



IRRATIONAL BELIEFS  
IN  
STUDY AND MARRIAGE

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## ABSTRACT

Two context-specific measures of irrational belief were developed in an attempt to improve upon the traditional general tests, such as Jones' (1968) Irrational Beliefs Test (IBT). The first measure, '*Beliefs About Study*' (BAS), was administered together with the IBT, for comparison, to 180 full-time adult matriculation students. In comparison with the IBT, BAS items were designed with study related specificity, with reduced item repetition and reduced cognitive impurity; items focusing more on emotion and behaviour than cognition were avoided. Typical self-report measures of procrastination, anxiety, depression and affect, together with some atypical objective measures of academic procrastination, perseverance and performance, were employed as dependent variables.

Although the BAS and IBT both bore weak to modest linear relationships with the dependent variables, high BAS scores effectively predicted dysfunction and did so significantly better than high IBT scores, in support of the hypothesis that context-specific tests are likely to have greater discriminant validity than general ones. Students identified by their high scores on BAS subscales as being 'at risk' scored significantly higher on procrastination, anxiety, depression and negative affect and lower on perseverance, grade-point-average and aggregate than students with lower BAS scores. Procrastination was found to be a highly influential variable in distinguishing unsuccessful students from the successful ones.

The second measure of irrationality, '*Beliefs About Marriage*' (BAM), was administered to 88 married individuals, including 40 couples, consisting mainly of middle aged (mean age = 39 years), middle class couples, married

for a mean of 14 years. BAM comprises 100 items which are specifically marriage related, with emphasis on cognitive purity and content diversity, as for BAS. In addition, BAM requires a spouse to give two ratings for each marital concept considered, for example, the frequency of approval from one's partner: one rating is for belief 'B' (how frequently approval 'should' be given), the other for perceived reality 'R' (how frequently approval 'is' given), as perceived by the spouse.

These ratings yield a measure of '*dissonance*', defined by their difference (B-R). '*Dissonance*' scales correlated highly with unhappiness, unlike the belief scales, which had variable relationships; the correlation between full-scale belief and happiness was non-significant. Results support the hypothesis that irrational belief is better defined as '*dissonance*' using Cognitive Dissonance Theory (CDT; Festinger, 1957) than as extreme belief using Rational Emotive Theory (RET; Ellis, 1958). Moreover, RET can be regarded as a dissonance 'minitheory' (Aronson, 1992), subsumable by CDT.

The 'B' and 'R' ratings of BAM also generate measures of '*attributional dissonance*' (perceived partner shortcomings), '*self attributional bias*' (over-estimation of one's marital contributions) and '*perceived marital quality*' (the quality of one's perceived marital realities). For spouses generally, '*attributional dissonance*' was highly associated with the unhappiness of the couple. However, a strong sex difference was found for '*self attributional bias*'; for wives, it was highly associated with the unhappiness of the couple; for husbands, it was unrelated. For spouses generally, '*perceived marital quality*' was highly correlated with happiness. Findings are discussed in relation to previous research and future implications.

## STATEMENT

This report contains no material which has been accepted for the award of any other qualification in any university. To the best of my knowledge, it contains no material previously published or written by another person, except when due reference is made in the text of the report.

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# 1. IRRATIONAL BELIEF & STUDY

## 1.1 INTRODUCTION

Irrational beliefs are regarded by protagonists of Rational Emotive Theory (RET) as those which are extreme and dogmatic (Ellis, 1958a, 1973, 1989b; Bernard, 1986). From the present author's counselling experiences at Kensington Park College of Technical and Further Education (T.A.F.E.), it is apparent that the personal problems of students often feature a cognitive theme. Difficulties with emotions, behaviour and performance typically arise when students' experiences fail to match their extreme, idiosyncratic beliefs (ideas, values, attitudes, expectations, rules, premises, e.t.c.) about something they consider to be important. This cognitive mismatch, the discrepancy between how their world 'ought' to be, and how it actually 'is', can surface in any context: study, marriage, employment, sport, to mention just a few. Study and marriage are the two contexts examined in the present investigation.

Within the study context, particularly that of adult matriculation in South Australia, students quite frequently believe and indoctrinate themselves with pervasive, upsetting thoughts of

perfection (e.g. "*I must always score 'A's'*"),  
inadequacy (e.g. "*Others' ideas are better than mine*"),  
uncertainty (e.g. "*Will I meet that next deadline?*") and  
ideality (e.g. "*Teachers must be charismatic, not just competent*").

Such students often suffer considerable emotional discomfort and resort to maladaptive behaviours, such as procrastination and non-attendance, to relieve the discomfort, if only temporarily. Plummeting performance and course withdrawal often follow. Cognitive restructuring often seems to contribute to the alleviation of their emotional discomfort, their behavioural change and improved performance, consistent with the RET model.

Irrational belief is the fundamental element in Rational-Emotive Theory (RET), developed in the late 1950s by Albert Ellis, a clinical psychologist who pioneered sex, marital and family therapy (Ellis, 1958b, 1962, 1979a). After briefly practising psychoanalysis, his dissatisfaction with the psychoanalytic model, coupled with his own clinical experience, led him to formulate RET, which he promoted with the vigour and singlemindedness for which he is renowned (Bernard, 1986; Dryden, 1985; Mahoney, Lyddon & Alford, 1989; Smith, 1982).

The substantial and increasing impact of RET on clinical psychology and the cognitive-behavioural movement since its inception is widely acknowledged (Lazarus, 1984; Mahoney et al., 1989; Smith, 1982; Ziegler, 1989). It is currently regarded as 'one of the world's most popular forms of counselling and psychotherapy' (Bernard & DiGiuseppe, 1989).

While many cognitive-behavioural therapists, such as Bernard (1986), Dryden (1985), Dyer (1976, 1986, 1989) and Knaus (1979) have followed Ellis directly, others (Bandura, 1977; Beck, Rush, Shaw & Emery, 1979; Franks, 1969; Goldfried & Davison, 1976; Lazarus, 1976; Mahoney, 1974; Meichenbaum, 1977) have independently developed similar principles and practices, as recognised by Ellis (1989b) himself.

## 1.2 RATIONAL EMOTIVE THEORY

Otherwise known as Ellis' 'ABC' theory of personality, RET asserts that misery is mostly self-generated (Ellis, 1958a, 1962, 1973, 1979b, 1989b, that painful, emotional consequences (C) result largely from a person's 'irrational' beliefs (B) about an activating event (A), rather than from the activating event itself. Originally, Ellis (1958) asserted that these irrational beliefs 'inevitably' cause dysfunctional emotion, although more recently (Ellis & DiGiuseppe, 1993), in response to his critics (Mahoney, 1979), he has softened his claim by substituting 'often' for 'inevitably'.

Rational-emotive therapy proceeds with the disputation (step D) of the client's 'irrational' beliefs, using the 'logico-empirical' method of science, towards replacement by more 'rational' ones, thereby helping the client to function more effectively (step E) emotionally and behaviourally (Ellis, 1973).

To illustrate RET, the activating event (A) of scoring 55% might satisfy student 'S1' who simply hopes to pass, but depress student 'S2', who has a desperate and constant need to score over 90%. Here, according to RET, the same activating event (A) has quite different emotional consequences (C) for different students, chiefly because of their different beliefs (B), or constructions of reality, as illustrated below.

ACTIVATOR (A)	---	BELIEF (B)	---	CONSEQUENCE (C)
S1: score(55%)	---	"I hope to pass"	---	satisfaction
S2: score(55%)	---	"I must score > 90%"	---	depression

### 1.2.1 Irrational belief

Ellis (1962) would consider S1's belief (hope of passing) as 'rational', while S2's belief (desperate and constant need to score > 90%) would be regarded as 'irrational' because of its extremeness and dogmatism.

Ellis (1958) originally defined irrationality axiomatically, proposing twelve basic 'irrational' beliefs, although he rejects that there is anything axiomatic or invariant about his criteria (Ellis, 1979c, p.40). For example, his first irrational belief (in regard to approval) was:

*'It is a dire necessity for an adult to be loved or approved by everyone for everything he does'.*

He soon collapsed the twelve original irrational beliefs into three (Ellis, 1973), the 'irrational trinity'. Briefly, they comprise the extreme demands, or needs, for

1. *'competence and approval',*
2. *'fairness from others and life' and*
3. *'quick, easy fulfilment without effort or pain'.*

More recently, in a personal communication to Rorer (1989a), Ellis has asserted that 'any dogmatically held beliefs' are irrational. Rorer asserts that Ellis' definitional shift, per se, demonstrates an unacceptable subjectivity and arbitrariness in the RET notion of irrational belief.

Currently, most protagonists of RET (Ellis, 1979a; Ellis & Bernard, 1983; Walen, DiGiuseppe & Wessler, 1980) seem to agree on the main features of an 'irrational' belief, as one which

1. is extreme, absolute (indicated by the terms 'always', 'every')
2. is demanded rigidly, intensely (implied by 'should', 'must')
3. is at odds with reality and evidence
4. causes emotional and behavioural dysfunction.

Conversely, a 'rational' belief is regarded as

1. conditional (e.g. 'as often as possible' instead of 'always')
2. a preference, hope or wish (instead of a 'must' or 'need')
3. realistic and provable
4. facilitating function instead of causing dysfunction

This notion of 'irrational belief' has attracted a considerable amount of criticism. While features 1. and 2. provide some idea of an irrational belief, similar to the original RET axioms (Ellis, 1958, 1962), Mahoney (1980) and Wessler (1992) question criterion 3, asserting that the referential 'reality and evidence' is not absolute; rather, it is simply that of the RET therapist. Criterion 4. is even more open to criticism, since its inclusion means that irrational belief causes dysfunction by definition. This makes the definition circular (Eschenroeder, 1982; Rorer, 1989a), a criticism Ellis himself (1989a) acknowledges.

As Ellis' irrational beliefs were revised over the years, their structure took on more than just the element of extreme belief, as noted by Kassino (1986) and Hovland & Alsaker (1986). The elements of discrepancy (between belief and reality) and evaluation have been added to the basic element of extreme belief. For example, the original 'approval' belief now takes the form:

*'I must do well and win approval for my performances, or else I rate as a rotten person'* (Ellis & Bernard, 1983, p.13).

This expression comprises belief ('I must do well...'), implied discrepancy between belief and reality ('or else ...') and negative evaluation ('rotten person'). According to Ellis & Bernard (1983), this discrepancy tends to be evaluated by a sufferer in three characteristic ways: as 'awful', 'unbearable' or the experience of 'worthlessness', accompanied by the resulting dysfunctional emotion.

The fundamental RET postulate, that irrational belief causes negative emotion, therefore seems essentially similar to the fundamental postulate of Cognitive Dissonance Theory (CDT) by Festinger (1957), namely, that the discrepancy between belief and reality ('dissonance') causes 'psychological discomfort'. The comparison between RET and CDT, as theoretical bases for the study of irrational belief, is explored further in chapter 2.

### 1.2.2 Dysfunctional emotion

For Ellis & Harper (1975), the 'dysfunctional' emotions (e.g. rage, panic) purportedly resulting from 'irrational' beliefs are qualitatively different from the 'functional' emotions (e.g. displeasure, concern) resulting from 'rational' beliefs. However, this view seems to constitute a shift from their earlier position (Ellis & Harper, 1961a), that the two kinds of emotional responses are quantitatively different, that is, simply different in intensity.

Cramer (1993), Cramer & Fong (1991) and Cramer & Kupshik (1993) have found evidence to support a quantitative distinction, rather than a qualitative one. They found that 'irrational' subjects reported more intense levels of

both kinds of emotional responses compared with 'rational' subjects. Ellis & DiGiuseppe (1993) question the findings of Cramer et al., arguing that the 'language of emotions used by the general public is very imprecise'. If so, their claim undermines their own case for qualitative distinction as much as Cramer's et al. for quantitative distinction, as Cramer (1993) points out.

An independent source of evidence which tends to support the quantitative distinction comes from Watson & Clark (1984) and Watson, Clark & Tellegen (1988), who posit the existence of a single general trait of 'negative affectivity' embracing such emotions as anxiety, anger, guilt and sadness.

Although the available evidence seems to support the original position of Ellis and Harper (1961a), that irrational belief causes more intense negative emotions than rational belief, the controversy seems to be one of the less problematic challenges facing RET.

### 1.2.3 Cognition / affect interaction

According to Ellis (1989b, p.207), the basic tenet of RET is that *'emotional upsets ... are caused by irrational beliefs'* and, therefore, that *'people upset themselves'*.

Essentially then, RET seems to rest upon the primacy of cognition (Lazarus, 1984) in preference to the primacy of affect (Zajonc, 1984). Yet, at the same time, Ellis insists that RET is 'interactionist', that the cognition / affect positions of Lazarus and Zajonc both apply, despite RET's lack of hypotheses giving affect or behaviour a primary role (Schwartz, 1984).

Outside of RET, clinical and experimental evidence exists to support the interactionist position. Isen, Shalke, Clark & Karp (1978) have proposed a 'cognitive-loop' hypothesis that mood, cognition and behaviour all reciprocally affect one another. Schwartz (1982) also advocates a reciprocally interactive view of cognition, behaviour and affect. Similarly, while Beck et al. (1979) attribute the major cause of depression to cognition, they also observe that, once depressed, people are more prone to selectively 'over-generalize' and 'magnify' their negative experiences. Mood induction techniques have also been used to demonstrate that temporary mood states affect ongoing cognitive processes (Madigan & Bollenbach, 1986).

