you would prefer to call Booqalume, and in the second the number of the shape you would call Rujerin. There are 3 pairs of shapes like the example. Remember there are no right or wrong answers - I am interested in your preference for naming the shapes.

If you have no questions turn the page and begin.....

#### Part A

1. I like to make detailed plans of each paragraph before I write an essay.

false            true

*(judgment categories included in actual version omitted from subsequent items)*

2. I am good at judging what time it is without my watch.

3. I make vivid mental images of places I have seen.

4. When I am reading a book I am likely to guess at the ending.

5. I remember my dreams.

6. I like modern art.

7. I know straight away whether I like a new acquaintance or not.

8. I would rather play Scrabble than play a video game.

9. I enjoy classical music.

10. I hate algebra.

11. I love a good debate about topical issues.

12. If I don't know how to spell a word I look it up in the dictionary.

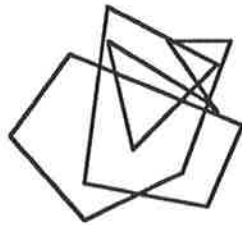
13. I prefer daisies to orchids.

14. My hand-writing is neat and easy to read.

15. I can remember important telephone numbers without writing them down.

Part B

1.



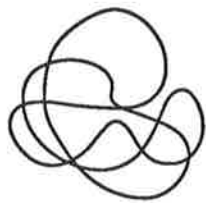
(1)



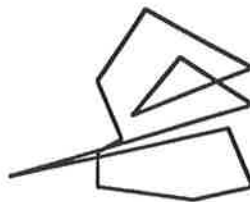
(2)

Lerga is number....., and Caballon is number.....

2.



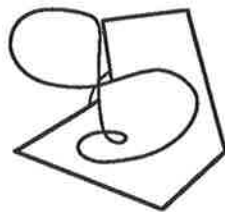
(1)



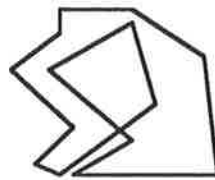
(2)

Fujimi is number....., and Purlina is number.....

3.



(1)



(2)

Tolu is number....., and Marnido is number.....

Appendix 5.3: Task Rating Scales

Name.....

TASK RATING

I would like your reactions to, and feelings about,....., the task you have just worked on. On the following page is a series of statements, each one followed by a 7-point scale. For example:

Doing this task was fun.

disagree 1 2 3 4 (5) 6 7 agree  
strongly strongly

In this example, the student has circled "5" to indicate that s/he agrees fairly strongly that doing the task was fun.

For each statement I would like you to circle a number to indicate to what extent you agree with the statement. Circle "1" if you strongly disagree, "2" if you disagree fairly much, and so on up to "7" which indicates that you strongly agree with the statement. Please try to avoid "4", the "uncertain" point, if you possibly can. If you have no questions, please turn the page and begin.

.....  
1. I thought I would do well at this task.

disagree 1 2 3 4 5 6 7 agree  
strongly strongly

*(rating scales included in actual version omitted from subsequent items)*

2. It was important to me that I do well at this task.
3. Other students would enjoy doing this task.
4. I felt tense while doing this task.
5. I would sometimes like to do tasks similar to this one for recreation.
6. Other students would try hard while doing this task.
7. This task was interesting.
8. I only felt like doing this task for a short time.
9. It would take most students a little while to work out the best way of doing this task.
10. I cared very much how well I did at this task.
11. I enjoyed doing this task.
12. I tried hard while doing this task.
13. I did well at this task.
14. Most students would be bored by this task.
15. I wanted to keep doing this task.
16. It took me a little while to work out the best way of doing this task.



APPENDIX 6 (SELF-CONCEPT STUDIES)Appendix 6.1: Self-Concept Questionnaire (preliminary version)

Name.....

SELF-CONCEPT QUESTIONNAIRE

I am interested in determining what a student like you thinks about her/himself - what your interests, personal characteristics and feelings are, how you would describe yourself.

This questionnaire contains a number of statements. For example:

(1) I am an animal lover.

Each statement might be descriptive of you, that is, for each statement you could say "yes", meaning it does describe you, or "no", meaning it does not describe you. Thus for each statement I would like you to circle "yes" or "no". For example:

(1) I am an animal lover.                       yes                      uncertain                      no

The student has circled "yes" because s/he believes that the statement accurately describes her/him. Please do not use the "uncertain" category unless it is absolutely necessary, that is, when you really do not know, or cannot decide about the statement.

In addition, I would like you to tell me whether you have always thought of yourself in the way described by the statement or whether you are only making a judgment about yourself now, because I am asking you to do so. For example:

(1) (a) I am an animal lover.                       yes                      uncertain                      no

(1) (b) I have thought this about myself before now, distinctly enough that I might well have included a similar statement in a description of myself.

yes                      uncertain                      no

In the example, the student would not only describe her/himself as an animal lover, but s/he has indicated in the second part of the question that s/he has clearly thought this before.

Look at this example:

(2) (a) I am unconventional.                      yes                      uncertain                       no

(2) (b) I have thought this about myself before now, distinctly enough that I might well have included a similar statement in a description of myself.

yes                      uncertain                       no

This time the student has circled "no" to indicate that s/he does not think that the statement accurately describes her/him, but since s/he has only this moment made the judgment (since I asked her/him to do so as part of this task) s/he has also circled "no" in the second part of the question.

There are 50 statements in the questionnaire. Please circle "yes" or "no" for every one to indicate whether or not the statement describes you. Please also indicate for every one

whether or not you have thought of yourself this way before by circling "yes" or "no" in the second part of the question. Try to avoid using "uncertain" unless you really do not know.

Please turn the page and begin.

*(rating categories included in the questionnaire as administered have been omitted here beyond item 1)*

- 1(a) I am sensitive to criticism                      yes      uncertain      no
- 1 (b) I have thought this about myself before now, distinctly enough that I might well have included a similar statement in a description of myself.
- yes      uncertain      no
2. When it comes to maths, I am really smart.
  3. I am only friendly towards others when I'm in a good mood.
  4. If I were asked a personal question by a close friend I would be very likely to give an honest answer.
  5. I am boastful about my abilities.
  6. I like to dress neatly.
  7. I am shy in large social groups.
  8. I usually leave assignments until the last minute.
  9. I tend to persist at tricky problems even when I am frustrated by them.
  10. I am generally helpful to others.
  11. I would enjoy speaking in front of a large group.
  12. Imaginativeness is not one of my most obvious abilities.
  13. I am generous with money.
  14. I have a variety of different hobbies.
  15. I never persist at a puzzle unless I'm pretty sure I will be able to solve it.
  16. If someone criticizes me, I get upset.
  17. My desk or work-area at home is usually very untidy.
  18. I find most word games fascinating.
  19. I am generally an easygoing sort of person.
  20. I daydream a lot.
  21. I have never liked my looks.
  22. I have a good sense of humour.
  23. If I have to do a boring and repetitive task, I get very impatient.
  24. I would stop to help if a person needed it even if I were late for an exam.
  25. I don't think I would win a prize for creativity or originality.
  26. Sometimes I am selfish.
  27. I have a very logical mind.
  28. My friends can trust me.
  29. I play a lot of sport.
  30. I am quite greedy about my favourite foods.





6. I am generous with money.
7. I've never felt confident that I could judge a person's intelligence.
8. If someone criticizes me, I get upset.
9. My desk or work area at home is usually very untidy.
10. I find most word games fascinating.
11. I daydream a lot.
12. I am a perceptive person.
13. If I have to do a boring and repetitive task, I get very impatient.
14. I don't think I would win a prize for creativity or originality.
15. I have a very logical mind.
16. I play a lot of sport.
17. I can judge pretty well straight away if a person is artistically talented.
18. I am quite greedy about my favourite foods.
19. I'm bad at mechanical tasks.
20. Computers are a mystery to me.
21. I approach all new tasks in a very methodical manner.
22. I am a fairly sophisticated person.
23. I usually remain patient even when I make mistakes at a task.
24. I am not at all competent when it comes to mechanical devices.
25. I find computer games quite addictive.

---

**Appendix 6.3: Self-Construction Questionnaire (third version of Self-Concept Questionnaire)**

NAME.....

AGE.....years.....months

CONTACT DEPT......

**SELF-CONSTRUCTION QUESTIONNAIRE**

I am interested in determining what a student like you thinks about her/himself - what your interests, personal characteristics and feelings are, how you would describe yourself.

This questionnaire contains a number of statements. For example:

- (1) I am an animal lover.

Each statement might be descriptive of you, that is, for each statement you could say "yes", meaning it does describe you, or "no", meaning it does not describe you. For example:

- (1) I am an animal lover.                      no                      uncertain                      yes

The student has circled "yes" because s/he believes that the statement accurately describes her/him. Please do not use the "uncertain" category unless it is absolutely necessary, that is, when you really do not know, or cannot decide about the statement.