In support of his own interactionist claim, Ellis (1989a, p.211) accepts and borrows others' formulations, such as those cited above, to explain the effects of emotion and behaviour on cognition, conceding that RET itself does not currently accommodate the concept. However, his use of other theories and evidence to render RET interactionist leaves others (Mahoney et al., 1989; Schwartz, 1982, 1984) unconvinced.

#### 1.2.4 RET revised

While RET has broadened considerably in its evolution over the last three decades (Kassinove, 1986; Smith, 1982), it has relinquished theoretical clarity along the way (Ewart & Thoreson, 1977; Mahoney, 1979; Mahoney et al., 1989; Meichenbaum, 1977b; Smith, 1989). Because of its broadening and concomitant loss of clarity, Ziegler (1989) rates RET's 'verifiability' as low. Yet, Ellis (1989b, p.223) continues to insist that RET hypotheses are



'clear and highly testable'. He defends his broadening of RET by distinguishing two forms of Rational-Emotive Therapy (Ellis, 1979c).

In its 'elegant' form, the original 'ABC' formulation, RET amounts to cognitive restructuring (Goldfried & Davison, 1976). Ellis considers that the 'inelegant' form, which embraces a variety of affective methods (eg: relaxation techniques), behavioural methods (eg: practising new behaviours) as well as cognitive methods of behavioural change, is basically equivalent to 'Cognitive Behaviour Modification' (Mahoney, 1974; Meichenbaum, 1977a), 'Cognitive Therapy' (Beck et al., 1979), 'Multimodal Therapy' (Lazarus, 1976) and 'General Behaviour Therapy' (Franks, 1969).

#### 1.2.5 RET: constructivist or rationalist?

Ellis repeatedly (1989b) promotes RET as an 'existential, phenomenologically oriented therapy', insisting that RET helps clients to 'cultivate individuality' and 'accept their experiencing as highly important'. However, he simultaneously extols the virtue of RET for its 'directiveness' and 'teaching by the therapist' (1989b, p.201), which Mahoney (1980) and Wessler (1992) interpret as anti-existential. They argue that, in RET therapy, the client is persuaded to take on the therapist's notion of rationality. Mahoney (1980) sees RET as typical of a 'rationalist' therapy, which assumes purportedly absolute, objective and verifiable realities. This position is in contrast with 'constructivist' therapy, which accepts and addresses clients' constructions of their own private realities, on the assumption that people are 'co-constructors' of their personal realities (Mahoney, 1991, p.100).

Mahoney (1980, p.169) attacks cognitive therapies generally for their use of 'rationality' as 'a naively simplistic form of good reasoning... a right way to think'. Like Mahoney, Wessler (1992) acknowledges the need for a therapist to tap into a client's personal meanings, but adds that the client also needs consensual support for them. He agrees with Mahoney, that RET is rationalistic in practice because of Ellis' insistence that his version of reality is correct, namely, that 'absolutistic musts' (Ellis, 1989b), indeed 'all dogmatic beliefs' (Rorer, 1989b), are irrational.

Ellis' RET has had an enormous and increasing impact on clinical psychology, reflected by RET research, literature and practice. Yet, many of its core, theoretical constructs still attract considerable criticism. RET's definitions of 'irrational belief', the claim that dysfunctional emotions differ 'qualitatively' from functional ones, the claim that RET is 'interactionist' in regard to the primacy of cognition or affect, the 'constructivism' claim and the theoretical looseness resulting from its broadening have all been seriously challenged. In an unconvincing self-defence, Ellis (1989b) rests on the claim that RET is more concerned with therapeutic application than theoretical rigour and he points to its clinical efficacy for support.

### **1.3 CLINICAL EVIDENCE**

In support of RET, Ellis (1979a, p.15) claims extensive clinical evidence, 'countless case histories', purportedly illustrating therapeutic gain from states of 'near despair' to lives of 'better and more joyous existence'. The recognition that RET has become one of the most influential forms of

counselling and psychotherapy is also suggestive of its clinical effectiveness (Bernard, 1986; Lazarus, 1984; Mahoney et al., 1989; Smith, 1982).

Numerous clinicians report that RET has made major contributions to therapy for a wide range of problems concerning sexuality (Bernard, 1986; Ellis, 1958b), personal growth (Ellis, 1962, 1971), parenting (Dyer, 1986; Ellis, 1966), children (Bernard & Joyce, 1984; Ellis & Bernard, 1983; Ellis, 1966), general self-help (Bernard, 1986; Dyer, 1976, 1989; Ellis, 1971), procrastination (Bernard, 1991; Ellis & Knaus, 1977; Knaus, 1979), marriage and relationships (Dryden, 1985; Dryden & Ellis, 1988; Dryden, Mackay, Schroder & Treacher, 1985), teenagers, students, anger, addiction, assertion, communication, health, law, criminality, self-discipline, death and sport (Bernard, 1986). The application and effectiveness of RET is further reflected by the abundant case studies, which illustrate the writings of RET practitioners (Bernard, 1986; Bernard & Joyce, 1984; Dryden, 1985; Dyer, 1976, 1986, 1989; Ellis, 1962; Ellis & Bernard, 1983).

Despite the abundance of clinical evidence supporting RET, it cannot be accepted uncritically, since non-specified variables, other than RET procedures, could contribute to a client's recovery (Frude, 1980, p.34). Important features of experimental design are also usually lacking in clinical practice. Clearly then, experimental evidence is necessary.

#### **1.4 RESEARCH EVIDENCE**

After more than three decades of RET and numerous reviews of studies of its efficacy (e.g. Ellis, 1979b; Engels, Garnefski & Diekstra, 1993; Haaga &

Davison 1989; Lyons & Woods, 1991; McGovern & Silverman, 1984), the empirical support appears to remain equivocal due to methodological problems, flaws in basic RET tenets and highly variable findings. The interpretations of existing research evidence are distinctly polarized; outcome studies of RET tend to be construed as weakly or non-supportive by RET critics, strongly supportive by RET proponents. Overall, the empirical evidence for RET seems to fall short of the strong, widespread, clinical evidence.

From his own major review of RET outcome research, Ellis (1979b) claims an 'immense - indeed almost awesome' body of research evidence in support of RET. While Kleiner (1979) and Tosi (1979) applaud Ellis' marathon review, their uncritical acceptance could reflect their own apparent commitment to the practice of RET (Mahoney et al., 1989). Others (Ewart & Thoresen, 1977; Mahoney, 1979; Meichenbaum, 1979) express confusion, disagreement and disappointment in response to both Ellis' review and his conclusions.

Ewart's & Thoresen's (1977) most emphatic criticism is of Ellis' deliberately selective attention solely to confirmatory studies, on the grounds that 'less than 10% gave negative or equivocal results' (Ellis, 1979b). They further assert, with illustrations, that some hypotheses are too vague to be tested, that some predictions are ambiguously related to RET, that counter-evidence for certain hypotheses is ignored and, that little or no research evidence is offered to support some of the more important predictions of RET, such as hypothesis 13: 'People are happier if they refrain from self-rating' (Ellis, 1979c).

Armed with Ellis' 32 hypotheses, Mahoney (1979) sought to evaluate whether

Ellis had specifically interpreted the evidence relevant to each. What Mahoney considered to be a normally 'straightforward' task, he found 'virtually impossible'. From the 32 hypotheses, he failed to glean any sense or model of a theory, rather, just a 'collection of loosely related and poorly elucidated propositions', in contrast with Ellis' (1989b, p.223) continuing claim that his hypotheses are 'clear and highly testable'. Eschenroeder (1982) also describes RET as a collection of propositions, rather than a highly integrated theory.

Mahoney (1979) concludes that, until 1974, research evaluating the efficacy of RET was 'sparse, methodologically poor and summarily modest in its implications'. In general, Meichenbaum (1979) seriously questions Ellis' conclusions, while Ewart & Thoresen (1977) simply find them unacceptable, particularly his conclusion that RET has a strong empirical foundation.

In a review of outcome studies of Rational-Emotive Therapy from 1977 to 1982, McGovern & Silverman (1984) found more favourable support for RET. In 31 of the 47 studies they reviewed, there were significant findings in support of the RET position. In the remaining studies, the RET treatment groups all showed improvement and none of the studies revealed another treatment method which was significantly better than RET. Amongst the studies reviewed, the authors note some extension of sample representativeness (beyond the usual college student populations), as well as a little more variation in the choice of dependent variables (apart from the traditional self-report scales). What seriously detracts from the apparent favourability of this review is the psychometric weakness of questionnaires and doubt about therapist training (noted by the authors), as well as the lack of attrition and follow-up data (not addressed by the authors).

The use of self-reports of emotionality as dependent variables has proven a major problem in attempts to validate RET. McGovern & Silverman (1984) recommend greater use of behavioural criteria, since irrational belief is purported to cause behavioural as well as emotional dysfunction. The use of behavioural criteria would also avoid the problem of common variance in inventories of irrational belief and emotionality, which artificially inflates the predictor / criterion correlation (Smith, 1982).

Haaga & Davison (1989) reviewed RET outcome studies by organising them according to the type of problem being treated. Their findings indicate that the efficacy of RET varied considerably from its 'best results' on test anxiety, social anxiety and assertiveness, through 'very promising' (but non-significant) results in the treatment of obesity (Block, 1980) and Type A Behaviour Pattern (Thurman, 1984), to 'inferior' effects on agoraphobia compared with other treatments, such as exposure. It is noteworthy that even the 'best results' were generally only comparable with those of other treatments. Haaga & Davison conclude that, for certain disorders, RET seems to provide beneficial effects on self-report measures of emotionality, however, the evidence on behavioural and physiological measures is both scarce and weak. They add that RET has yet to demonstrate its utility in treating a core clinical dysfunction or in preventing psychopathology.

More recently, Lyons & Woods (1991) conducted a meta-analysis of 70 RET outcome studies. They found that subjects receiving RET generally showed significant improvement over baseline measures and control groups. While this review generally supports the effectiveness of RET, the authors concede that their findings must be tempered by the lack of follow-up and

attrition data in the studies reviewed. Indeed, only 9 of the 70 studies reported attrition rates, casting doubt over the remaining 61 success rates, since non-completers could not be assessed for therapeutic outcome. It was also acknowledged by the authors that 'there is no real guarantee that the therapy being used was actually RET ... '

Finally, from a small review of 28 controlled studies of RET outcome, Engels, Garnefski & Diekstra (1993) conclude that the efficacy of RET appears to be superior to placebo and no treatment and comparable with other treatments, such as combination therapies and systematic desensitisation. However, as the authors note, the wide variety of experimental designs, types of disturbance and types of outcomes within a mere 28 studies calls for extreme caution in any interpretation and precludes generalization to clinical practice.

Any evaluation of RET outcome research depends critically upon basic RET tenets, about which many criticisms still remain (Haaga & Davison, 1989), especially in regard to the definition of 'irrationality' (Eschenroeder, 1982; Mahoney, 1979; Rorer, 1989a), RET hypotheses (Eschenroeder, 1982; Mahoney, 1979; Meichenbaum, 1977), the structure of measures of irrational belief (Hovland & Alsaker, 1986), their validity (Kassinove, 1986; Kendall & Korgeski, 1979; Malouff & Schutte, 1986; Smith, 1982) and their factors (Cramer, 1985; Lohr & Bonge, 1982). Improvements in the methodology of RET outcome studies are also necessary (Engels et al., 1993; Haaga & Davison, 1989; Lyons & Woods, 1991). Any of the above criticisms immediately place the meaning of existing research findings in question, however confirmatory they might appear for RET. Recently, Ellis (1987) has conceded that outcome studies of RET are 'more numerous than rigorous'.

Thus, on the current scientific status of RET, Mahoney et al. (1989, p.83) maintain that experimental data on the efficacy of RET are neither considerable nor consistent, contrary to Ellis' strong claims. They further note

*'the glaring discrepancy between the enthusiastic claims made for its clinical efficacy by its proponents and the dearth of compelling evidence for its basic tenets cited by its critics.'*

In support of Mahoney et al., it is apparent from the RET outcome research cited above, that the most favourable evaluations are those by the RET proponents: Ellis (1979b), Kleiner (1979), Lyons & Woods (1989) and Tosi (1979).

Despite the equivocal research evidence for RET, Ellis (1989b) continues to promote it as the best and all-embracing cognitive theory and therapy. However, Ewart & Thoresen (1977) attribute its unquestionable popularity more to Ellis' 'persuasive rhetoric' than the conceptual clarity of RET. Mahoney et al. (1989) agree, but also point to the added appeal of RET's simple format, its clearcut methods and its ostensibly logical rationale for the cause and cure of emotional distress. Marzillier (1987) sees RET as just one of the many relevant theoretical / therapeutic approaches which stress the importance of cognitive process in human adjustment.

### **1.5 MEASURES OF IRRATIONAL BELIEF**

It is proposed that the mismatch between the strong, consistent, clinical evidence for RET and the equivocal, inconsistent, empirical evidence could result partly, at least, from inadequacies in the measures used to assess



irrational belief. Zurawski & Smith (1987) assert that 'the most widely used measures (of irrational belief) are not completely satisfactory'. They suggest that improved measures may provide more compelling evidence of the relation between beliefs and emotion, in support of RET. Haaga & Davison (1989) also propose that research on the efficacy of RET is hindered by problems in assessing key constructs such as irrational beliefs.