12. I am rather more creative and original than many other people.
13. I have a very logical mind.
14. I play a lot of sport.
15. I am quite greedy about my favourite foods.
16. I'm bad at mechanical tasks.
17. Computers are a mystery to me.
18. I approach all new tasks in a very methodical manner.
19. I am a fairly sophisticated person.
20. I usually remain patient even when I make mistakes at a task.
21. I find computer games quite addictive.
22. I am not at all competent when it comes to mechanical devices.

#### Appendix 6.4: Self-Consciousness Scale

NAME.....

CONTACT DEPT.....

#### SELF-CONSCIOUSNESS SCALE

Some people think more about themselves and the reactions that other people are having to them than do others. This questionnaire is concerned with the extent to which you think about yourself and about the reactions others are having to you. It consists of a number of statements which may or may not be true of you.

There are 23 statements. Please rate each one on the 5-point scale to indicate the extent to which the statement is true of you. For example:

My looks matter to me.

not at all	1	2	3	4	5	completely
true of me						true of me

Circle 1 if the statement is not at all true of you, and 5 if it's completely true of you. Use the points in between to indicate just how true the statement is of you. Try to avoid 3, the "uncertain" point, if you possibly can. Please answer every item.

*(rating scales included in the questionnaire as administered have been omitted here beyond item 1)*

1. I'm always trying to figure myself out.

not at all	1	2	3	4	5	completely
true of me						true of me

2. I'm concerned about my style of doing things.

3. Generally, I'm not very aware of myself.

4. It takes me time to overcome my shyness in new situations.

5. I reflect about myself a lot.

6. I'm concerned about the way I present myself.

7. I'm often the subject of my own fantasies.
8. I have trouble working when someone is watching me.
9. I never scrutinize myself.
10. I get embarrassed very easily.
11. I'm self-conscious about the way I look.
12. I don't find it hard to talk to strangers.
13. I'm generally attentive to my inner feelings.
14. I usually worry about making a good impression.
15. I'm constantly examining my motives.
16. I feel anxious when I speak in front of a group.
17. One of the last things I do before I leave my house is look in the mirror.
18. I sometimes have the feeling that I'm off somewhere watching myself.
19. I'm concerned about what other people think of me.
20. I'm alert to changes in my mood.
21. I'm usually aware of my appearance.
22. I'm aware of the way my mind works when I work through a problem.
23. Large groups make me nervous.

#### Appendix 6.5: Self-Monitoring Scale

NAME.....

CONTACT DEPT......

#### PERSONAL REACTION INVENTORY

The statements on the following pages concern your personal reactions to a number of different situations. No two statements are exactly alike, so consider each statement carefully before answering. If a statement is TRUE or MOSTLY TRUE as applied to you, circle the "true" on the questionnaire. If a statement is FALSE or NOT USUALLY TRUE as applied to you, circle the "false". Please answer every item as honestly as you can. Your answers are strictly confidential.

*(rating categories included in the questionnaire as administered have been omitted here beyond item 1)*

1. I find it hard to imitate the behaviour of other people.
 

true    false
2. My behaviour is usually an expression of my true inner feelings, attitudes and beliefs.
3. At parties and social gatherings, I do not attempt to do or say things that others will like.
4. I can only argue for ideas which I already believe.
5. I can make impromptu speeches even on topics about which I have almost no information.
6. I guess I put on a show to impress or entertain people.



7. When I am uncertain how to act in a social situation, I look to the behaviour of others for cues.
8. I would probably make a good actor.
9. I rarely need the advice of my friends to choose movies, books or music.
10. I sometimes appear to others to be experiencing deeper emotions than I actually am.
11. I laugh more when I watch a comedy with others than when alone.
12. In a group of people I am rarely the centre of attention.
13. In different situations and with different people, I often act like very different persons.
14. I am not particularly good at making other people like me.
15. Even if I am not enjoying myself, I often pretend to be having a good time.
16. I'm not always the person I appear to be.
17. I would not change my opinions (or the way I do things) in order to please someone else or win their favour.
18. I have considered being an entertainer.
19. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
20. I have never been good at games like charades or improvisational acting.
21. I have trouble changing my behaviour to suit different people and different situations.
22. At a party I let others keep the jokes and stories going.
23. I feel a bit awkward in company and do not show up quite so well as I should.
24. I can look anyone in the eye and tell a lie with a straight face (if for a right end).
25. I may deceive people by being friendly when I really dislike them.

APPENDIX 7 (PARENT-CHILD STUDIES)Appendix 7.1: Free-Response Praise Questionnaire for ParentsATTENTION PARENTS OR PARENT-SUBSTITUTES

I would be very grateful if you would answer some questions relating to your interactions with your child or the child in your care. Your answers will enable me to devise a more detailed questionnaire about parent-child interactions. If you care for more than one child, would you please complete one sheet per child.

Thank you for your help.

- .....
1. When was the last time you praised your child for some behaviour? (e.g., earlier today, yesterday, a couple of days ago, about a week ago etc.) (*one line provided*)
  2. What had your child done which resulted in your praising her/him? (*two lines provided*)
  3. Try to recall the incident as clearly as you can. Please record, as accurately as you can, the exact words that you used when praising your child. (*two lines provided*)
  4. What sorts of things do you generally say when praising this child? (*three lines provided*)
  5. How old is your child?
- 

Appendix 7.2: Content Analysis - Specific Behaviour

Note: Those items which are underlined were added to the coding system after the second preliminary data collection phase. The first number in brackets after each category shows the percentage of parents of 8-year old children mentioning this behaviour, and the second the percentage of 12-year olds' parents - results from second preliminary data collection phase.

10 Helping Around the Home

11 Helping parent to do general household tasks e.g., set table, do dishes, cook (8.89:13.85).

12 Helping parent personally or making it easier for parent to do tasks e.g., making parent a cup of tea, babysitting while parent studies (0:1.54).

13 Doing own routine household tasks e.g., tidying own room, feeding own dog (if it were unclear as to whether the animal belonged to the child or the household it would be coded 11) (3.33:10.77).

20 Self-Care and Feeding

21 Feeding appropriately (e.g., without mess), choosing appropriate food (6.67:1.54).

22 Toileting appropriately, including not wetting the bed (0:1.54).

23 Dressing appropriately, doing own hair (4.44:3.08).

24 Learning other self-care skills, e.g., road safety (0:0).

25 Correct posture (0:1.54).

26 Hygiene, e.g., showering, brushing teeth (0:3.08).

30 Skills Improvement/Mastery

31 Improving at, or mastering, any skill set by child or parent e.g., reading, auto repairs (13.33:4.62).

32 Achievement at sport, good sportsmanship (2.22:4.62).

33 "Trying" to do any task set by parent or child (0:1.54).

34 Creativity (0:1.54).

40 Interpersonal Behaviour

41 Appropriate communication e.g., confides in parent (11.11:6.15).

42 Appropriate behaviour to sibling or friend e.g., (unasked) gets drink for younger brother (cf. babysitting for sibling to enable parent to do other activities coded as 12) (4.44:3.08).

43 Appropriate mood e.g., being cheerful, not losing temper (0:3.08).

44 General pro-social behaviour e.g., generosity, helpful attitude, caring attitude, tolerance, courtesy, consideration (6.67:10.77).

45 Obedience (2.22:0).

46 Resourcefulness, independence, self-assertion, using initiative, including e.g., saving pocket-money, caring for own possessions, able to occupy self (6.67:9.23).

47 Punctuality (0:1.54).

48 Honesty (0:1.54).

50 School

51 Doing school assignments (2.22:6.15).

52 Doing well at school (11.11:7.69).

53 Getting ready for school on time (2.22:0).

54 Appropriate attitude to school, good behaviour at school (4.44:1.54).

55 Reasonable concentration span on school-work (2.22:0) = (99.98:100.03).

After ranking these behaviours it was discovered that 11, 13 and 52 were in the top five for both age-groups, and 31, 41, 44 and 46 were in the top nine. It was on this basis that an example was taken from each superordinate category (except 20) for use in the Parent Praise Questionnaire - see text.

### **Appendix 7.3: Preliminary Questionnaire Analysis - Significant Relationships**

#### **1. Relationships with Age**

A high positive relationship was found between age and recency of having been praised ( $r=.463$ ,  $p=.001$ ,  $N=45$ ). Thus the younger the child the more recently s/he was likely to have been praised. Variables such as whether the child is frequently at home (a toddler compared to an adolescent will be more available for praise) may well covary with this relationship.

Ages ranged from 1 to 22 years with a mean of 9.4 and a standard deviation of 5.06.

## 2. Age and Behaviour

Correlations were calculated between age of child and behaviours to determine whether different behaviours were praised at different ages. Although point-biserial correlation would have been a more appropriate form of analysis for this data, since it was not easily available it was decided to use Pearson  $r$  for what was regarded as a rough preliminary analysis.

There was a significant correlation between age and helping the parent do household chores ( $r=.265$ ,  $p=.025$ ), between age and appropriate toileting behaviour ( $r=-.303$ ,  $p=.012$ ), between age and dressing appropriately ( $r=-.29$ ,  $p=.016$ ), and between age and appropriate mood ( $r=.342$ ,  $p=.005$ ). These relationships are in an intuitively appropriate direction.

## 3. Age and Specific Locutions

Further intuitively appropriate relationships were found between age and the use of specific locutions. Significant correlations were found between specific praise of the behaviour and age ( $r=.328$ ,  $p=.007$ ), between "good girl/boy" and age ( $r=.380$ ,  $p=.0001$ ), and between telling the child how the parent feels about the behaviour and age ( $r=.381$ ,  $p=.002$ ).

## 4. Age and General Locutions

Significant correlations were found between "good girl/boy" and age ( $r=-.499$ ,  $p=.0001$ ), and between parent's exclamations of pleasure and age ( $r=.257$ ,  $p=.029$ ).

## 5. Behaviour and Locutions

Behaviours and locutions were cross-tabulated and several measures of association were calculated in an attempt to find any pattern of relationships between behaviour of child and locution of parent. Indices of association calculated were chi-squared, phi (or  $V$ ), tau-b and tau-c, and  $r$ . It should be noted, however, that in most cases there were insufficient data for truly meaningful interpretation. There are nevertheless some interesting indications in the data that specific behaviours tend to evoke specific parental locutions.

Thus, for example, thanking the child is associated with the child having helped around the house ( $\phi=.351$ ;  $\tau\text{-}b=.351$ ,  $p=.005$ ;  $\tau\text{-}c=.215$ ,  $p=.005$ ;  $r=.351$ ,  $p=.004$ ) as it is with helping the parent personally ( $\chi^2=5.75$ ,  $df=1$ ,  $p=.016$ ;  $\phi=.396$ ;  $\tau\text{-}b=.396$ ,  $p=.002$ ;  $\tau\text{-}c=.198$ ,  $p=.002$ ;  $r=.396$ ,  $p=.002$ ).

Parents tend to give specific praise when the child does her/his own chores ( $\chi^2=15.435$ ,  $df=2$ ,  $p=.0004$ ; Cramer's  $V=.529$ ;  $\tau\text{-}b=.426$ ,  $p=.0006$ ;  $\tau\text{-}c=.313$ ,  $p=.0006$ ;  $r=.486$ ,  $p=.0001$ ). Parents also tend to tell the child how they feel about it when the child does her/his own chores ( $\tau\text{-}b=.23$ ,  $p=.04$ ;  $\tau\text{-}c=.167$ ,  $p=.04$ ).

There was a significant relationship between giving attributional praise and the behaviour of feeding appropriately ( $\chi^2=8.32$ ,  $df=2$ ,  $p=.016$ ;  $V=.389$ ;  $\tau\text{-}b=.344$ ,  $p=.006$ ;  $\tau\text{-}c=.111$ ,  $p=.006$ ;  $r=.29$ ,  $p=.016$ ). Examination of the raw data revealed that young children may be told that they are "clever" for eating without mess, eating all the food, and so on. Parents may also attribute a mood to the child who feeds appropriately ( $\chi^2=8.07$ ,  $df=2$ ,  $p=.018$ ). Alternatively, they may comment on the child's physical characteristics ( $\chi^2=8.04$ ,  $df=2$ ,  $p=.018$ ;  $V=.382$ ;  $\tau\text{-}b=.249$ ,  $p=.03$ ;  $r=.325$ ,  $p=.007$ ) or make general comments to the child ( $\chi^2=8.154$ ,  $df=2$ ,  $p=.017$ ;  $r=.258$ ,  $p=.02$ ).

If the child toilets appropriately (including not wetting the bed) there is a tendency for the parent to tell her/him that s/he is a "good girl/boy" ( $\chi^2=6.93$ ,  $df=2$ ,  $p=.03$ ;  $V=.355$ ;  $\tau\text{-}b=.292$ ,  $p=.015$ ;  $\tau\text{-}c=.161$ ,  $p=.015$ ;  $r=.25$ ,  $p=.033$ ). However, the parent may tend not to tell the child how s/he feels about the behaviour ( $\tau\text{-}b=-.27$ ,  $p=.02$ ;  $\tau\text{-}c=-.158$ ,  $p=.02$ ;  $r=-.26$ ,  $p=.03$ ).

"Good girl/boy" may be used for dressing appropriately ( $r=.25$ ,  $p=.03$ ). When other self-care behaviours are engaged in, the parent tends to comment on the child's physical characteristics ( $\chi^2=26.9$ ,  $df=2$ ,  $p=.0001$ ;  $V=.7$ ;  $\tau\text{-}b=.46$ ,  $p=.0003$ ;  $\tau\text{-}c=.06$ ,  $p=.0003$ ;  $r=.294$ ,  $p=.015$ ). This is not an intuitively obvious association since the "self care" behaviours were not necessarily those related to physical appearance.

There is an association between the parent's globally appreciating the child and the child communicating appropriately ( $\chi^2=13.24$ ,  $df=1$ ,  $p=.0003$ ;  $\phi=1.00$ ,  $\tau\text{-}b=1.00$ ,  $p=.0001$ ;  $\tau\text{-}c=.07$ ,  $p=.0001$ ;  $r=1.00$ ,  $p=.0001$ ). Or the parent may also exclaim with pleasure over the child's appropriate communication ( $\phi=.486$ ;  $\tau\text{-}b=.486$ ,  $p=.0002$ ;  $\tau\text{-}c=.067$ ,  $p=.0002$ ;  $r=.486$ ,  $p=.0001$ ).

Parents tend to thank their children for appropriate interpersonal behaviour ( $\tau\text{-}b=.227$ ,  $p=.048$ ;  $\tau\text{-}c=.089$ ,  $p=.048$ ;  $r=.227$ ,  $p=.048$ ), or they may tell the child how they feel about the behaviour ( $\chi^2=8.03$ ,  $df=2$ ,  $p=.02$ ;  $V=.38$ ), or make general comments in response to this behaviour ( $\chi^2=8.74$ ,  $df=2$ ,  $p=.013$ ).

Attributional praise is associated with the exhibition of an appropriate mood ( $\chi^2=55$ ,  $df=2$ ,  $p=.00001$ ;  $V=1.00$ ;  $\tau\text{-}b=.375$ ,  $p=.003$ ;  $\tau\text{-}c=.07$ ,  $p=.0003$ ;  $r=.6$ ,  $p=.0001$ ). The parent may tell the child what future behaviour s/he expects when an appropriate mood is displayed ( $\chi^2=3.92$ ,  $df=1$ ,  $p=.05$ ;  $\phi=.57$ ;  $\tau\text{-}b=.567$ ,  $p=.0001$ ;  $\tau\text{-}c=.069$ ,  $p=.0001$ ;  $r=.567$ ,  $p=.0001$ ).

If the child completes a school assignment the parent is likely to attribute a mood to that child ( $\chi^2=12.76$ ,  $df=2$ ,  $p=.002$ ;  $V=.48$ ;  $\tau\text{-}b=.255$ ,  $p=.03$ ), and if the child does well at school the parent will likely ask that child how s/he feels about it ( $\phi=.38$ ;  $\tau\text{-}b=.38$ ,  $p=.003$ ;  $r=.38$ ,  $p=.002$ ).

As with other significant results reported in this Appendix, most of these relationships were in an intuitively meaningful direction, which indicated that although the data and form of analysis may not have been of great quality, it did appear that a pattern was emerging.

### 6. Attributional Praise

One of the main points of interest to the researcher initially was to determine which characteristics were attributed to children by their parents as part of praising utterances. Those characteristics which were attributed, and their frequency of occurrence, are shown in Table A7.3.

**Table A7.3:** Characteristics which parents reported attributing to their children.

Characteristic	Absolute frequency
clever	11
helpful	2
thoughtful	2
tidy	1
reliable	1
courageous	1*
patient	1*
optimistic	1*
tolerant	1*
big boy (grown up)	1
* contributed by same respondent	

---

## **Appendix 7.4: Second Preliminary Questionnaire**

### **ATTENTION PARENTS OR PARENT-SUBSTITUTES**

#### **Have you cared for an 8-year old or a 12-year old child within the last few years?**

I am devising a detailed questionnaire about parent-child interactions. My focus is on children of about 8, and children of about 12 (give or take no more than 6 months either side of 8 or 12 years). If your child is currently about 8 or about 12, or if you remember the sorts of things children of those ages did, although your children are now somewhat older, please could you answer the questions below. Your child, or the child in your care, must be living with you on at least a semi-permanent basis.

If you have fairly recently cared for an 8-year old and a 12-year please complete both sections.

The information you provide will assist me in the preparation of the final questionnaire. Thank you very much for your help.

8-YEAR OLDS

(circle appropriate)

1. What gender are you, the parent/care-giver?                      female                      male
2. What gender is your 8-year old?                                      female                      male
3. I would like to know for which behaviours 8-year olds are likely to be praised. Please specify the behaviour for which you are most likely to praise your 8-year old, followed by the next most likely, and so on. List as many behaviours as seem appropriate for your child, or to the limit of your memory. (6 lines provided)

12-YEAR OLDS

(Wording was identical to that used above, except for the substitution of "12-year old" for "8-year old"; 6 lines also provided).