It is argued below that traditional self-report measures of irrational belief generate inherent and systematic errors, contain cognitive impurities, have tenuous psychometric properties and, because of their generality, lack the sensitivity to accurately identify irrationality in specific contexts, such as study and marriage.

### 1.5.1. Inherent errors

Typical questionnaires, such as the IBT (Jones, 1968), require respondents to indicate their strength of agreement / disagreement with absolutistic beliefs, such as item 2: 'I hate to fail at anything'. According to RET, high scores necessarily reflect irrationality and predict dysfunction (Ellis, 1962, 1989b). It is proposed that typical measures of irrational belief are prone to two systematic errors in identifying subjects at risk, as well as other inherent errors caused by respondents who do not say what they mean, or cannot do so because questionnaires cannot be sufficiently comprehensive to take respondents' idiosyncratic qualifications into account.

One systematic error of such measures results in 'false alarms', that is, those students who are identified as being 'irrational', and therefore at risk, but who do not actually experience dysfunction. Mahoney (1979) asks: "Can a thought be irrational but adaptive?" The present author's counselling experience confirms that it can. A case in point is student 'X' who expects to score 'A's consistently ('irrational' to Ellis) and succeeds, by having the necessary qualities and by doing the required study. Contrary to Ellis' prediction, this 'irrational' student does not hurt. Indeed, satisfaction and fulfilment result, in keeping with the match between belief (expectation of 'A's) and reality (actually scoring 'A's).

Mahoney (1979) further asks: "Can a thought be rational but maladaptive?" Again, the present author's counselling experience confirms that it can. Student 'Y', who hopes to pass with 'C's ('rational' to Ellis) but regularly fails with 'E's, hurts badly, contrary to Ellis' prediction, but in keeping with the mismatch between belief (hoping for 'C's) and reality (failing with 'E's). Such students can be regarded as 'misses', those not identified as being at risk, yet they really are. These students reflect the second systematic source of error inherent in traditional measures of irrational belief. Ellis (1987) is loathe to acknowledge that the 'X's exist and makes no comment about the 'Y's. It is argued that both of these systematic errors would be eliminated by defining irrationality in terms of the discrepancy between belief and reality rather than extreme belief per se, a proposition pursued more fully in chapter 2.

Another inherent source of error, probably unavoidable using either definition, stems from semantic variation. Dryden (1986) demonstrates that

some respondents use a given word with different meanings. He points out that the word 'should', commonly featuring in irrational beliefs, can carry a number of meanings: that of

*'absolutely should'*, (e.g. "I should always win")

*'preferably should'*, (e.g. "Maybe I should do this first")

*'empirical'* probability (e.g. "The bus should arrive at 7.30"), or

*'recommendation'* (e.g. "You should see that movie").

Only the first of these is absolutistic or 'irrational'.

Some respondents do not say what they mean, or cannot do so because their responses require certain qualifications, which simple questionnaires do not accommodate. For instance, some students characteristically communicate with intensity and exaggeration, perhaps for idiosyncratic rhetorical effect, but without literal intent:

e.g. "I'll die if I don't score an 'A'"; but they readily accept less.

Others are highly self-expectant, but also hold certain corollaries:

e.g. "I reach for the sky, to push myself, but I can settle for less".

Both of these students would score high for irrationality on traditional tests, yet not experience dysfunction. They could be considered as the inevitable 'false alarms'. While Ellis (1987) concedes that these 'false alarms' might exist, he insists that they would be rare.

It is proposed that all of the errors described above have limited the accuracy of traditional measures of irrational belief in identifying the truly irrational subject. For the first part of this investigation, study-specific BAS items were framed in the traditional way to afford comparison with the general IBT. However, in the second part of the study, marriage-specific items were framed to avoid the systematic errors.

### 1.5.2 Generality

The production of trait and attitude measures by psychologists seems to have been governed by a ubiquitous quest for generality. Suggestions for specificity have been proffered from time to time (Anastasi, 1988; Bandura, 1969; Holtzworth & Stuart, 1994; Mandler, 1984; Smith, 1982; Wegner & Vallacher, 1977) since Mischel's (1968) rejection of traits and Wicker's (1969) rejection of attitudinal response dispositions. Both argued from extensive reviews of documented research, which revealed generally low correlations between traits / attitudes and criterion behaviours.

Mischel (1968) cites empirical evidence that people demonstrate considerable situational specificity on such dimensions as aggression, dependence, rigidity and honesty. Argyle (1975) regrets that too much time has been spent trying to measure personality, with too little attention to the circumstances in which behaviour occurs.

While responses to the calls for specificity seem to have been few and far between, some attempts have been made within the area of irrational belief. For instance, Sarason's (1978) 'Cognitive Interference Questionnaire' (CIQ) asks subjects to rate the frequencies of ten negative thoughts specifically about performance on a task. And, by replacing 'task' with 'test', Hunsley (1987) has employed the CIQ as a test-specific irrational beliefs test.

In the marriage context, Epstein & Eidelson (1981) have produced a three scale 'Relationship Beliefs Inventory' (RBI), designed to measure irrational beliefs specifically about intimate relationships. Thurman (1984) developed a specific irrational beliefs test to assess Type A

behaviour pattern (TABP), featuring such items as, 'faster is always better', and argued that the test's specificity would make it more sensitive to TABP change than a general measure, such as the IBT.

It occurs commonly enough in the author's experience, that a student who always needs to score 'A's, might not be otherwise perfectionistic (e.g. in sport, music, dating and physical appearance). Some students expect highly idealistic treatment in education (e.g. constantly inspiring teaching, personal choice of assessment mode, course content and learning rate) but not from their parents, their friends, or their employers. Other students are highly preoccupied with competitive thoughts about study, but seem quite uncompetitive in relation to the rest of their lives.

Similarly, in the marriage context, there are those who need constant approval from their partners, but not from others. Some are extremely idealistic about their marriage, but not about other relationships, their work, politics, or study. To some individuals, a minor disagreement with their partner represents a major, global rejection, a catastrophic sign of relationship collapse, yet similar disagreements with anyone else create barely a ripple of arousal.

Whilst there may well be general dimensions of irrational belief: approval, competence, ideality, as proposed by Ellis (1962, 1973, 1989b), a case can be argued for the appropriateness of specific content within those general dimensions. Lohr & Bonge (1982) emphasise the need to 'make more specific assessment of the content and form of dysfunctional cognitions'. Generally, Bandura (1969, p.599) asserts that an attitude questionnaire which considers situational variables 'would undoubtedly have greater

predictive power' than a general one which ignores them; Epstein (1986) concurs in reference to the marriage context. Haaga and Davison (1989, p.198) recommend that irrational belief tests be tailored '... to the specifics of the target problem'. Holtzworth & Stuart (1994) argue similarly.

In summary, it seems clear that a test of irrational beliefs for students should tap specific beliefs about study, rather than general ones. Similarly, a test for married couples should tap specific beliefs about marriage. Such measures were devised for the present investigation.

### 1.5.3 Cognitive impurity

Another feature of the content of some irrational beliefs tests which has attracted some attention is cognitive impurity. Smith (1982) questions the usefulness of the IBT because it includes items which ask about anxiety reactions rather than beliefs. Others (Kassinove, 1986; Malouff & Schutte, 1986; Rorer, 1989a) concur with his warning. There appears to be some justification for their caution, more for some tests than others (Smith & Allred, 1987).

A few of the IBT's items do seem to deal more with emotion than cognition. For example, in item 82:

*'I often become quite annoyed over little things'*

emotional reaction is quite explicit, while cognition is merely implicit. Smith (1982) also alerts us to some 'behavioural' impurities in the IBT. Presumably, he is referring to such items as item 17:

*'I try to get irksome tasks behind me when they come up'*

which does appear more behavioural than cognitive. This item might be more appropriate in a measure of 'procrastination' than an irrational beliefs test.

The presence of cognitive impurities in tests of irrational belief can be problematic for more than the internal (construct) validity of the test. They also confound interpretation about external (criterion and discriminant) validity (Malouff & Schutte, 1986). Since measures of emotionality, such as the State Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch & Lushene, 1970), are often used as validating criterion measures for the IBT, emotionality items existing in both the IBT and the STAI constitute common content or variance (Smith, 1982). For instance, nine of the ten items in factor 6 ('Anticipatory Anxiety') of the IBT and five of the ten items in factor 4 ('Catastrophisation') are also included in the STAI. Consequently, 14% of the IBT is semantically equivalent to 40% of the STAI, representing a considerable overlap. The common content in predictor (IBT) and criterion (STAI) must therefore place in question any interpretation of criterion validity based upon a significant association between the two measures (Malouff & Schutte, 1986; Rorer, 1989b; Smith, 1982; Smith & Allred, 1987).

To assess the extent to which common content influences the predictor / criterion relationship, Kassinove (1986) and Malouff & Schutte (1986) devised irrational belief tests similar to the IBT, without predictor / criterion overlap. They still found significant positive correlations between irrational belief and the criterion measures. Thus, most of the explained variation seems to be attributable to irrational belief and,

therefore, the association between irrational belief and self-reported anxiety cannot be dismissed as an artifact of common content, contrary to Smith's (1982) original suggestion.

Whether 'worry' items should co-exist with 'beliefs' in an irrational beliefs test has also aroused some debate. Smith (1982) criticises those who treat self-talk or 'worry' items (e.g. 'Thoughts of failing bother me during tests') and deep beliefs (e.g. 'Excellence is necessary') as equivalent for the purpose of inclusion in the same cognitive measure. He argues that, according to RET, beliefs are 'stable cognitive structures', while self-talk refers to more 'transitory cognitive events', that is, current internal dialogue or concerns in regard to specific situations. Therefore, he asserts, the two should be measured and considered separately. Similarly, Gotlib (1990) and Williams, Watts, Macleod & Mathews (1988) see a discrepancy between theories of emotional disorders involving 'unconscious' cognitions and their self-report tests which tap 'conscious' cognitions.

Many disagree with this view. Barnes & Volcano (1982) and Kendall & Hollon (1981) consider 'worries' to be cognitive, since they express frequency of preoccupation with an idea, concern or cognition. Although Ellis & Bernard (1983, p.12) acknowledge that there is no consensus among RET therapists and theorists as to the exact meaning of beliefs, they recognise, along with Eschenroeder (1982), three subclasses or layers of belief:

1. '*conscious thoughts*' of which one is aware at any time
2. '*unconscious thoughts*' which are inferred from feelings and behaviour
3. '*abstract beliefs*' underlying one's thoughts, emotions, behaviour and interpretation of reality.



According to RET, repetitive worrisome self-talk (type 1) derives from deeper beliefs (types 2 and 3), causing maladaptive emotion (Bernard, 1981; Harrell, Chambless & Calhoun, 1981). Research exists which supports this proposition. For instance, Brown & Nelson (1983) have demonstrated that, while all of their student participants experienced negative thoughts during tests, high performers could stop negative thoughts more frequently than low performers, suggesting that 'cognitive control' facilitates academic performance by avoidance of the 'disruptive and overwhelming' effects of negative self-talk.

Minor & Gold (1986) also found that, in an actual college exam, high test-anxious students experienced more negative thoughts and more arousal than low test-anxious students, in support of a cognitive model of test anxiety. Deffenbacher (1986) too, showed that worrisome thoughts contribute to poor exam performance, pointing to the need for helping anxious students

*'alter their perfectionistic self-standards, brutal self-criticisms, over generalised comparisons to others, devastating predictions of personal failure, and the like'.*

That deep beliefs (types 2 and 3) are stable while surface belief or self-talk (type 1) is transitory is surely to be expected, as the former manifests itself through the latter in a specific situation. Since both are cognitive, one merely a product of the other, they are therefore legitimate partners in a measure of irrational belief, particularly a measure which is tailor-made for a specific situation. Unfortunately, since 'worry' items also exist in criterion measures of anxiety (e.g. the STAI), their retention would maintain some unwanted common content, as discussed earlier.

The problem of item overlap could be resolved in at least three ways: by removing common content from irrational belief tests, by removing it from criterion measures, or by using different criteria without common content. Since many criterion tests, such as the STAI and BDI, are long established and well entrenched in psychological research, their modification would be seen as highly undesirable. On the other hand, removing common items from irrational beliefs tests would mean relinquishing legitimate cognitive content in the form of 'worry' items. The best solution to this dilemma is to include different dependent variables without common content (Kassinove, 1986), thereby permitting the retention of 'worry' items in the measure of irrational beliefs, without complicating criterion validation; indeed, validation would be strengthened by the use of a wider range of objective and behavioural criteria (Kassinove, 1986; McGovern & Silverman, 1984).

Following the above discussion, the measure devised to assess irrational beliefs about study (BAS) in the present investigation excludes cognitive impurities of emotion and behaviour. Although BAS includes 10 out of 48 'worry' items, their content is study-specific, effectively reducing their common ground with general worry items in the criterion measure of anxiety (the STAI). In addition, objective and behavioural criteria were employed, completely avoiding the problem of predictor / criterion common variance.

#### **1.5.4 Psychometric properties**

Measures of irrational belief have been criticised for their questionable psychometric properties, particularly those of validity and factorial structure. It has been pointed out (Argyle, 1975; Mischel, 1968; Tinsley &

Tinsley, 1987) that item similarity artificially boosts the factor strength in questionnaires. Some of the longer irrational beliefs tests appear partly guilty of this charge. Item repetition in the IBT, for instance, suggests that some of its factors are artificial. Half of the 'Morality' factor, namely items 3, 13, 23, 33 and 43, amount to:

*'Immorality should be punished'.*

Of the 'Anticipatory Anxiety' factor, six of the ten items (6, 16, 26, 56, 66 and 76) reduce to the same general 'worry' item:

*'I can't get my mind off some fear or concern'.*

The IBT's factorial structure has been questioned for reasons other than its item redundancy. Lohr & Bonge (1982) tested a group of 897 university students, compared the IBT factors with Jones' (1968) original factors and found that 'the matches were far from perfect'. Another factor analysis by Cramer (1985) showed that approximately half of the IBT's items fail to load appropriately on the intended factors.

While Lohr & Bonge (1980) demonstrated that the IBT has satisfactory test-retest reliability, they found in a later study (Lohr & Bonge, 1982) that the internal reliabilities of the 10 subscales ranged from very low ( $\alpha=.35$ ) to adequate ( $\alpha=.73$ ), barely sufficient for the purpose of research and too small for the making of clinical decisions.

Barnes' and Volcano's (1982) Rationality Test (BVRT) sprang from the same source as the IBT, Ellis' (1962) 10 basic irrational beliefs. Like the IBT, the BVRT includes many repeated items. It is not surprising therefore, that the first 3 factors to emerge in a principal axes factor analysis, accounting for over half of the variance and affording purportedly clear

interpretations, are the very subscales which are highly repetitive in item content. The Relationship Belief Inventory (Epstein & Eidelson, 1981), a 3-scale test of irrational belief designed specifically for the marriage context, also features considerable item repetition.

Smith (1982) and Smith & Zurawski (1983) have questioned the discriminant validity of some measures of irrational belief. Smith (1982) has observed that correlations between measures of irrational belief (e.g. the IBT) and emotionality (e.g. anxiety, depression) are often comparable with those between different measures of irrational belief. Zurawski & Smith (1987) found that the IBT (Jones, 1968) and the Rational Behaviour Inventory (RBI; Shorkey & Whiteman, 1977) were highly correlated, but equally so with self-report measures of anxiety and depression. This property tends to violate one of the criteria for discriminant validity (Campbell & Fiske, 1959), namely, that alternative measures of irrational belief ought to correlate more highly with each other than with criterion measures. Considering the high correlations found between these independent and dependent measures, as well as the common content shared by both, Smith (1982) and Smith & Zurawski (1983) have warned that measures of irrational belief may simply assess emotional distress itself.

Sanderman, Mersch, Van Der Sleen, Emmelkamp & Ormel (1987) performed a second order factor analysis on a set of irrational belief and emotionality measures. The first factor, 'neurotic complaint' (embracing emotionality measures), accounted for 36% of the variance, while the second 'cognitive' factor (incorporating the IBT, the RBI, and the Social Anxiety subscale of the Fear Questionnaire) accounted for 10%. This finding was interpreted by Sanderman et al. as implying that social anxiety is linked to irrational

belief and, more importantly, that cognitive belief style is a personal characteristic which is distinct from constructs of emotionality, such as neuroticism, anxiety and social desirability, contrary to Smith's (1982) suggestion.

Deffenbacher, Zwemer, Whisman, Hill & Sloan (1986) administered the IBT with measures of trait, test and social anxiety to 451 introductory psychology students. By performing regression analyses of each of the anxiety measures on the IBT subscales, they found that, in regression equations predicting the various types of anxiety, different IBT subscales were prominent as predictors; the strength of prediction varied as well, R ranging from .49 to .84. These differential effects were interpreted by Deffenbacher et al. as evidence that IBT subscales constitute constructs separate from general psychological distress, again, contrary to Smith's (1982) suggestion that irrational belief might amount to no more than another facet of psychological distress.

Although the weight of evidence supports irrational belief as a construct separate from emotionality, the psychometric properties of the major tests remain tenuous. Strengthening these properties probably requires test refinement, followed by re-evaluation.

## 1.6 STATISTICAL ANALYSIS

Linear models are ubiquitous in the analysis of psychological research, particularly in the study of irrational belief. The use of other models (e.g. curvilinear, threshold) is relatively rare. Yet, a weak correlation

could well mask a strong non-linear relationship. RET focuses upon the emotional and behavioural dysfunction purportedly resulting from very high scores on tests of irrational belief, reflecting extreme, dogmatic belief. It assumes that low to moderate scores imply rationality and, consequently, emotional and behavioural coping, although this assumption does not appear to have been tested.

Since RET focuses on extreme scores, researchers might profit from analysis which also focuses primarily on very high scores, to target those claimed by RET to be at risk of emotional and behavioural dysfunction and to assess the hit rate, that is, the proportion of students correctly targeted. This strategy was adopted in the present study.

Another matter begging consideration is whether the full-scale score of an irrational beliefs test, or separate sub-scale scores should be used. Full scale scores have mostly been the choice to date, although a few studies, (using the IBT for instance) have reported differential sub-scale effects with emotional arousal (Goldfried & Sobocinski, 1975), with low self-esteem (Daly & Burton, 1983), with anxiety and anger (Zwemer & Deffenbacher, 1984), with depression (Nelson, 1977), with neuroticism and depression (LaPointe & Crandell, 1980), with trait anxiety, test anxiety and other specific anxieties (Deffenbacher et al., 1986).

In reference to spouses' perceptions of their marriages, Epstein, Pretzer & Fleming (1987) assert that

*'the common use of global total scores (from cognitive measures)... may be masking a multi-dimensionality of content'.*

Dryden (1985, p.200), a protagonist and practitioner of RET in the marriage context , asserts that

*'marital dissatisfaction may occur if partners adhere to one or more marital myths(irrational beliefs)'*.

In other words, one extreme, rigid belief is sufficient to cause problems. The present author's counselling experience suggests that Dryden's claim applies to students as well as marriage partners. When student 'X' scores high on ideality, but low to average on all other scales, the mismatch between idealism and reality soon brings disenchantment, a drop in input, lower grades, increased disenchantment and withdrawal, yet a moderate total score for irrationality would not predict risk.

When student 'Y' scores well below high self-expectations for performance, but scores low to average on all other subscales, emotional and behavioural dysfunction often follow. However, a moderate total irrationality score would not signal risk. This suggests that BAS sub-scales might be more useful separately as predictors, in preference to the full-scale. Where one or more sub-scale scores are above some threshold value, the student would be deemed at risk of dysfunctional emotion and behaviour.

In the present study, it was decided to identify the high scorers on one or more of the BAS sub-scales and compare their outcomes with those of the remaining students in an effort to establish the discriminant validity of the BAS. It was also resolved to perform the usual correlational analyses for comparison with findings in previous studies.

## 1.7 'BELIEFS ABOUT STUDY' QUESTIONNAIRE

The present investigation is based upon the development of a questionnaire, 'Beliefs About Study' (BAS), designed to assess extreme, dogmatic beliefs ('irrational' by RET criteria) specifically about study (see appendices B and E for pilot and final forms). BAS differs from general irrational belief tests, particularly the IBT (Jones, 1968), mainly by virtue of its specific study-related content.

In addition, an effort was made to increase the cognitive purity of BAS items, by avoiding the behavioural and emotional content present in the IBT. Item redundancy, rife in the IBT, was minimised in BAS to avoid factor / cluster artifacts. Although a small proportion of self-talk ('worry' items) was included, for reasons advanced earlier in section 1.5.3, they are study-specific, unlike the general 'worry' items in the criterion measures. Consequently, BAS shares no explicitly common items with the dependent self-report measures of anxiety (STAI) and depression (BDI), thereby avoiding the criterion validity artifacts, which have clouded research based on the IBT (Smith, 1982; Smith & Zurawski, 1983).

A frequency rating scale was adopted for the final form of BAS for two reasons. First, the frequency of preoccupation with ideas is linked with emotionality. It has been shown that test anxiety is more strongly related to frequency of negative thoughts than the number of them (Hunsley, 1987). Second, it was found that frequency ratings suited the items of BAS anyway, and it was felt that one rating dimension, rather than the variety used in the pilot version, was desirable for ease of completion by respondents. A 7-point scale was adopted, ranging from '1' (never), through '4' (half of



the time), to '7'(always), following research by Osgood & Tannenbaum (1957, p.85) on the number of rating points preferred by college students on rating scales. It was found that, while 7 points were used by students with 'roughly ... equal frequencies', 5 points were considered insufficient by students, and 9 points excessive.

The content for BAS, arose mainly from more than a decade of the author's counselling experiences with adult matriculants. A few study-specific adaptations of Ellis' (1958, 1962) general irrational beliefs were also included. Items were pooled into eight a priori subscales, six of which can be considered to have some empirical support since they are simply study-specific adaptations of themes in the IBT, which is based upon Ellis' (1958) original irrational beliefs. The remaining two subscales, 'Competitiveness' and need for 'Certainty', were simply based on recurrent student profiles accessible to the author.

High scores on the BAS subscales reflect the following extreme beliefs:

1. **'Performance'**: Students have high expectations for their academic performance. They constantly expect top grades, immediate understanding, complete memory and total mastery.
2. **'Approval'**: Students have a strong need for approval and affirmation for their academic achievement from teachers, parents and important others.
3. **'Competitiveness'**: Students are preoccupied by a comparison of their own performance with that of other students.

4. **'Dependence'**: Students depend heavily upon others for motivation, academic help, support and confirmation.
5. **'Ideality'**: Students have extreme demands of their educational setting. They demand constantly inspiring teaching, personal choice of assessment mode and the right to decide subject content and learning rate, contrary to the reality of the South Australian matriculation system.
6. **'Avoidance'**: Students are unwilling to accept the demands and difficulties of study.
7. **'Certainty'**: Students have anticipatory fear of and preoccupation with future academic events and outcomes, such as final grades, the next test, tertiary entry and the other recurrent uncertainties in study.
8. **'External Locus'**: Students believe that their progress in study is hindered and determined by external forces beyond their control, such as family problems, social distractions and boring subject matter.

In accordance with RET, it was predicted that high scores on the BAS scales would be associated with emotional and behavioural dysfunction in study. The dependent measures of emotion (anxiety, depression and negative affect) and behaviour (procrastination, perseverance and performance), used in this investigation, are discussed below.

## 1.8 DEPENDENT VARIABLES

Kassinove (1986) and McGovern & Silverman (1984) regret that RET research has largely limited itself to self-reported emotionality as the traditional dependent variable. Typical variables are anxiety (Lohr & Bonge, 1981), anger (Zwemer & Deffenbacher, 1984), depression (Hollon & Kendall, 1980) and self esteem (Daly & Burton, 1983). Furthermore, as noted in section 1.5.4, such measures frequently share common variance with irrational belief tests, artificially inflating the predictor / criterion correlation (Smith, 1982).

RET research has rarely involved behavioural criteria (Kassinove, 1986) and when it has, it has attempted to predict a specific single-act behaviour from a measure of irrational belief, as in attitude-behaviour research generally (Ajzen, 1988). In a review of 109 attitude-behaviour studies by Ajzen & Fishbein (1977), 54 of this design yielded 25 non-significant results, the remaining 29 rarely producing correlations above 0.4.

During the 1970s, the principle of 'aggregation' was conceived (Fishbein & Ajzen, 1974). This principle asserts that a criterion measure should comprise observations of many relevant behaviours on different occasions and in different situations, rather than a single act. It is commonly found (Ajzen, 1988; Ajzen & Fishbein, 1977) that when multiple observations of behaviour are pooled, their aggregate correlates more highly than a single act with the predictive attitude or belief.

Regretably, the 'aggregation' principle does not seem to have been applied in the irrational beliefs arena, yet multiple outcomes have been noted.

For instance, Rorer (1989a) reports that the presenting complaint for perfectionistic students almost always includes procrastination, poor study habits, anxiety and depression. The present author's counselling experience with adult matriculation students supports Rorer's observation of multiple concomitants or consequences, not only for perfectionistic students, but for the idealistic, catastrophising, competitive and avoidant ones as well.

Consistent with the foregoing discussion, dependent variables in the present study included objective, observable and behavioural measures (each one 'aggregated') of procrastination (lecturer rated), grade-point-average, perseverance (proportion of total course completed) and aggregate of scaled marks, as well as the commonly used self-report measures of anxiety and depression.

### **1.8.1 Procrastination**

Pioneering contributors (Burka & Yuen, 1983; Ellis & Knaus, 1977; Solomon & Rothblum, 1984) to the study of procrastination seem to concur in defining it as the unnecessary delay of a task, resulting in emotional discomfort. Ellis & Knaus (1977, p.8) emphasise that, while procrastination can be deliberate, rational, adaptive and free from associated discomfort, such instances are 'rare'. Most often, they claim, it stems from irrational premises, is emotionally uncomfortable, self-perpetuating and maladaptive, having 'enormous sabotaging effects'.