Appendix 7.5: Parent Praise QuestionnairePARENT-CHILD QUESTIONNAIRE

I am interested in the sorts of things parents say to their children when they are pleased with their behaviour. Most of this questionnaire, therefore, is concerned with things that you might say to your child in specific situations. I will give you some explanatory examples shortly, but firstly I would like you to answer a few preliminary questions please.

1. Your child's christian name.....surname.....
2. Your child's age.....years.....months
3. Your child's gender (M or F).....
4. Is your child's native language English? (YES or NO).....
5. Is your native language English? (a) mother (YES or NO).....(b) father YES or NO).....
6. Because of school, sleeping, hobbies and activities outside the home, and so on, the amount of time parents spend in contact with their children varies widely. I would like to know how many hours per day, on average, you are in contact with your child, either just you and your child, or in the company of others.

During the week (tick appropriate):

- .....less than an hour per day
- .....about an hour per day
- .....2-3 hours per day
- .....between 3 and 5 hours per day
- .....more than 5 hours per day

During the weekend (tick appropriate)

- .....less than an hour per day
- .....about an hour per day
- .....2-3 hours per day

.....between 3 and 5 hours per day

.....more than 5 hours per day

Now please turn the page for an example of the questions which comprise the remainder of the questionnaire.

EXAMPLE (over page):

Situation: Your child has just finished her/his homework which s/he did without any prompting from you.

Firstly, I will ask you how likely it is that this situation would occur in your family. You will be asked to circle a number from 1 to 7 to indicate just how likely it is that your child would behave in this way. In the example, the parents have circled "7" because it is extremely likely that their child would do her/his homework without being asked:

extremely 1 2 3 4 5 6 **7** extremely  
unlikely likely

Next, I will ask you to imagine the situation as vividly as possible: if it has actually happened, try to recall the most recent occasion in as much detail as you can.

For each response you will be asked to circle the number that best represents how likely you are to say something like this in this situation. You might say a number of different things, and perhaps different things on different occasions. Consider each example in turn, and rate the likelihood that you would say that, or something very similar to it. Each scale has 7 points, with "1" representing "extremely unlikely" and "7" representing "extremely likely". Use the points in between to represent intermediate likelihoods: for instance, in the example below, the parents have circled number "4" because they feel that they would respond this way about half the time.

(a) Praising the specific behaviour e.g., "It's really good that you have done your homework without being told".

extremely 1 2 3 **4** 5 6 7 extremely  
unlikely likely

However, in this next example, they have circled "5" because they think that they are rather more likely to respond this way.

(b) Attributing a characteristic to your child e.g., "I think you are very industrious".

extremely 1 2 3 4 **5** 6 7 extremely  
unlikely likely

In the questionnaire, 4 different situations are described. You will be presented with a series of examples of things parents might say, together with a scale for each one - as in the example above - so that you can indicate just how likely you would be to respond in that way in the given situation. I would like you to imagine or remember (whichever is appropriate) one situation at a time, and then for each of the examples of responses circle one number, the one that best represents how likely it is that you would respond in this way.



There are no right or wrong answers. I am interested in the sorts of things parents say to their children when they are pleased with their behaviour. Since it is quite possible that I have not included every possible response that you might make, after each situation I have left some space for you to add anything that you would like to. Please tell me what else you might say to your child in this situation.

Situation 1: Your child has tidied her/his room without being asked.

Firstly, how likely is it that your child would behave in the way described in the situation, that is, how likely would s/he be to tidy her/his room without being asked?

extremely 1 2 3 4 5 6 7 extremely  
unlikely likely

Now, for each response please circle the number that best represents how likely you are to respond this way in this situation.

*(rating scales for locutions included in the questionnaire as administered have been omitted here beyond Situation 1, locution (a))*

(a) Praising the specific behaviour e.g., "It's really good that you have tidied your room".

extremely 1 2 3 4 5 6 7 extremely  
unlikely likely

(b) Expressing an expectation about your child's future behaviour e.g., "Now you'll always keep your room tidy".

(c) Attributing a characteristic to your child e.g., "I think you are very neat and tidy".

(d) Attributing motivation to your child e.g., "You must have wanted to help me".

(e) Attributing a mood or feelings to your child e.g., "You must feel pleased with yourself now that your room is tidy".

(f) Global appreciation of your child e.g., "You are a great/wonderful/terrific kid!"

(g) Question about how your child feels e.g., "Does it feel good to have tidied your room?"

(h) Labelling the behaviour e.g., "Tidying your room is very helpful to me".

(i) Attributing ability to your child e.g., "I knew you could get your room tidy".

(j) Commenting on your child's physical characteristics e.g., "You have a lovely smile when you are happy".

(k) Telling your child s/he is good e.g., "Good girl/boy".

(l) Thanking your child e.g., "Thank you for tidying your room".

(m) Indicating your feelings about your child's behaviour e.g., "I'm very pleased that you have tidied your room".

(n) Exclamations e.g., "Great! Wonderful!"

(o) General comments e.g., "Now that you've tidied your room I guess you might like to watch T.V. for a while, or would you like a snack?" (or any unrelated comments)

(p) Noticing that the behaviour has occurred e.g., "I see that you have tidied your room".

If you would say anything to your child in this situation other than the examples listed, please write it out here, recording as accurately as you can your exact words:

*(4 lines provided)*

**Situation 2:** Your child has just brought home a weekly/monthly/term report from school and the teacher says that s/he is doing well.

Firstly, how likely is your child to behave in the way described in the situation, that is, how likely is s/he to bring home a good school report?

extremely 1 2 3 4 5 6 7 extremely  
unlikely likely

Now, for each response please circle the number that best represents how likely you are to respond this way in this situation.

- (a) Praising the specific behaviour e.g., "It's terrific that you have done so well at school".
- (b) Expressing an expectation about your child's future behaviour e.g., "Now you will do really well".
- (c) Attributing a characteristic to your child e.g., "I think you are clever".
- (d) Attributing motivation to your child e.g., "You must have wanted to do well".
- (e) Attributing a mood or feelings to your child e.g., "You must feel happy to have done well".
- (f) Global appreciation of your child e.g., "You are a great/wonderful/terrific kid!"
- (g) Question about how your child feels e.g., "Does it feel good to have done well at school?"
- (h) Labelling the behaviour e.g., "Doing well at school is pretty smart behaviour".
- (i) Attributing ability to your child e.g., "I knew you could do it".
- (j) Commenting on your child's physical characteristics e.g., "You have a lovely smile when you are happy".
- (k) Telling your child s/he is good e.g., "Good girl/boy".
- (l) Thanking your child e.g., "Thank you for bringing home this report".
- (m) Indicating your feelings about your child's behaviour e.g., "I'm pleased that you have done well".
- (n) Exclamations e.g., "Great! Wonderful!"
- (o) General comments e.g., "I guess you would like to do something special now, like watching T.V. or visiting your friend" (or any unrelated comments).
- (p) Noticing that the behaviour has occurred e.g., "I see that you have done well at school".

If you would say anything to your child in this situation other than the examples listed, please write it out here, recording as accurately as you can your exact words:

*(4 lines provided)*

**Situation 3:** Your child has been practising and/or improving at some skilled activity that either you or s/he wants her/him to accomplish (e.g., piano, dancing, riding bicycle etc. - in your own mind substitute such an activity that applies to your child).

Firstly, how likely is it that your child would behave in the way described in the situation, that is, how likely is s/he to practise a skilled activity that you or s/he wants her/him to accomplish?

extremely 1 2 3 4 5 6 7 extremely  
unlikely likely

Now, for each response please circle the number that best represents how likely you are to respond this way in this situation.

- (a) Praising the specific behaviour e.g., "It's really good that you are practising piano/dancing/bike etc."
- (b) Expressing an expectation about your child's future behaviour e.g., "I expect you'll spend more time practising now".
- (c) Attributing a characteristic to your child e.g., "You are very persistent".
- (d) Attributing motivation to your child e.g., "You must really want to learn piano/dance/bike etc."
- (e) Attributing a mood or feelings to your child e.g., "You must feel pleased with yourself that you are practising piano/dance/bike etc."
- (f) Global appreciation of your child e.g., "You are a great/wonderful/terrific kid!"
- (g) Question about how your child feels e.g., "Does it feel good to be learning to play piano/dance/ride bike etc.?"
- (h) Labelling the behaviour e.g., "Practising piano/dancing/bike etc. is sensible".
- (i) Attributing ability to your child e.g., "I knew you could learn piano/dance/bike etc."
- (j) Commenting on your child's physical characteristics e.g., "You have a lovely smile when you are enjoying yourself".
- (k) Telling your child s/he is good e.g., "Good girl/boy".
- (l) Thanking your child e.g., "Thank you for practising piano/dance/bike etc."
- (m) Indicating your feelings about your child's behaviour e.g., "I'm pleased that you have been practising piano/dance/bike etc."
- (n) Exclamations e.g., "Terrific! Wonderful!"
- (o) General comments e.g., "Now that you've done your practice, I guess you'd like to watch T.V. for a while" (or any unrelated comments).
- (p) Noticing that the behaviour has occurred e.g., "I see that you have been practising piano/dance/bike etc."