Recognised as providing the first comprehensive analysis of and collection

of remedial strategies for procrastination, Ellis & Knaus (1977) contend that procrastination is rife amongst college and university students and that it contributes heavily to their academic dysfunction. From principles of RET and their clinical case studies, they propose three main causes:

1. '*self-downing*' for failure or fear of failure, arising from the belief: "*I must do well!*". Procrastination postpones possible failure, at least temporarily.
2. '*low frustration tolerance*' based upon the premise: "*The world must give me the things I want...without any great effort or deprivation*". '*Present pain for future gain*' is avoided, in preference for easier, more immediate satisfactions.
3. '*hostility*' or defiance towards others whose behaviour / attitude towards me is not as it '*should*' be, stemming from the requirement: "*You must do well by me!*". Procrastination here, serves to spite the offender(s).

Concurring with, and seeking to extend, the analysis of Ellis & Knaus, Rorer (1983) addresses the apparent paradox of procrastination which is purported to arise from 'fear of success'. He asserts that, far from paradoxical, such procrastination can be readily explained within the RET framework as due to aversive 'concomitants or consequences of the success', not the success itself.

This paradigm is supported and amply illustrated by the clinical data of Burka and Yuen (1983), who also generally embrace and extend the ideas of

RET. Indeed, their 'procrastinator's code' amounts to a set of Ellisian irrational beliefs, such as,

*'I must be perfect',*

*'Everything I do should go easily and without effort',*

*'If it's not done right, it's not worth doing at all' and*

*'There is a right answer and I'll wait until I find it'.*

Solomon & Rothblum (1984) lay claim to the first systematic attempt to investigate the reasons for procrastination. They devised a questionnaire to assess self-reported procrastination, the 'Procrastination Assessment Scale - Students' (PASS), which assesses how students procrastinate (e.g. in writing papers, preparing for exams and reading), why they do so, and how much of a problem their procrastination creates. Using 342 university psychology students as subjects, they sought to investigate the frequency of academic procrastination, the reasons for it, the degree to which it constituted a problem for students, and the correlations of self-report procrastination (using the PASS) with numerous affective and behavioural measures.

A large proportion of the students reported having difficulty with procrastination, consistent with the clinical evidence of Ellis and Knaus (1977). Thus, 46% always, or nearly always, procrastinated when writing papers, 28% when preparing for exams and 30% when reading was required. In these three areas, more than 20% of students found their procrastination a problem and approximately 60% of these wanted to reduce it. Beswick, Rothblum & Mann (1988) have replicated these findings using the PASS in a similar study on psychology students at Flinders University.

It is well established then, from both clinical and research evidence, that procrastination is wide-spread amongst students and that it creates a problem for them. Emotional discomfort is clearly part of that problem. Self-report tests of anxiety, depression and low self-esteem regularly correlate significantly with self-report procrastination (Solomon & Rothblum, 1984; Beswick et al., 1988).

While Solomon & Rothblum found that none of their indices of academic performance were significantly correlated with self-report procrastination, they propose that the finding could represent a 'methodological artifact'. Thus, while the PASS asked respondents to rate their general academic procrastination (across all subjects), the performance criterion was final grade in one specific subject, Psychology. The authors suggest that grades in all subjects should have been embraced by the performance criterion, or 'aggregated', as Ajzen (1988) recommends.

Apart from this study, most of the small amount of documented research has yielded small but significant negative correlations between procrastination (both self-report and observed) and academic performance (e.g. Beswick et al., 1988; Linke, 1980; Semb, Glick & Spencer, 1979), in line with, yet understating, the 'enormous sabotaging effects' claimed by Ellis & Knaus (1977, p.8).

Solomon & Rothblum (1984) found support for the two most important causes of procrastination proposed by Ellis & Knaus, 'fear of failure' and 'low frustration tolerance'. Their factor analysis on the second part of PASS, which taps students' reasons for procrastination, yielded two factors: 'fear of failure' and 'laziness and task aversiveness', which separately

accounted for 49% and 18% of the variance respectively. While both factors correlated significantly with irrational cognitions, only 'fear of failure' was associated with high anxiety and low self esteem, consistent with the distinction between these two cognitive causes of procrastination.

In a later study, Beswick et al. (1988) sought to explore the extent to which procrastination results from indecision (Janis & Mann, 1977), irrational beliefs (Ellis & Knaus, 1977) and low self esteem (Burka & Yuen, 1983). The correlations of these three antecedents with procrastination (behavioural and self-report) were generally low but significant, collectively accounting for less than 7% of the explained variance in behavioural procrastination (defined as 'the time taken to submit a term paper') and about 15% of self-report procrastination (on the PASS). Low self esteem was the best predictor, albeit marginally.

While this study provides little support for the power of RET to explain procrastination, it is worth noting three points. First, Rosenberg's scale of self esteem comprises self-evaluative cognitions (e.g. 'I certainly feel useless at times') which, in essence, amount to 'self-downing' as proposed by Ellis & Knaus (1977). Therefore, besides assessing self esteem, the scale can also be regarded as measuring the irrational belief of 'self-downing', which is claimed by Ellis & Knaus to be a major cause of procrastination.

Second, the Ellis Scale of Irrational Cognitions (MacDonald & Games, 1972) is short, global and, therefore, less sensitive than a longer specific test (Holtzworth-Munroe & Stuart, 1994).



Third, correlation analysis may not be most appropriate for the study of irrational belief and procrastination. RET essentially hypothesises the effects of extreme beliefs, that is, very high test scores; the effects of low to moderate scores on procrastination are unknown. Therefore, a weak linear relationship between irrational beliefs and a predicted effect may well mask a stronger non-linear relationship.

Beswick et al. (1988) recognise that their three theoretical approaches are neither 'mutually exclusive' nor 'contradictory' and, therefore, conclude that students who procrastinate tend to be indecisive, to hold irrational beliefs and have low self-esteem.

Although Ferrari & Emmons (1994) found a non-significant correlation between irrational belief and procrastination for university students, it is pertinent that the measures they used for both variables were short and global, lacking the context-specific sensitivity advised by Holtzworth-Munroe & Stuart (1994).

For the present study, it was resolved to use a modified and expanded form of the PASS as a self-report, study-specific measure of procrastination. The first part of the PASS presents three ways, or areas of study, in which students delay: writing essays, preparing for exams and reading. Because there are other behaviours in which procrastination is also manifest, this part was expanded into a 20 item questionnaire, 'How I Procrastinate' (HIP), which examines delay in such areas as reviewing lesson notes, making a start on study, consulting lecturers for help and concentrating in class (appendix H). Most other items came from the present author's counselling case notes. Some were also borrowed from the Delay-Avoidance subscale of

the Survey of Study Habits and Attitudes (SSHA; Brown & Holtzmann, 1967). The HIP provides a self-report procrastination score (Ps), the aggregate of frequencies of delay in the 20 areas considered, which should assess procrastination behaviour more representatively than the single-act measures generated by the PASS (Azjen, 1988).

The second part of the PASS assesses the student's reasons for delay in writing an essay. This part was utilised with only a few minor changes in expression and content as a separate, 26-item, accompanying questionnaire, 'Why I Procrastinate', (WIP; appendix I).

A rating of observed procrastination (Po) by lecturers (appendix M) was also planned for each student, embracing many measures of procrastination behaviours (e.g. missed project and assignment deadlines, absence from tests, classes and tutorial presentations), assessed for each of the student's 4 or 5 subjects over a maximum of 7 months, again, consistent with the principle of 'aggregation' (Azjen, 1988).

In accordance with RET, it was predicted that extreme irrational beliefs would be associated with high procrastination, both self-report and observed, and that the association would be stronger for study specific irrationality (on BAS) than for general irrationality (on the IBT).

### **1.8.2 Anxiety**

Self-reported anxiety has been one of the most frequently used criteria of irrational thinking in research on RET. The trait form of the State-Trait

Anxiety Inventory (STAI; Spielberger et al., 1970) has often been the chosen measure. The STAI comprises two corresponding 20-item scales for state (S) and trait (T) anxiety. The trait form (STAIT) assesses how people 'generally' feel, their scores reflecting level of 'proneness to anxiety' and 'tendency to perceive stressful situations as threatening' (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983).

Spielberger et al. (1983) claim that the STAIT has good test-retest reliability ( $r=.8$  over 20 and 104 days for college groups) and internal consistency ( $\alpha=.9$ ). It has also been extensively tested for validity, demonstrating good differentiation between normal and clinical groups and robust correlations with numerous other measures of anxiety and psychological distress. The revised Y-form of the scale is claimed by the authors to discriminate between anxiety and depression better than the original X-form. However, high correlations are still found between anxiety, measured on the STAIT, and depression on the BDI (Gotlib, 1984; Hollon & Kendall, 1980).

The STAIT is known to correlate with tests of irrational belief (e.g. Lohr & Bonge, 1981). However, these correlations have often been as high as those between alternative measures of irrational belief, prompting Smith (1982) to question the distinction between constructs of irrational belief and anxiety, particularly considering the common content shared by the STAIT and the IBT.

However, as discussed in section 1.5.4, recent studies support the separateness of the two constructs and the finding that irrational belief predicts anxiety (Kassinove, 1986; Zurawski & Smith, 1987). Furthermore,

Deffenbacher et al. (1986) have demonstrated that specific irrational beliefs are associated with specific types of anxiety, providing the discriminant validity sought by Smith (1982).

Considering the positive association consistently found between irrational belief and self-report anxiety, it was predicted that irrational beliefs about study (on BAS) would also be associated with anxiety (on the STAIT).

### 1.8.3 Depression

Like anxiety, self-report depression has also been employed as a variable in numerous studies of irrational belief and found to be associated with it (Hewitt & Dyck, 1986; LaPointe & Crandell, 1980; Nelson, 1977; Zurawski & Smith, 1987). The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961) is the most frequently used measure of self-reported depression. For this study, the short form of the BDI (Beck & Beck, 1972) was chosen because it is short and because it focuses mainly on cognitive elements (appendix L).

In addition, it was argued that a questionnaire, such as the full-scale BDI, labouring too heavily on somatic symptoms, might deter adult students from completing it, as well as the accompanying stage 2 questionnaires, merely by its threatening clinical content, thereby reducing the return rate. Participation was considered already under threat due to the total demands (5 questionnaires) of stage 2 on subjects.

Although Boyle (1985) questions the reliability and validity of most self-

report measures of depression, including the BDI, both forms of the BDI have been found to be highly correlated (Gould, 1982) and have high internal reliability (Beck, Rile & Rickels, 1974) for college and university students, although these properties were not found to be as robust for clinically depressed subjects (Vredenburg, Krames & Flett, 1985).

Boyle's (1985) doubt about the validity of the BDI also contrasts with considerable empirical evidence associating irrational belief with depression (on the BDI), as cited above. Hammen (1980) has also found high correlations between depression on the BDI and depression rated separately from interviews. The BDI is reported by Beck & Beck (1972) to discriminate well between depression and anxiety, however, Gotlib (1984), Hollon & Kendall (1980) and Zurawski & Smith (1987) have found high correlations between the two. It appears then, that self-report depression and anxiety are not distinct.

The short form of the BDI consists of 13 items (mostly cognitive) from the 21-item full scale. Because of the short form's cognitive emphasis, Depue & Monroe (1978) have argued that it is biased towards the milder forms of depression, which are likely to prevail amongst college student groups.

In line with RET and the documented association between general measures of irrational belief and self-reported depression, it was predicted that irrational beliefs about study on BAS would also be associated with depression on the BDI short form.

#### 1.8.4 Affect

As a third measure of emotionality, rarely used as a dependent variable in studies of irrational belief, it was decided to include a negative affect list, similar to that of Kassinove (1986) and another by Watson et al. (1988). To a group of 70 adults, Kassinove (1986) administered a 60-item Personal Beliefs Test (PBT), containing irrational beliefs without the affective and behavioural impurities of the IBT, together with a negative affect checklist comprising 9 negative feelings: sad, concerned, regretful, annoyed, anxious, angry, guilty, depressed, upset. One of many findings was that irrational belief was significantly associated with negative affect ( $r=.44$ ,  $p<.01$ ).

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) consists of two 10-item factors of self-rated mood, which consistently emerge, even cross culturally (Watson & Clark, 1984). One factor for positive affect (PA) reflects the extent to which a person feels enthusiastic, active and alert. High PA represents a state of 'high energy, full concentration and pleasurable engagement'; low PA reflects 'sadness and lethargy'. The factor for negative affect (NA) represents 'subjective distress and unpleasurable engagement', reflecting the self descriptions: scared, afraid, upset, distressed, jittery, nervous, ashamed, guilty, irritable and hostile. Low NA reflects a state of 'calmness and serenity'.

Watson et al. (1988) cite earlier research, their own and others', which shows that NA (but not PA) is associated with stress, poor coping, health complaints and unpleasant events. In contrast, PA (but not NA) is assoc-

iated with social satisfaction and pleasant events. It has also been found by Watson et al. (1988) and Watson & Clark (1984) that both self-report anxiety (STAI) and depression (BDI) are significantly associated with general psychological distress (high NA) and lack of pleasurable experience (low PA). Because of this association between anxiety, depression and negative affect, as well as the high correlation often found between anxiety and depression (Gotlib, 1984), Watson & Clark (1984) have argued for a general trait of 'negative affectivity', characterised by such emotions as anxiety, anger, guilt and sadness.

Since the present investigation was exclusively concerned with dysfunctional emotion, purportedly elicited by irrational beliefs about study, negative affect descriptors like those from the PANAS scale (high NA and low PA descriptors) and Kassinove's list were considered appropriate for use in relation to specific irrational beliefs about study. One advantage of affect over anxiety and depression questionnaires, which reflect general states or traits, is that affect ratings can be sought from respondents in response to specific, unmet, irrational beliefs or dimensions.

A questionnaire, Feelings About Study (FAS), was devised to assess the negative affect experienced by students when their extreme beliefs were not met; see appendices C and J for pilot and final forms respectively. FAS presents students with 48 items corresponding to those of BAS. Each FAS item is presented as a hypothetically unmet belief about study, requiring respondents to rate their associated negative affect on a 7-point scale ranging from '0' (not at all) to '6' (extremely). For each unmet belief, for example, item 25: '*When I don't score 'A's, I feel ...*', students are asked to rate how intensely they feel on thirteen negative affects:

anxious, angry, depressed, upset, bored, guilty, irritated, dis-gusted, embarrassed, foolish, helpless, frustrated, scared. These affects were most frequently used voluntarily by respondents in the pilot study. They also share much in common with the NA (and low PA) items of the PANAS scale (Watson et al., 1988), as well as Kassinove's (1986) negative affect list.

From the discussion above, it was predicted that irrational belief about study (on BAS) would be associated with negative affect (on FAS) and, further, that negative affect would be associated with anxiety (on the STAIT) and depression (on the BDI).

### 1.8.5 Perseverance

Although perseverance has usually been treated as a dichotomous variable (completion versus withdrawal), degrees of withdrawal are possible for an initially full-time adult matriculation student, which maintain the possibility of successful matriculation. For example, a student might begin full-time with five subjects and withdraw from two during the year, incurring partial costs (disappointment, deferred qualification, loss of time and money), yet retain partial benefits (credit for three subjects and reduced pressure from the reduced load). Perseverance for this student can be quantified as 60%, the percentage of course completed.

Adult matriculants in South Australia can accrue their 5 subjects (4 for those aged 30 years or more) from examinations in three separate years, which need not be consecutive, according to the admission regulations of the University of Adelaide.



In assessing perseverance, it was decided to apply criteria similar to those used in an earlier study on a similar population of students at the same college (Linke, 1980). The following criteria were adopted:

1. Enrolment in a subject would require course payment and attendance in at least one class, as defined by the South Australian Department of Employment, Technical and Further Education (DETAFE).
2. Students withdrawing to accept late tertiary offers would be excluded from the study, since such withdrawal actually amounts to accelerated promotion.
3. Students transferring to another college to continue the course, or withdrawing to continue privately, would be retained in the study.
4. Completion of a subject would require the award of a grade, whether pass or fail, by the Senior Secondary Assessment Board of South Australia (SSABSA). Thus, any student attending for the whole year, but missing the final exam for unacceptable reasons (by SSABSA guidelines), would not receive a grade from SSABSA and would be deemed a withdrawal.

In summary then, the perseverance of a fulltime adult matriculant was defined as the final number of subjects completed (graded by SSABSA), as a percentage of the number of subjects initially undertaken. In keeping with RET, it was predicted that irrational belief would be associated with low perseverance and that the association would be stronger for study-specific irrationality (on BAS) than for general irrationality (on the IBT).

### 1.8.6 Grade Point Average

Grade point average (GPA), the average of marks, percentages or grades from a number of subjects, has been the traditional measure of academic performance. Lavin (1967) claims that GPA is 'unquestionably an index of competence in school work'. At the same time however, he draws attention to the danger in comparing GPAs of students who take different subjects, because of the inevitable variations in subject difficulty and assessment. To correct for such variations, SSABSA rescales raw scores ('scaled marks' with a maximum of 20) for the purpose of tertiary entrance.

In accordance with RET, it was expected that irrational belief would be associated with low GPA and that the association would be stronger for study-specific irrationality (on BAS) than for general irrationality (on the IBT).

### 1.8.7 Aggregate

The aggregate of scaled marks can be advanced as a general measure of performance which embraces both GPA and perseverance. Thus, a low aggregate reflects low grades (GPA) and/or withdrawal from one or more subject(s). As a criterion of performance, its use rests upon the notion that, by and large, both GPA and perseverance have similar antecedents or causes, as demonstrated by Astin (1971), and Pedrini & Pedrini (1978).

A similar criterion has been defended for an earlier group of adult matriculation students (Linke, 1980) on the grounds that performance (GPA) and perseverance (proportion of subjects completed) correlated separately

and significantly with the same predictors. Students who lacked ability, had poor study habits, were highly anxious, or were extremely unrealistic about study, tended to either withdraw from subject(s) during the year or perform poorly at the end of the year.

Whereas both kinds of students, low perseverers and low performers, are captured by aggregate, only one kind is captured by perseverance or GPA alone, resulting in the literal loss of predictor / criterion variance. The pooling of more than one measure as a criterion of performance, where justifiable, can also be advanced as an extension of the 'aggregation' principle (Azjen, 1988), resulting in the same benefit, a more sensitive and more representative criterion.

In accordance with RET, it was predicted that irrational belief would be associated with low aggregates and that the association would be stronger for study-specific irrationality (on BAS) than for general irrationality (on the IBT). Considering all of the dependent variables, it was predicted that high BAS scores would identify a group of 'at risk' students likely to be low on aggregate (reflecting both perseverance and GPA) and high on procrastination (self-report and observed), anxiety, depression and negative affect. It was further predicted that high BAS scores would identify students at risk more accurately than high IBT scores.

## 2. IRRATIONAL BELIEF & MARRIAGE

### 2.1 INTRODUCTION

This section begins with a consideration of two of the major theories of marital dysfunction, the interactionist / behavioural and the individual / cognitive positions. Some limitations of the more popular interactionist position are first addressed, including some confounding cognitive aspects. The cognitive position is then examined in detail, with particular emphasis on the relationship of irrational belief to marital satisfaction.

An argument was advanced for a new definition and a new test of irrational belief, based upon a better theoretical base than that offered by RET. It was argued that irrational belief is more validly and appropriately defined as dissonance, using Cognitive Dissonance Theory (Festinger 1957), than as the traditional extreme belief, using Rational Emotive Theory (Ellis, 1958).

It was proposed that the new measure should feature the refinements already implemented in the questionnaire, 'Beliefs About Study' (BAS), namely, content specificity, improved cognitive purity and reduced item redundancy. It was asserted in chapter 1 that a test with these features should improve upon many of the traditional general tests of irrational belief. In addition, it was resolved that the new measure would assess dissonance as well as extreme belief, to enable a comparison of the two as predictors of marital dissatisfaction.

## 2.2 MARITAL DYSFUNCTION: MAJOR THEORIES

The two major approaches to the understanding of marital dysfunction are the interactionist / behavioural and the individual / cognitive (Doherty, 1981a, 1981b; Fitzpatrick, 1988). While cognitive theories have been less prominent than interactionist models (Fitzpatrick, 1988), cognition is now resurfacing with increasing recognition as an important contributor to the field (Bradbury & Fincham, 1992; Dryden, 1985). Recently, cognition has even been found to operate within research assumed to be exclusively interactional (Epstein, Pretzer & Fleming, 1987). Bradbury, Campbell & Fincham (1995), Doherty (1981a, 1981b), Epstein et al. (1987), Fincham & Bradbury (1987b) and Jacobson & Margolin (1979) argue that both theories should be embraced for a satisfactory analysis of marital dysfunction.

### 2.2.1 The interactionist position

Protagonists of the interactionist position (e.g. Arias & O'Leary, 1985; Fitzpatrick, 1988) assert that marital dysfunction mainly arises from destructive interpersonal communication and behaviour. The converse seems to apply as well; that is, marital dissatisfaction predicts later conflict style, as demonstrated in a longitudinal study by Noller, Feeney, Bonnell & Callan (1994), which also indicated that conflict style and marital dissatisfaction are reciprocally related over time. Notwithstanding its undeniable relevance to marital functioning and satisfaction (Bradbury et al., 1995; Bradbury & Fincham, 1992; Noller, 1988; Russell & Wells, 1994), the interactionist approach may well have enjoyed its prominence for at least three additional but questionable reasons.

Firstly, the consistently strong correlations found between self-report measures of marital communication and marital satisfaction have often been interpreted as evidence that faulty communication skills are the main cause of marital distress, consequently calling for behavioural interventions (Arias & O'Leary, 1985; Geiss & O'Leary, 1981; Fitzpatrick, 1988). However, recent studies have found low correlations between husbands' and wives' self-reports of their communication and between spouse reports and observer ratings (Jacobson & Moore, 1981). Floyd & Markman (1983) have also found evidence to suggest that the differences between spouses' ratings of their own interactions and observer ratings are due to cognitive biases of spouses, not those of observers.

Many studies have revealed the cognitive bias of spouses' recollections and evaluations of their marital behaviour (Fincham & Bradbury, 1987a; Ross & Sicol, 1979; Thompson & Kelley, 1981). Considering such findings, Epstein et al. (1987) question whether self-reports and observer ratings of marital communication measure the same construct and whether strong correlations between self-report measures of communication and marital distress imply communication training as the primary intervention. They propose that spouses' self-reports of communication reflect their 'perceptions' rather than actual communication, thereby confounding interactional research data with a cognitive element and casting doubt on the meaning of many interactional research findings. They conclude that, since spouses' self-reports of communication problems reflect cognitive biases rather than actual communication, it is appropriate to consider cognitive intervention as well as behavioural training.

Secondly, what is presented as a communication problem in therapy often appears to have other roots. Dryden (1985) reports that couples often explain their marital problems as due to communication blocks which, in reality, actually result from their hurt, anger and depression which, in turn, stem from their own unfulfilled, 'irrational' expectations of marriage. In therapy, Bagarozzi & Anderson (1989) and Lazarus (1985) are quick to focus on the 'irrational beliefs' of spouses as well as their presenting problems, claiming that the former usually cause the latter.

Thirdly, reductionistic adherence to one paradigm tends to generate both explanations and solutions for marital distress from within that paradigm. Interactionists (e.g. Arias & O'Leary, 1985; Fitzpatrick, 1988; Geiss & O'Leary, 1981; Noller, 1988) typically rate communication problems as the most frequent of marital problems, the most damaging toward marital relationships which, therefore, warrant the dominant focus of marital research and therapy.

Guthrie & Snyder (1988) and Christensen (1988) cite considerable evidence of the recurring demands of distressed wives for more emotional expression, attention, exchange of intimate information, expressions of love and acceptance from their husbands. To account for these findings, as well as a wide range of other empirical data, Noller (1988) proposes an interactional 'demand-withdraw' paradigm for marital dysfunction whereby, in conflict, husbands tend to withdraw, wives demand attention, men withdraw further, wives demand more intensely and so on, in an escalating maladaptive cycle. Gray (1990, p.111) agrees that men typically react to stress by withdrawing into their thoughts to determine how to reduce that stress, whereas women tend to react with an 'upsurge of feelings'.

Interestingly, while Noller (1988, p.344) recognises that cognitive, perceptual and attitudinal differences in husbands and wives contribute to very different interaction behaviours, her interactional paradigm for marital discord neglects to pay due regard to the cognitive contributions. Neither do her therapeutic solutions, which are largely of the behavioural kind, ignoring those underlying extreme marital beliefs and expectations, variously described by others as 'irrational' (Ellis, 1962, 1989b), 'unrealistic' (Epstein & Eidelson, 1981), 'fallacious' (Hartin, 1977) and 'mythical' (Bagarozzi & Anderson, 1989; Bernard, 1986; Lazarus, 1985). Bradbury & Fincham (1992) point out that, although behavioural studies have revealed important aspects of marital interaction, they give little consideration to spouses' premarital goals, expectations and their prior experiences in the relationship.

Bradbury & Fincham (1992) acknowledge the well documented interactional differences between distressed and non-distressed couples: their greater exhibition of, reciprocation of, and reactivity to negative partner behaviour, distressed wives being found particularly prone. For distressed couples, it has been found that wives are more inclined than their husbands to display and reciprocate negative behaviour (Floyd & Markman, 1983) and to practise less effective problem-solving behaviour (Bradbury & Fincham, 1992). Bradbury & Fincham emphasise, along with Fitzpatrick (1988, p.11), that very little research has been conducted to determine the factors which contribute to these differences.



### 2.2.2 The cognitive position

Fincham & Bradbury (1987b) and Bradbury and Fincham (1987) report that research on the effect of cognition on close relationships has been dominated by the notion of 'attribution', particularly the attribution to a partner of 'cause' and 'responsibility' for marital problems and negative behaviour. They see 'responsibility attribution' as originating from one's 'marital expectations' of one's partner and the subsequent 'mismatch between actual and ideal behaviour'. In short, it is the attribution of 'responsibility' to one's partner for expectations unfulfilled.

This causal sequence has strong support from the clinical evidence that irrational beliefs, or marital myths, are a major cause of marital discord (Bagarozzi & Anderson, 1989; Bernard, 1986; Dryden, 1985; Ellis, 1962; Ellis & Harper, 1961a; Lazarus, 1985; Sager, 1976). Fincham & Bradbury (1987b) suggest that, aside from 'attribution', 'unrealistic relationship expectation' could be the major alternative cognitive variable. It is one of the variables used in the present study.