If you would say anything to your child in this situation other than the examples listed, please write it out here, recording as accurately as you can your exact words:

*(4 lines provided)*

Situation 4: Your child has saved up to buy a special gift for you, another family member, or a friend.

Firstly, how likely is it that your child would behave in the way described in the situation, that is, how likely is s/he to save up to buy a special gift for someone?

extremely 1 2 3 4 5 6 7 extremely  
unlikely likely

Now, for each response please circle the number that best represents how likely you are to respond this way in this situation.

- (a) Praising the specific behaviour e.g., "It's really good that you have saved up to buy that gift".
- (b) Expressing an expectation about your child's future behaviour e.g., "Now I expect you'll always remember to buy nice things on birthdays".
- (c) Attributing a characteristic to your child e.g., "I think you are very generous".
- (d) Attributing motivation to your child e.g., "You must have really wanted to buy something special".
- (e) Attributing a mood or feelings to your child e.g., "You must feel pleased with yourself to have saved up for that lovely gift".
- (f) Global appreciation of your child e.g., "You are a great/wonderful/terrific kid!"
- (g) Question about how your child feels e.g., "Does it feel good to have saved up to buy that lovely gift?"
- (h) Labelling the behaviour e.g., "Saving up to buy a nice gift is very thoughtful".
- (i) Attributing ability to your child e.g., "I knew you could save up if you tried".
- (j) Commenting on your child's physical characteristics e.g., "You have a lovely smile when you are happy".
- (k) Telling your child s/he is good e.g., "Good girl/boy".
- (l) Thanking your child e.g., "Thank you for saving up for this lovely gift".
- (m) Indicating your feelings about your child's behaviour e.g., "I'm very pleased that you have saved up to buy that gift".
- (n) Exclamations e.g., "Great! Wonderful!"
- (o) General comments e.g., "What would you like to do this weekend? We could go to the movies, or go skating" (or any unrelated comments).
- (p) Noticing that the behaviour has occurred e.g., "I see that you have saved up to buy that lovely gift".

If you would say anything to your child in this situation other than the examples listed, please write it out here, recording as accurately as you can your exact words:

*(4 lines provided)*

Appendix 7.6 Child Version of Parent Praise Questionnaire

NAME.....

AGE.....Years.....Months

SCHOOL.....

GENDER.....

(boy or girl)

CHILD-PARENT QUESTIONNAIRE

When parents are pleased with their children's behaviour they are likely to say nice things to them. I would like to know what your parents, your mother or your father, say to you when they are pleased with things you have done.

In the questionnaire 2 situations are described. Under each one are some examples of the different things your parents might say to you if that situation happened. I want you to tell me by circling a number how likely it is that your parents would say each of these things.

FOR EXAMPLE: You have just finished your homework which you did without being told to by your parents.

Firstly, I will ask you to tell me how likely this is to happen by circling a number, like this

very very 1 2 3 4 5 6 (7) very very  
unlikely likely

In the example the child has circled 7 because it is very very likely that she or he would do homework without being told. If it were very very unlikely the child would circle 1. If the child circled 4 it would mean that sometimes she or he did homework without being asked, and sometimes she or he didn't. You can use any of the numbers, 1, 2, 3, 4, 5, 6, or 7 to show me how likely it is that you would do your homework without being told to by your parents. The bigger the number, the more likely it is that the child, or you, did this.

Next, I will give you some examples of what your parents might say to you in this situation. Can you try to remember a time when you did your homework without being told to. Then tell me, by circling a number, how likely it is that your parents might say this to you in this situation. It doesn't matter if they said something a little bit different from the example, as long as what they said was quite a lot like it.

(a) Your parents tell you that was very good behaviour, for example, "It's really good that you have done your homework without being told".

very very 1 2 3 4 5 (6) 7 very very  
unlikely likely

In this example the child has circled 6 to show me that it is pretty likely that her or his parents would say this.

(b) Your parents tell you that you are a certain sort of person, for example, "I think you are very hard-working".

very very ① 2 3 4 5 6 7 very very  
unlikely likely

In this example the child has circled 1 because her or his parents would be very very unlikely to say that.

Try this one for yourself:

(c) Your parents tell you how they feel about what you have done, for example, "I am pleased with you for doing your homework without being asked".

very very 1 2 3 4 5 6 7 very very  
unlikely likely

Circle ONE number to show me how likely it is that your parents would say this to you if you did your homework without being told to.

If you are not sure what to do, please ask. If you know how to answer the questions you can turn the page and begin. Be sure to circle ONE number for EACH example.....

**SITUATION 1:** You have tidied your own room without your mother or father telling you to.

Firstly, circle ONE number to show me how likely you are to tidy your room without being told.

very very 1 2 3 4 5 6 7 very very  
unlikely likely

Now, I will give you some examples of the different things your parents might say to you if you tidied your room without being told. For each example, circle ONE number to show me how likely it is that your parents would say something a lot like this. Remember, the bigger the number, the more likely it is that your parents might say this to you in this situation.

*(rating scales for locutions included in the questionnaire as administered have been omitted here beyond Situation 1, locution (a))*

(a) Your parents tell you that was very good behaviour, for example, "It's really good that you have tidied your room".

very very 1 2 3 4 5 6 7 very very  
unlikely likely

(b) Your parents tell you how you might behave later, for example, "Now you'll always keep your room tidy".

(c) Your parents tell you that you are a certain sort of person, for example, "I think you are very neat and tidy".

- (d) Your parents tell you that you must have wanted to do that, for example, "You must have wanted to help me".
- (e) Your parents guess about how you are feeling, for example, "You must feel pleased with yourself now that your room is tidy".
- (f) Your parents say really nice personal things about you, for example, "You are a great/wonderful/terrific kid!"
- (g) Your parents ask you about how you feel, for example, "Does it feel good to have tidied your room?"
- (h) Your parents say something not about you but about what you did, for example, "Tidying your room is very helpful to me".
- (i) Your parents tell you that they knew you could do that, for example, "I knew you could get your room tidy".
- (j) Your parents praise your looks, for example, "You have a lovely smile when you are happy".
- (k) Your parents tell you that you are good, for example, "Good girl/boy".
- (l) Your parents thank you, for example, "Thank you for tidying your room".
- (m) Your parents tell you how they feel about what you have done, for example, "I'm very pleased that you have tidied your room".
- (n) Your parents say something really pleased, for example, "Great! Wonderful!"
- (o) Your parents say all sorts of other things, not necessarily about what you did, for example, "Now that you've tidied your room I guess you might like to watch T.V. for a while, or would you like a snack?" (or any unrelated comments)
- (p) Your parents notice what you did, for example, "I see that you have tidied your room".

If your parents would say anything else to you in this situation, different from the examples, please tell me what they would say - can you try to remember the exact words? (4 lines provided)

SITUATION 2: You have saved up to buy a special gift for your mother or father, or for someone else in your family, or for a friend.

Firstly, circle ONE number to show me how likely you are to save up to buy a special gift for someone.

very	very	1	2	3	4	5	6	7	very	very
unlikely									likely	likely

Now, I will give you some examples of the different things your parents might say to you if you tidied your room without being told. For each example, circle ONE number to show me how likely it is that your parents would say something a lot like this. Remember, the bigger the number, the more likely it is that your parents might say this to you in this situation.

- (a) Your parents tell you that was very good behaviour, for example, "It's really good that you have saved up to buy that gift".

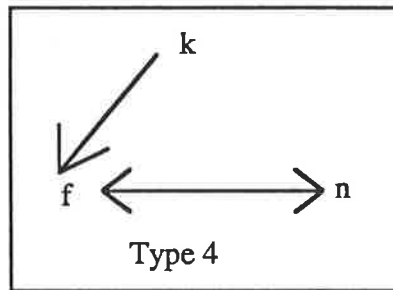
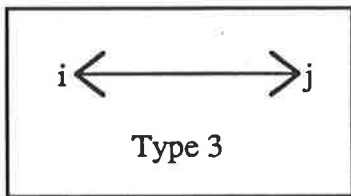
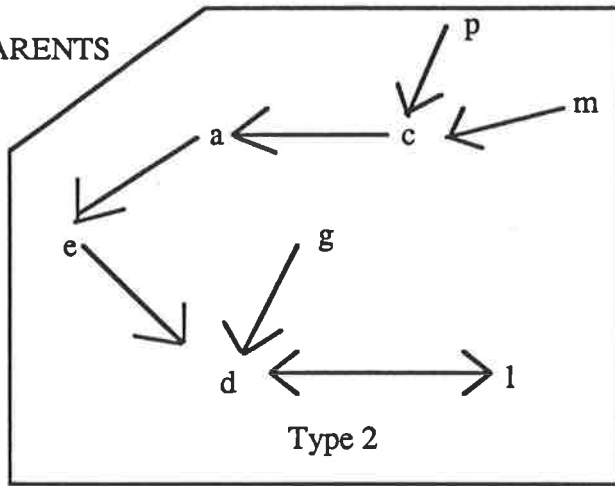
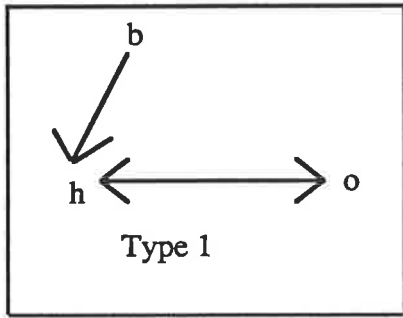
- (b) Your parents tell you how you might behave later, for example, "Now I expect you'll always remember to buy nice things on birthdays".
- (c) Your parents tell you that you are a certain sort of person, for example, "I think you are very generous".
- (d) Your parents tell you that you must have wanted to do that, for example, "You must have really wanted to buy something special".
- (e) Your parents guess about how you are feeling, for example, "You must feel pleased with yourself to have saved up for that lovely gift".
- (f) Your parents say really nice personal things about you, for example, "You are a great/wonderful/terrific kid!"
- (g) Your parents ask you about how you feel, for example, "Does it feel good to have saved up to buy that lovely gift?"
- (h) Your parents say something not about you but about what you did, for example, "Saving up to buy a nice gift is very thoughtful".
- (i) Your parents tell you that they knew you could do that, for example, "I knew you could save up if you tried".
- (j) Your parents praise your looks, for example, "You have a lovely smile when you are happy".
- (k) Your parents tell you that you are good, for example, "Good girl/boy".
- (l) Your parents thank you, for example, "Thank you for saving up for this lovely gift".
- (m) Your parents tell you how they feel about what you have done, for example, "I'm very pleased that you have saved up to buy that gift".
- (n) Your parents say something really pleased, for example, "Great! Wonderful!"
- (o) Your parents say all sorts of other things, not necessarily about what you did, for example, "What would you like to do this weekend? We could go to the movies, or go skating" (or any unrelated comments).
- (p) Your parents notice what you did, for example, "I see that you have saved up to buy that lovely gift".

If your parents would say anything else to you in this situation, different from the examples, please tell me what they would say - can you try to remember the exact words? (4 lines provided)

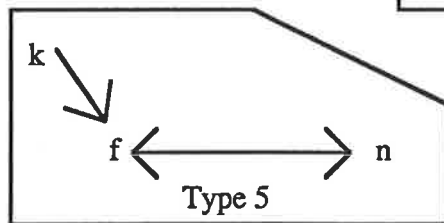
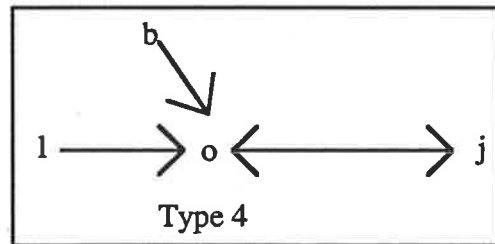
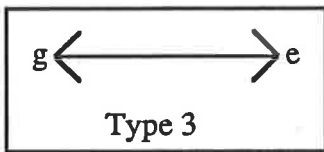
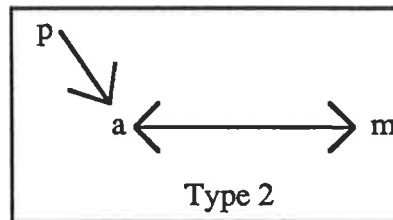
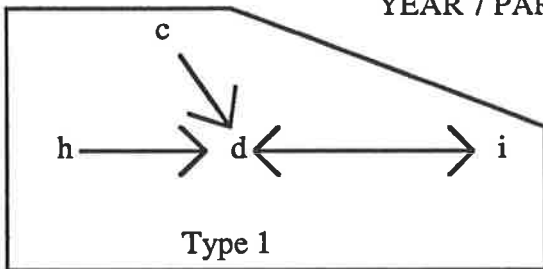


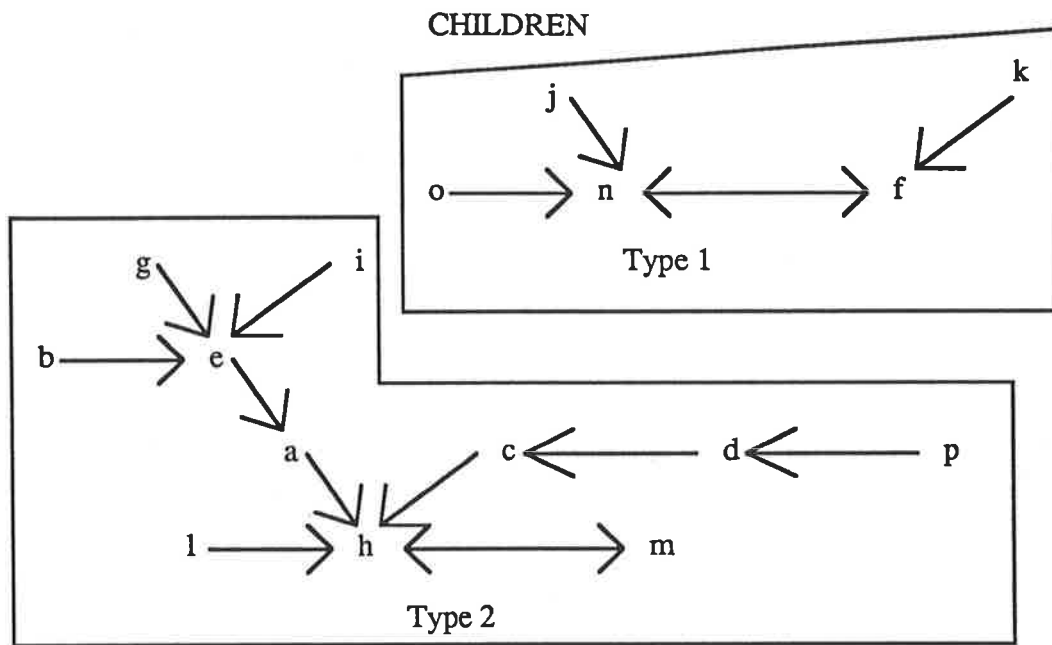
**Appendix 7.7: Results of McQuitty Linkage Analyses**

**YEAR 3 PARENTS**



**YEAR 7 PARENTS**





**Appendix 7.8: Instructions for Parent Praise Questionnaire, Retrospective Version for Tertiary Students**

**PARENT PRAISE QUESTIONNAIRE**

I am interested in the sorts of things parents say to their children when they are pleased with their behaviour. This questionnaire is concerned with things that your parents might have said to you when you were younger. Four situations are described in the questionnaire. Under each one are some examples of the sorts of things your parents might have said to you in that situation. I would like you to tell me just how likely your parents were to say each of these different things to you. Please try to remember the sorts of things that either of your parents, your mother or your father (or other primary caregivers), said to you when you were around 12 years of age. That is, it may be that similar situations still arise for you, and that your parents still praise you in similar ways, but try to focus on the praise that you received when you were younger.

*(Examples and situations identical to those in Parent Praise Questionnaire, except for addition of locutions q, r and s. For example, for the first situation, tidying own room unasked, these were added -*

(q) Indicating how you will benefit from your behaviour e.g., "Now you'll be able to find things in your room".

extremely unlikely	1	2	3	4	5	6	7	extremely likely
--------------------	---	---	---	---	---	---	---	------------------

(r) Comparing your behaviour with that of your sister/brother/classmates/others e.g., ".....would not do as good a job as you have done".

extremely unlikely	1	2	3	4	5	6	7	extremely likely
--------------------	---	---	---	---	---	---	---	------------------

(s) Attributing behaviour to you e.g., "You must have worked hard on your room".  
 extremely unlikely 1 2 3 4 5 6 7 extremely likely

*Similar additions were made to the other 3 situations.)*

### Appendix 7.9: Parent Praise Questionnaire/ Reinforcement History Questionnaire Study

Means and standard deviations for the different types of praise are shown in Table A7.9.1.

**Table A7.9.1:** Means and standard deviations for different praise types (ratings by tertiary students retrospective to the age of about 12 years).

Locution	Mean	s.d.
a	19.07	4.99
b	10.59	4.86
c	15.06	5.23
d	13.15	5.33
e	12.75	5.32
f	12.37	6.78
g	10.73	5.29
h	15.81	4.53
i	14.33	5.92
j	10.23	7.14
k	16.50	5.95
l	14.09	4.06
m	18.21	4.56
n	13.29	6.49
o	9.54	5.20
p	17.48	5.79
q	13.73	4.80
r	7.50	5.09
s	15.71	5.09

Table A7.9.2 shows the mean praise scores for each situation.

**Table A7.9.2:** Means and standard deviations for overall praise by situation.

Situation	1	2	3	4	Total
Mean	64.46	68.29	62.96	64.44	260.15
s.d.	18.54	19.53	17.02	19.35	65.05

### Appendix 7.10: Development of Maryland Parent Attitude Survey - Description of Parent "Types"

In devising the scale a pool of items was given to a group of nine psychologists with instructions to categorize each item according to the type of parent the item represented. The type of parent and the description were developed from the literature on parental types. The four relevant categories are as follows (from Pumroy, 1966):

(1) Disciplinarian parents "....need and expect fairly strict obedience from the child. The child knows that if he does not comply he will be punished, as the rules are explicitly stated by the parent. This punishment is carried out in a fair and consistent manner. This parent is constantly pushing the child to achieve beyond his ability forcing him to grow up early" (p. 75).