### 2.2.3 The cognitive-interactionist position

The danger of reductionistic analysis while arguing largely within the parameters of one theoretical approach is acknowledged by Bradbury & Fincham (1992), Fincham & Bradbury (1987b) and Jacobson & Margolin (1979). Baucom & Epstein (1990) and Doherty (1981a, 1981b) urge the integration of both cognitive and interactionist theories in researching and attempting to explain marital discord. In a recent longitudinal study, Bradbury et al.

(1995) demonstrated that changes in marital satisfaction are a function of both intrapersonal and interpersonal factors. Doherty warns that an exclusively psychological / cognitive approach to marriage is likely to lose sight of the couple as a system, that is, 'miss the forest for the individual trees'. Equally, an exclusively interactionist approach is likely to 'miss the trees for the forest'.

Irrational marital beliefs distort the filtering, processing and appraising of marital events in a dysfunctional manner (Kurdek, 1993). Dryden (1985, p.203) presents a marital interaction model which embraces both cognitive and behavioural elements. The model demonstrates that spouses make interpretations of each other's behaviour which, during marital disturbance, are often coloured by irrational and evaluative thinking and, therefore, are particularly prone to be faulty. Dryden calls upon Beck's et al. (1979) notion of 'cognitive distortions' to explain how distressed partners make errors in processing interpersonal information, thereby tending to perpetuate the disturbance. Callan, Gallois, Noller & Kashima (1991, p.265) propose a similar model.

From a longitudinal study, Fincham & Bradbury (1987b) tentatively suggest that relationship expectations give rise to causal and responsibility attributions which, in turn, affect marital interaction and satisfaction. Fitzpatrick (1988, p.10) criticises such attribution theories as 'static models', because they assert that individuals assign cause and responsibility to spouse behaviour, while failing to suggest 'why or even how such processes operate'.

Bradbury & Fincham (1992) provide support for their cognitive-behavioural

model. They found that spouses' negative attributions (particularly those of wives) are related to less effective problem-solving behaviours, higher rates of negative behaviour and tendencies to reciprocate negative partner behaviour. Associations were stronger for distressed than non-distressed wives, in keeping with the hypothesis that negative attributions contribute to conflict behaviour and relationship dysfunction. In short, the roots of communication problems are often likely to be cognitive, at least in part.

### 2.3 CLINICAL EVIDENCE

The clinical evidence for the contribution of irrational beliefs to marital dissatisfaction and dysfunction is difficult to ignore. More than three decades ago, Ellis & Harper (1961a) and Ellis (1962) emphasised that marital problems often stem from a large discrepancy between what partners expect of marriage and what they receive from it. RET has been applied to marriage and family counselling since its inception (Ellis, 1989b; Ellis & Dryden, 1987). Ellis & Harper (1961a, pp.17,18) have asserted that people enter marriage

*'with a basic set of assumptions, beliefs, attitudes or philosophies of living' ... usually 'prejudiced, unrealistic and illogical'.*

When unmet, these irrational expectations are inevitably manifest in neurotic behaviour by partners towards each other. While emphasising the primacy of cognition in the aetiology of marital discord, Ellis & Harper also recognise interaction. They assert that negative behaviour by one partner will be reciprocated by the other, and so on, creating a 'vicious circle' which serves to both maintain and escalate marital discord.

Sager (1976, pp.4-6) too, reports that partners bring to their relationship certain 'reciprocal expectations and obligations' about what they will give to and receive from each other and the relationship. For Sager, marriage 'contracts' include all kinds of expectations, which are 'expressed and unexpressed, conscious and beyond awareness' and deal with all aspects of family life: money, power, sex, leisure, children, achievement and friends, to list but a few.

From clinical observation, Sager (1976, pp.108-132) proposes many marital 'behavioural profiles', each of which brings corresponding expectations into play. For instance, 'romantic partners' expect to be the sole and continual object of love, attention and romantic gesture, short of which they feel denied, unloved and incomplete. 'Childlike partners' expect to be cared for, protected, disciplined and guided, and become anxious and insecure when they are treated otherwise. When a partner's expectations are unmet, maladaptive emotion and behaviour follow, 'as though a real agreement had been broken'. Contractual disappointments are seen by Sager as a major source of marital discord.

Lazarus too regards marriage problems as arising largely from spouses' mythical beliefs. In his book, 'Marital Myths' (1985, p.2) he claims that most couples enter marriage with 'impossible dreams and unrealistic expectations'. From 25 years of marriage and sex psychotherapy, he describes 24 'marital myths', such as the unrealistic belief that

*'husbands and wives should do everything together',*

*'having a child will improve a bad marriage',*

*'marriage can fulfil all dreams' and*

*'good spouses should make their partners happy'.*

When counselling a couple prior to marriage, he routinely asks each spouse to create a 'job description' (for his / her partner) to establish marital expectations. To improve an existing marriage, he considers the discarding of such myths as the first step. Bagarozzi & Anderson (1989) and Jacobson & Margolin (1979) similarly stress cognitive evaluation as part of the initial assessment.

Hartin (1977, p.139) cites 'the expectations people bring to marriage' as constituting the first of four major considerations for a happy marriage. He sees spouses entering marriage with 'a script or role prescription' which they expect their partners to act out (Hartin, 1993, p.43). When a spouse's partner departs from the script, the spouse is 'likely to become angry, bewildered, frustrated or confused'. Colling (1981, p.23) reports similar responses of spouses when their partners fail to behave according to the 'pictures' spouses have of them.

In summary, clinical evidence is persuasive and abundant that irrational beliefs about marriage contribute heavily towards marital dissatisfaction and discord. Nonetheless, as Frude (1979, p.34) notes,

*'Caution must be exercised in drawing any conclusions about theory from the therapeutic success or failure of a theory-based technique.'*

He warns that non-specified variables may also operate in an intervention to influence therapeutic outcome. Consequently, research evidence is needed to assess the effects of irrational belief on marital satisfaction.

## **2.4 RESEARCH EVIDENCE**

Empirical evidence which directly relates irrational belief to marital dissatisfaction is scarce, but increasing. The first self-report test of irrational beliefs about marriage, the Relationship Beliefs Inventory (RBI), was produced by Epstein & Eidelson (1981), subsequently stimulating a small number of investigations (Eidelson & Epstein, 1982; Emmelkamp, Krol, Sanderman & Ruphan, 1987; Epstein et al., 1987; Fincham & Bradbury, 1987b; Holtzworth-Munroe & Stuart, 1994; Kurdek, 1991, 1993), which generally support the association between irrational marital beliefs and marital dissatisfaction.

Notwithstanding the paucity of direct evidence, an increasing body of research is accumulating which, it is argued, relates irrational belief to marital dissatisfaction indirectly via a mediating variable, 'attribution' (Fincham & Bradbury, 1987b), referring to spouses' attribution to their partners of negative marital behaviours, blame and intention.

Research evidence is considered below for three major cognitive predictor variables, which are also employed in the present study: irrational belief, attribution and self attribution bias.

### **2.4.1 Irrational belief**

Epstein & Eidelson (1981) devised the first Relationship Beliefs Inventory (RBI), which specifically assesses irrational beliefs about marriage. The three subscales of the RBI deal with the irrational beliefs: 'disagreement

is destructive' (D), 'mindreading is expected' (M) and 'partners cannot change' (C), themes they report to be commonly cited by marital and family therapists as threats to marital satisfaction.

'Distressed' couples (N=47), defined as such by low marital adjustment scores on the Marital Adjustment Scale (Locke & Wallace, 1959) and by their participation in marital therapy, completed the RBI and a number of other measures, including three subscales of general irrational belief from the Irrational Beliefs Test (IBT; Jones, 1968): scale (1) 'Approval', scale (2) 'Performance' and scale (4) 'Catastrophisation'. Amongst other findings, it emerged that five of the six scales bore weak, but significant, negative correlations with marital adjustment: for the RBI scales D ( $r=-.27$ ,  $p<.05$ ), M ( $r=-.22$ ,  $p<.05$ ) and C ( $r=-.38$ ,  $p<.01$ ); for the IBT scales: (1) ( $r=-.24$ ,  $p<.05$ ), (2) ( $r=-.27$ ,  $p<.05$ ) and (4) ( $r=-.18$ ). Thus, neither scale was highly associated with marital maladjustment; neither was the RBI significantly better than the IBT overall. Regression analyses of marital satisfaction on the sub-scales of both tests yielded a marginally higher multiple correlation for the specific RBI ( $R=.4$ ,  $p<.01$ ) than for the general IBT ( $R=.26$ ,  $p<.06$ ); however, the difference was not significant ( $Z=1.06$ ,  $p<.29$ , using Fisher's r-to-z transformation) and neither test explained sufficient variance for practical purposes.

In a similar subsequent study, Eidelson & Epstein (1982) expanded the RBI from three to five scales, adding 'Sexual perfectionism' (S) and 'The sexes are Different' (MF). The RBI was administered to 52 non-distressed and 48 distressed couples. As in the previous study, correlations between the RBI scales and marital adjustment, for the combined group (N=200) of all partners, were generally small and negative, but significant.

In an independent study of 179 'clinical' couples, those who had voluntarily applied to Community Mental Health Centres for marital distress treatment, and 414 'non-clinical' couples (randomly selected from Dutch communities), Emmelkamp et al. (1987) assessed the reliability and validity of the RBI. Modest support was found for the RBI's construct validity. Its internal consistency was low but adequate, although values of Cronbach's alpha were probably artificially inflated because of the considerable redundancy of subscale items. The RBI was found to be unaffected by the social desirability response bias, and it proved to have low but adequate test-retest reliability. Regretably, the RBI lacked discriminant validity, since, on three of the five subscales, distressed couples scored as less irrational than normal couples. However, the group of couples randomly selected from the community, purportedly 'nonclinical', may well have included some who were experiencing marital distress, a possibility not discussed by Emmelkamp et al..

Reverting to the original three scales of the RBI, Epstein et al. (1987) administered it together with measures of communication, attribution and marital satisfaction to 156 married subjects of mixed marital adjustment. Correlations between the three RBI scales and marital satisfaction were generally stronger than in previous studies ( $r = -.54, -.47$  and  $-.49; p < .001$ ). Multiple regression analyses indicated that, while irrational belief, communication and attribution overlapped considerably in predicting marital satisfaction, each made unique contributions to the explained variance, total contributions ranging from 53% to 72%, further confirming the importance of cognition in explaining marital satisfaction.



Using the RBI as their measure of irrational belief, along with measures of negative attribution and marital satisfaction, in a longitudinal study of 34 couples, Fincham & Bradbury (1987b) replicated the significant negative correlation between irrational belief and marital adjustment for wives ( $r = -.41, p < .01$ ) and for husbands ( $r = -.31, p < .05$ ).

In a five year longitudinal study of 222 newlyweds, assessed annually on numerous variables including irrational marital belief on the RBI, Kurdek (1993) found that high initial levels of irrational belief, for both husbands and wives, predicted dissolution. Kurdek also found irrational belief to be a 'relatively enduring predisposition', as evidenced by the stability of irrationality scores over all annual assessments.

While findings reported on the properties and usefulness of the RBI have varied, they have consistently supported the association between irrational belief and marital dissatisfaction. Nonetheless, it does appear that with only three scales, each highly redundant in content, the RBI needs more breadth, more dimensions of irrationality and a greater diversity of content within each dimension for improved sensitivity to the variety of irrational beliefs known to be held by distressed couples (Bagarozzi & Anderson, 1989; Bernard, 1986; Dryden, 1985; Ellis & Harper, 1961; Hartin, 1977, 1988, 1993; Lazarus, 1985; Sager, 1976).

Eidelson & Epstein (1982) have acknowledged from the outset that the RBI was not intended to provide a comprehensive assessment of all important dysfunctional relationship beliefs, merely an 'initial step'. Epstein (1982) recommends that a comprehensive assessment of marital expectations should include unrealistic marital expectations (e.g. Epstein & Eidelson,

1981; Jacobson & Margolin, 1979), as well as Ellis' (1962) general irrational beliefs. These sources, together with other clinical evidence (e.g. Hartin, 1977, 1993; Lazarus, 1985; Sager, 1976) were tapped for the content of Beliefs About Marriage (BAM), the questionnaire devised for the present study.

#### 2.4.2 Attribution

Another concept springing from irrational relationship expectations is that of attribution. It is widely agreed that spouses' misperceptions of their partners' characters and motivations are highly important in the genesis and maintenance of marital discord (Doherty, 1981a, 1981b; Jacobson & Margolin, 1979; Jacobson, McDonald, Follette & Berley, 1985; James & Wilson, 1986). Fincham & Bradbury (1987b, 1992, 1993) apply the notion of 'responsibility attribution' to the study of married couples. They define 'responsibility attribution' as embracing three basic elements:

1. a spouse's '*expectations*' of his / her partner,
2. the spouse's perceived '*mismatch between actual and ideal behaviour*',
3. and the spouse's '*attribution of blame*' to his / her partner.

All of these elements have fundamental importance in the abundant clinical evidence that irrational beliefs are a major cause of marital discord. Consequently, research relating negative attribution to marital discord is pertinent to the present study. In particular, the 'robust' association found consistently between attribution and marital discord (Bradbury & Fincham, 1992; Fincham & Bradbury, 1987b, 1993; Fincham, Beach & Nelson, 1987) augurs a similar prediction for the present study, since the

questionnaire, Beliefs About Marriage (BAM), generates a measure of 'attributional dissonance', embracing key elements of 'responsibility attribution', as defined by Fincham & Bradbury (1987b).