(2) Indulgent parents "....are child centered; the child is allowed to have his own way in all matters. The child is showered with warmth and affection. While there are attempts at discipline, the child knows the rules can be circumvented. The child is not encouraged to show any initiative and seldom does he have any responsibilities around the house. Frequently, but for no particular reason other than an impulse on the part of the parents, the child is given gifts and treats" (pp. 74-75).

(3) Protective parents "....are primarily concerned with seeing to it that the child takes a minimum amount of risks. Consequently, the parents are overly watchful of the child and always alert to possible dangerous aspects of all situations. These parents perform tasks for the child long beyond the time the child is capable of doing the task for himself. The child is not allowed to grow up and do things for himself (e.g., feeding, bathing, going to school alone etc.) for fear that something will happen to him" (p. 75).

(4) Rejecting parents "....are openly and actively hostile towards their children. This hostility is frequently reflected in discipline and punishment. This discipline and punishment seems to be based more on the general negative feelings of the parent than on the behaviour of the child. Because of the hostility engendered in the child, these parents frequently feel that children are incorrigible" (p. 75).

### Appendix 7.11: Praise Preference Questionnaire

NAME.....

AGE.....Years.....Months

SCHOOL.....

GENDER.....

(boy or girl)

#### PRAISE PREFERENCE QUESTIONNAIRE

When parents are pleased with their children's behaviour, they are likely to say nice things to them. Parents might say different things to their children in different situations. Children might like some of the things their parents say to them more than other things. I am interested in how you feel about the different things your parents say.

In this questionnaire 2 situations are described. Under each one are some examples of the different things your parents might say to you if that situation happened. I want you to tell me, by circling a number, how much you would like to hear your parents, your mother or your father, say this to you in the described situation. It doesn't matter if your parents are

not very likely ever to say what is given in the example - just try to think whether you would like to hear them say it.

For example:

Situation: You have just finished your homework which you did without being told to by your parents.

Imagine that this happened to you - your parents would be pleased. They might say - "It's really good that you have done your homework without being told to."

I want you to tell me how much you would like to hear your parents say this to you in this situation. Look at this example -

I would hate to hear 1 2 (3) 4 5 6 7 I would really like to hear  
my parents say this to me my parents say this to me

In this example the child has circled 3 which means that s/he would not like to hear her/his parents say this very much. If the child had circled 1 it would mean that s/he would hate to hear her/his parents say this. But if the child had circled a bigger number, say 6, it would mean that the child would like to hear her/his parents say this quite a lot.

Try this example yourself (remember, you have just finished your homework which you did without being told to by your parents)-

"I think you are a very hard-worker."

I would hate to hear 1 2 3 4 5 6 7 I would really like to hear  
my parents say this to me my parents say this to me

Please circle ONE NUMBER to show me how much you would like to hear your parents say this to you if you had done all your homework without being told to. Remember, **THE BIGGER THE NUMBER THE MORE YOU WOULD LIKE TO HEAR YOUR PARENTS SAY THIS TO YOU.** Don't forget - there's no need to worry about whether they would say this to you. Just tell me what you would like to hear them say.

The questionnaire is just like the example. I want you to circle a number for each different thing that parents might say to tell me how much you would like to hear your parents say this to you in the situation described at the beginning.

If you are not sure what to do, please ask. If you know how to answer the questions, you can turn the page and begin. Be sure to circle ONE number for EACH example.

*(rating scales for locutions included in the questionnaire as administered have been omitted here beyond Situation 1, locution (a))*

**Situation 1:** You have tidied your room which you did without your mother or father telling you to.

- (a) "It's really good that you have tidied your room."  
 I would hate to hear 1 2 3 4 5 6 7 I would really like to hear  
 my parents say this to me my parents say this to me
- (b) "Now you'll always keep your room tidy."  
 (c) "I think you are very neat and tidy."  
 (d) "You must have wanted to help me."  
 (e) "You must feel pleased with yourself now that your room is tidy."  
 (f) "You are a great kid, a wonderful kid, a terrific kid!"  
 (g) "Does it feel good to have tidied your room?"  
 (h) "Tidying your room is very helpful to me."  
 (i) "I knew you could get your room tidy."  
 (j) You have a lovely smile when you are happy."  
 (k) "Good girl." OR "Good boy."  
 (l) "Thank you for tidying your room."  
 (m) "I'm very pleased that you have tidied your room."  
 (n) "Great! Wonderful!"  
 (o) "Now that you've tidied your room I guess you might like to watch T.V. for a while, or would you like a snack?"  
 (p) "I see that you have tidied your room."  
 (q) "Now you'll be able to find things in your room."  
 (r) ".....(Think of the name of your brother, sister, friend or any other person) would not do as good a job as you have done."  
 (s) "You must have worked hard on your room."

**Situation 2:** You have saved up to buy a special gift for your mother or father, or for someone else in your family, or a friend."

- (a) "It's really good that you have saved up to buy that gift."  
 (b) "Now I expect you'll always remember to buy nice things on birthdays."  
 (c) "I think you are very generous."  
 (d) "You must have really wanted to buy something special."  
 (e) "You must feel pleased with yourself to have saved up for that lovely gift."  
 (f) "You are a great kid, a wonderful kid, a terrific kid!"  
 (g) "Does it feel good to have saved up to buy that lovely gift?"  
 (h) "Saving up to buy a nice gift is very thoughtful."  
 (i) "I knew you could save up if you tried."  
 (j) "You have a lovely smile when you are happy."

- (k) "Good girl" OR "Good boy."  
 (l) "Thank you for saving up for this lovely gift."  
 (m) "I'm very pleased that you have saved up to buy that gift."  
 (n) "Great! Wonderful!"  
 (o) "What would you like to do this weekend? We could go to the movies, or go skating."  
 (p) "I see that you have saved up to buy that lovely gift."  
 (q) "You'll find it's a very rewarding feeling when you save up the way you have done."  
 (r) ".....(Think of the name of your brother, sister, friend, or any other person) wouldn't think of doing such a lovely thing."  
 (s) "You must have saved up hard."

**Appendix 7.12: Means and Standard Deviations of Scores on the MPAS - Pumroy's Results**

**Table A7.12: MPAS scoring - Pumroy's results (N (Males)=196; N (Females)=187).**

Subscale	Gender	Mean	s.d.
Disciplinarian	Male	25.55	7.10
	Female	23.96	6.35
Indulgent	Male	20.52	6.78
	Female	23.05	6.60
Protective	Male	24.24	6.53
	Female	23.99	4.90
Rejecting	Male	18.50	5.91
	Female	18.59	6.04

**Appendix 7.13: Results of Multi-factor Analyses to Determine Age and Gender Effects of Preference Ratings - Locution by Locution Analyses and Tables of Means**

**Note:** For all tables appearing in this appendix, N's are as shown in Table A7.13.0.

**Table 7.13.0: Number of respondents, by year and gender, providing data entering into subsequent analyses.**

Group	Male	Female
1 (Year 5)	22	9
2 (Year 7)	32	14
3 (Year 10)	51	47

**Locution a - Praising the specific behaviour e.g., "It's good that you have...."**

There was no gender effect and no interaction for locution a, but a significant age effect (see Table A7.13.1a).

**Table A7.13.1a:** Locution a - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	242.90	169	1.44		
Constant	4231.20	1	4231.20	2943.87	.01
Gender	.34	1	.34	.239	.63
Age	34.29	2	17.15	11.93	.0001
Gender by Age	.004	2	.002	.002	.998

Means and s.d.'s which indicate that the locution is liked less by the oldest group are shown in Table A7.13.1b.

**Table A7.13.1b:** Locution a - Means and standard deviations, by group and gender.

Gender Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.23	1.33	5.50	1.06
2 (Year 7)	5.37	.92	5.64	.89
3 (Year 10)	4.42	1.36	4.67	1.20

Locution b - Expressing an expectation about future behaviour e.g., "Now I expect you'll...."

For locution b there is both a gender and an age effect.

**Table A7.13.2a:** Locution b - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	252.49	169	1.49		
Constant	1121.42	1	1121.42	750.60	.01
Gender	7.46	1	7.46	4.99	.027
Age	24.63	2	12.31	8.24	.0001
Gender X Age	1.99	2	.99	.67	.513

**Table A7.13.2b:** Locution b - Means and standard deviations, by group and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	3.59	1.52	2.83	1.29
2 (Year 7)	2.63	1.51	2.17	1.10
3 (Year 10)	2.36	.92	2.20	1.15

Thus as the children grew older they liked this locution less, and females liked it less than did males.



Locution c - Attribution of a characteristic e.g., "You are a ...person"

Liking for locution c decreased as age increased.

**Table A7.13.3a: Locution c - Results of analysis of variance, age and gender.**

Source of variation	SS	df	MS	F	p
Within cells	334.03	169	1.98		
Constant	4236.12	1	4236.12	2143.26	.01
Gender	.23	1	.23	.116	.73
Age	28.17	2	14.08	7.125	.001
Gender X Age	.46	2	.23	.116	.89

**Table A7.13.3b: Locution c - Means and standard deviations, by group and gender.**

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.65	1.37	5.94	1.63
2 (Year 7)	4.89	1.31	4.89	1.53
3 (Year 10)	4.55	1.45	4.79	1.34

Locution d - Attribution of motivation e.g., "You must have wanted to...."

There were no significant effects for locution d.

Locution e - Attributing a mood or feelings e.g., "You must feel pleased with yourself for...."

There was a significant age effect for locution e.

**Table A7.13.4a: Locution e - Results of analysis of variance, age and gender.**

Source	SS	df	MS	F	p
Within cells	391.75	169	2.32		
Constant	2776.05	1	2776.05	1197.58	.01
Gender	1.45	1	1.45	.62	.43
Age	36.83	2	18.41	7.94	.001
Gender X Age	1.93	2	.96	.42	.661

**Table A7.13.4b: Locution e - Means and standard deviations, by age and gender.**

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	4.93	1.46	4.78	1.46
2 (Year 7)	4.23	1.59	3.86	1.63
3 (Year 10)	3.56	1.55	3.70	1.45

Locution f - Global appreciation e.g., "You are great....etc."

There was a significant age effect for locution f.

**Table A7.13.5a:** Locution f - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	723.95	169	4.28		
Constant	3689.21	1	3689.21	861.21	.01
Gender	1.56	1	1.56	.36	.55
Age	70.71	2	35.35	8.25	.0001
Gender X Age	.31	2	.16	.04	.964

**Table A7.13.5b:** Locution f - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.64	1.71	6.22	1.98
2 (Year 7)	4.63	1.96	4.92	2.40
3 (Year 10)	3.96	2.11	4.35	2.16

Locution g - Question about feelings e.g., "Does it feel good to have....?"

There was a significant age effect for locution g.

**Table A7.13.6a:** Locution g - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	323.43	169	1.90		
Constant	2289.65	1	2289.65	1196.39	.01
Gender	.04	1	.04	.02	.885
Age	35.64	2	17.82	9.31	.0001
Gender X Age	2.24	2	1.12	.58	.558

**Table A7.13.6b:** Locution g - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	4.52	1.42	4.61	1.45
2 (Year 7)	3.66	1.42	3.43	1.09
3 (Year 10)	3.18	1.37	3.51	1.42

Locution h - Labelling the behaviour e.g., "Doing....is very...."

There was a significant age effect for locution h.

**Table A7.13.7a:** Locution h - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	314.52	169	1.86		
Constant	4260.76	1	4260.76	2289.43	.01
Gender	.046	1	.046	.025	.874
Age	12.49	2	6.25	3.36	.037
Gender X Age	6.43	2	3.22	1.73	.181

**Table A7.13.7b:** Locution h - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.20	1.22	5.94	0.81
2 (Year 7)	4.76	1.39	4.21	1.54
3 (Year 10)	4.95	1.32	4.92	1.47

Locution i - Attribution of ability e.g., "I knew you could do...."

There was a significant age effect for locution i.

**Table A7.13.8a:** Locution i - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	346.22	169	2.05		
Constant	2622.89	1	2622.89	1280.33	.01
Gender	.15	1	.15	.07	.788
Age	32.95	2	16.47	8.04	.0001
Gender X Age	3.05	2	1.52	.74	.477

**Table A7.13.8b:** Locution i - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	4.61	1.43	5.27	1.03
2 (Year 7)	3.70	1.42	3.70	1.35
3 (Year 10)	3.70	1.57	3.59	1.36

Locution j - Comments about physical characteristics e.g., "You are pretty when you're happy"

For locution j there was a significant gender effect only.

**Table A7.13.9a:** Locution j - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	609.02	169	3.60		
Constant	3011.86	1	3011.86	835.78	.01
Gender	44.23	1	44.23	12.27	.001
Age	17.63	2	8.81	2.44	.09
Gender X Age	14.76	2	7.38	2.05	.132

**Table A7.13.9b:** Locution j - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	4.34	2.03	5.33	2.03
2 (Year 7)	4.13	1.84	4.25	2.05
3 (Year 10)	3.24	1.84	4.80	1.87

From the table of means it appears that females at each age level liked this locution more than did males.

Locution k - Telling child s/he is good e.g., "Good girl/boy"

There was a significant age effect.

**Table A7.13.10a:** Locution k - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	456.85	169	2.70		
Constant	3053.49	1	3053.49	1129.56	.01
Gender	2.19	1	2.19	.81	.369
Age	53.01	2	26.50	9.80	.0001
Gender X Age	3.96	2	1.98	.73	.482

**Table A7.13.10b:** Locution k - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.20	1.46	5.00	1.89
2 (Year 7)	4.16	1.59	4.96	1.43
3 (Year 10)	3.56	1.59	3.99	1.81

Locution l - Thanks e.g., "Thank you for...."

There were no significant effects for locution l.

Locution m - Parent indicating own feelings about behaviour e.g., "I'm very pleased that you have...."

There was a significant age effect for locution m.

**Table A7.13.11a:** Locution m - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	249.08	169	1.47		
Constant	4177.29	1	4177.29	2834.32	.01
Gender	1.93	1	1.93	1.31	.254
Age	10.85	2	5.43	3.68	.027
Gender X Age	.36	2	.18	.12	.886

**Table A7.13.11b:** Locution m - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.34	1.03	5.44	1.47
2 (Year 7)	4.79	1.11	5.04	1.25
3 (Year 10)	4.57	1.28	4.93	1.22

Locution n - Exclamations e.g., "Great! Wonderful!"

There was a significant age effect for locution n.

**Table A7.13.12a:** Locution n - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	503.74	169	2.98		
Constant	3814.22	1	3814.22	1279.63	.01
Gender	.08	1	.08	.026	.872
Age	47.35	2	23.67	7.94	.001
Gender X Age	1.11	2	.56	.186	.83

**Table A7.13.12b:** Locution n - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.61	1.72	6.00	1.73
2 (Year 7)	4.63	1.63	4.89	2.17
3 (Year 10)	4.32	1.68	4.30	1.70

Locution o - General comments e.g., any comments unrelated to behaviour, perhaps referring to future activities or material rewards, or simply general conversation

There were significant age and gender effects for locution o.

**Table A7.13.13a:** Locution o - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	368.29	169	2.18		
Constant	5227.96	1	5227.96	2399.01	.01
Gender	18.80	1	18.80	8.63	.004
Age	138.39	2	69.19	31.75	.01
Gender X Age	6.81	2	3.40	1.56	.213

**Table A7.13.13b:** Locution o - Means and standard deviations, by age and gender.

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	6.55	.78	6.33	1.35
2 (Year 7)	6.44	.85	6.79	.55
3 (Year 10)	4.94	1.79	4.31	1.82

The oldest group liked this locution less than did the two younger groups, and females overall liked it less than did males.

Locution p - Noticing that the behaviour has occurred e.g., "I see you have....."

There were no significant effects for locution p.

Locution q - Indicating how the child will benefit from the behaviour e.g., "Now you'll be able to...."

There was a significant age effect for locution q.

**Table A7.13.14a:** Locution q - Results of analysis of variance, age and gender.

Source of variation	SS	df	MS	F	p
Within cells	301.09	169	1.78		
Constant	2300.52	1	2300.52	1291.26	.01
Gender	4.21	1	4.21	2.36	.126
Age	19.23	2	9.61	5.39	.005
Gender X Age	.70	2	.35	.19	.821

**Table A7.13.14b: Locution q - Means and standard deviations, by age and gender.**

Group	Male		Female	
	Mean	s.d	Mean	s.d.
1 (Year 5)	4.52	1.19	4.00	1.29
2 (Year 7)	3.58	1.30	3.29	1.50
3 (Year 10)	3.53	1.39	3.37	1.30

**Locution r - Social comparison e.g., "...would not do as well as you"**

There was a significant age effect for locution r.

**Table A7.13.15a: Locution r - Results of analysis of variance, age and gender.**

Source of variation	SS	df	MS	F	p
Within cells	692.43	169	4.09		
Constant	2504.25	1	2504.25	611.21	.01
Gender	.001	1	.001	.00	.988
Age	115.29	2	57.64	14.07	.01
Gender X Age	.029	2	.01	.004	.996

**Table A7.13.15b: Locution r - Means and standard deviations, by age and gender.**

Group	Male		Female	
	Mean	s.d.	Mean	s.d.
1 (Year 5)	5.36	1.92	5.55	1.79
2 (Year 7)	3.77	1.85	4.04	2.56
3 (Year 10)	3.10	1.90	3.37	2.16

**Locution s - Attributing behaviour e.g., "You must have ...."**

There were no significant effects for locution s.

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