### 2.4.3 Self attributional bias

As well as studying the concepts of irrational belief and attribution, cognitive research has examined the notion of 'self attributional bias', that is, spouses' biases in judgements of responsibility for relationship events. Ross & Sicoly (1979) found that spouses claimed greater contributions to both positive and negative marriage activities (e.g. preparing meals, making financial decisions, causing arguments) than their partners attributed to them.

In a later study, Thompson & Kelley (1981) related attributional bias to marital satisfaction, revealing that satisfied spouses were more willing to attribute 'good things' to their partners, than less satisfied spouses.

Fincham & Bradbury (1987a) elaborated on Thompson's & Kelley's finding. They found that high marital satisfaction of spouses is associated with higher self-attribution for negative events and lower self-attribution for positive events, compared with the contributions attributed by partners. That is, self attributional bias depends upon both marital satisfaction and the kinds of events attributed. The questionnaire for the present study (BAM) also generates a measure of self attributional bias.

## 2.5 COGNITIVE DISSONANCE THEORY

It is proposed that the core postulate of Ellis' (1958) Rational Emotive Theory (RET) is similar to that of Festinger's (1957) Cognitive Dissonance Theory (CDT) and that RET is of narrower scope and less precisely defined than CDT (Smith, 1982). Thus, RET can be embraced and replaced by CDT for the study of irrational belief. In so doing, a superfluous theory is avoided (Aronson, 1992), along with its numerous definitional problems (Cramer, 1993; Eschenroeder, 1982; Mahoney 1980, Rorer, 1989a; Ziegler, 1989) and its problematic self-report measures (Haaga & Davison, 1989; Kassino, 1986; Smith, 1982), which may largely explain why the empirical evidence for RET is often regarded by independent scrutineers as equivocal and, at best, only modestly supportive (Mahoney et al. 1989; Smith, 1982). As discussed earlier in section 1.4, the equivocal, inconsistent, empirical evidence seems to fall short of the strong, consistent, clinical evidence.

In a critical review of the RET model, in which he criticises the looseness and lack of rigour in RET constructs, Smith (1982) makes a rare appeal for an alternative theory, namely Cognitive Dissonance Theory (CDT). In reference to Wicklund's & Brehm's (1976) perspectives on CDT, he comments:

*'... perhaps well delineated social psychological principles (e.g. Wicklund & Brehm, 1976) could provide a degree of theoretical consistency and order to ... rational-emotive techniques'*

Like other cognitive consistency theories at the time, such as Osgood's & Tannenbaum's (1955) 'Principle of Congruity' and Heider's (1958) 'Balance Model', Festinger's Cognitive Dissonance Theory (CDT) rests axiomatically

upon the gestalt notion of one's need for perceptual and cognitive organisation. Festinger also cites Kelly's (1955) view of man as a 'scientist', who needs to make sense of his world. Lewin (1951) is acknowledged too, for his idea that our perceptions and cognitions exist in a 'dynamic field', exerting pressure on one another toward change.

For Festinger (1957, p.3), the term 'cognition' is used to embrace

*'any knowledge, opinion or belief about the environment, about oneself or about one's behaviour'.*

Festinger asserts that, whenever certain cognitions are inconsistent ('dissonant') with another important cognition, an uncomfortable state of tension ('psychological discomfort') is generated, which the person is motivated to reduce, in the drive for consistency ('consonance').

Applying Festinger's theory to marriage, it would be expected that, when a spouse holds the belief (B), "We should always agree", which is discrepant ('dissonant') with the perceived reality (R), "We rarely agree", the discrepancy ('cognitive dissonance') between B and R would

1. generate 'psychological discomfort' (e.g. anxiety, anger),
2. motivate the person to reduce the dissonance and discomfort, and
3. the amount of dissonance and discomfort would be a function of
  - a. the 'importance' of the dissonant cognition(s), as well as
  - b. the 'proportion of dissonant to consonant cognitions'.

The spouse would try to reduce dissonance and discomfort,

1. by changing dissonant cognitions  
e.g. accepting a few differences or disagreements as the norm.
2. by adopting new consonant cognitions  
e.g. focusing more on the other's good features.

3. behaviourally

e.g. seeking counselling, practising better conflict resolution.

### 2.5.1 CDT and RET: A Comparison

The proposition that CDT is paradigmatically similar to RET for the study of irrational belief, but with broader scope and better theoretical framework, is based upon the following comparison of the two theories on seven dimensions: basic elements, paradigms, motivation, magnitude of discomfort, the subject's response, therapy and constructivism versus rationalism, as summarised in table 1.

#### 2.5.1.1 Basic elements

CDT and RET rest on their basic elements: 'cognition' and 'irrational belief' respectively. Unlike Festinger's (1957) notion of 'cognition', the definition of 'irrational belief' has been severely criticised as 'unclear' (Mahoney, 1979; Smith, 1982), 'circular' (Lazarus, 1989; Rorer, 1989a) and 'variable' (Rorer, 1989a; Smith, 1982). Ellis (1989a) concedes that these criticisms have some justification. In applying modern RET to the above marriage situation, the irrational belief (IB) might be typically expressed as: "We should always agree and, when we don't, I can't stand it". This statement embraces belief (B = 'We should always agree'), a perceived reality (R = "... we don't"), an implied discrepancy or dissonance between that belief (B) and reality (R) and a resulting negative evaluation ("I can't stand it").

**TABLE 1**

**Cognitive Dissonance Theory versus Rational Emotive Theory**

	<b>COGNITIVE DISSONANCE THEORY (CDT)</b>	<b>RATIONAL EMOTIVE THEORY (RET)</b>
<b>1. BASIC ELEMENT</b>	<p><b>COGNITION</b> includes any</p> <ul style="list-style-type: none"> <li>- belief (B)</li> <li>- opinion</li> <li>- knowledge</li> </ul> <p>about:</p> <ul style="list-style-type: none"> <li>- oneself</li> <li>- one's behaviour</li> <li>- one's environment</li> </ul>	<p><b>IRRATIONAL BELIEF (IB)</b> is defined to include:</p> <ul style="list-style-type: none"> <li>- extreme rigid belief</li> <li>- dissonance</li> <li>- evaluation</li> </ul> <p><i>[definitions vary]</i></p>
<b>2. PARADIGM</b>	<p>dissonance (B-R)</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">▼</p> <p>discomfort      attempted E      →      dissonance    reduction</p>	<p>irrational belief IB</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">▼</p> <p>emotion      rational E      →      emotive    therapy</p>
<b>3. MOTIVATION</b>	<p>People need consistency. They attempt to</p> <ul style="list-style-type: none"> <li>- reduce dissonance</li> <li>- increase consonance</li> </ul>	<i>[no key statement]</i>
<b>4. MAGNITUDE OF DISCOMFORT</b>	<p>Magnitude of dissonance &amp; discomfort is related to</p> <ul style="list-style-type: none"> <li>- importance of B</li> <li>- ratio <math>\frac{\text{dissonant Bs}}{\text{consonant Bs}}</math></li> </ul>	<i>[no key statement]</i>
<b>5. PREDICTED SUBJECT'S RESPONSE</b>	<p>Subject attempts to reduce dissonance &amp; discomfort by</p> <ul style="list-style-type: none"> <li>- changing dissonant Bs</li> <li>- adding consonant Bs</li> <li>- behavioural change</li> </ul>	<i>[no key statement]</i>
<b>6. THERAPY</b>	<p>CDT can embrace RE Therapy <i>(both elegant &amp; inelegant)</i></p>	<p>cognitive restructuring <i>('elegant' RET)</i> cognitive/behavioural therapy <i>('inelegant' RET)</i></p>
<b>7.</b>	'constructivist'	'rationalist'

As argued in chapter 1, the crucial element of discrepancy ('dissonance') in the current RET definition of 'irrational belief' is not captured by the traditional self-report tests, such as the general Irrational Beliefs Test (IBT; Jones, 1968) and the specific Relationship Beliefs Inventory (RBI; Epstein & Eidelson, 1981), which are designed to measure the extremeness of belief only (Hovland & Alsaker, 1986).

In the case of marriage, it is reported from clinical evidence (Bagarozzi & Anderson, 1989; Dryden, 1985; Ellis & Harper, 1961; Hartin, 1977, 1993; Lazarus, 1985; Sager, 1976) that spouses commonly enter marriage with unrealistic expectations (e.g. 'We should always agree'). When their unrealistic expectations are not met, they are likely to experience dissatisfaction and emotional and behavioural dysfunction. Thus, in CDT terms, unrealistic expectations are likely to be 'dissonant' with perceived reality and, when they are, they produce 'psychological discomfort' (Aronson, 1989, 1992; Berkowitz & Devine, 1989a; Elliot & Devine, 1994; Festinger, 1957; West & Wickland, 1980; Wickland & Brehm, 1976). It is the dissonance, the unmet expectation, which does the damage, not extreme expectation per se, even though extremeness of expectation makes dissonance more likely in a purely statistical sense.

This distinction is further supported by those clinicians (e.g. Hartin, 1977, 1993; Sager, 1976) who recognise that, while happy couples are found to have much in common, they can also vary considerably in what they want of each other. For instance, one spouse might have an extreme need for approval, receive a lot and be happy, in line with CDT but contrary to RET. Another spouse might be satisfied with occasional approval, but receive none at all and be unhappy, again, in line with CDT but contrary to RET.



Unhappiness here is directly related to dissonance, consistent with CDT, and inversely related to extreme expectation, contrary to RET.

At least one study has sought to measure irrational belief by other than extreme belief. Hovland & Alsaker (1986) devised a scale of twelve items which included elements of dissonance and emotional consequence, more fully reflecting the current notion of irrational belief. For example, their 'demand for approval' item was framed as follows.

*'I feel insecure, begin to worry or become upset when I experience not being approved of, accepted or loved.'*

Here, the implicit belief (B) was the need or demand for acceptance, the reality (R) was non-acceptance and the discrepancy or dissonance between the two (B-R) made the respondent upset (the emotional consequence). Respondents were asked to rate the frequency with which they experienced the presented paradigm on a scale from 0 to 5, high scores reflecting high levels of irrationality.

Hovland & Alsaker also devised a corresponding scale of 12 extreme rigid beliefs, in the traditional RET vein. Thus, the 'demand for approval' item was expressed as:

*'It is absolutely necessary for me to be approved of, accepted or loved.'*

The two irrationality scales and a self-report scale of psychopathology were administered to 199 undergraduate students. In terms of both internal consistency and construct validity, the dissonance scale was found to be 'more promising'. Its correlations with all nine psychopathology subscales were significant ( $r=.25$  to  $.55$ ,  $p<.01$ ), and consistently higher than those for the corresponding traditional scale.

Unfortunately, the possibility of common content between the dissonance scale and the psychopathology scale was not addressed by Hovland & Alsaker. Common content would have artificially inflated the correlation between the two self-report measures (Smith, 1982). In addition, it may be difficult to know whether respondents genuinely experience the paradigms presented, or simply acquiesce to their suggestive appeal (Jacobson et al., 1985). Finally, the inclusion of emotional consequence in the paradigmatic items follows the unacceptably circular definition that irrational belief causes negative emotion by definition (Rorer, 1989a), as Ellis (1989a) himself concedes. It would be interesting to assess the instrument's performance with that confounding element (the emotional consequence) omitted, simply leaving a type of dissonance scale. In the present study, irrational belief was defined as the discrepancy between subjective belief and perceived reality.

#### 2.5.1.2 Paradigms

Because of the dissonance element in irrational belief, the RET paradigm (irrational belief causes negative emotion) is, at first, basically similar to that of CDT (the discrepancy between belief and perceived reality causes psychological discomfort). Thereafter, the two theories part, in that CDT addresses the subject's motivation to reduce dissonance, while RET attends to therapeutic strategy, perhaps predictably, since it grew from and continues to emphasize clinical application over theoretical tightness. By Ellis' own admission (Ellis, 1989b, p.223), the 'principal focus (of RET) is therapy'.

#### 2.4.1.3 Motivation

CDT predicts that dissonance will not only cause a subject to experience an aversive 'psychological discomfort' (Aronson, 1989, 1992; Berkowitz & Devine, 1989a; Elliot & Devine, 1994; Festinger, 1957), but motivate the subject to reduce that discomfort by reducing the dissonance which caused it. Like CDT, RET predicts the discomfort and general dysfunction, but sidesteps the subject's motivation to reduce dissonance, attending instead to therapeutic implications. Ziegler (1989) rates RET as 'low' on 'comprehensiveness' partly because, as a theory of personality, it fails to address motivation. Ellis (1989a) accepts Ziegler's criticism. Although the subject's motivation does not form a basic tenet of RET, one fleeting recognition of the notion appears in the book, 'Overcoming Procrastination' by Ellis and Knaus (1977, p.63), where the authors state:

*'wanting x and getting less... (causes) frustration (which)... motivates one to reduce that frustration',*

a comment which essentially mirrors the fundamental CDT paradigm.

#### 2.5.1.4 Magnitude of discomfort

CDT postulates that the magnitude of dissonance and the associated psychological discomfort are a function of both the 'importance' of the subject's cognition and the 'proportion of relevant elements that are dissonant' with the cognition in question (Festinger, 1957, pp.16-17).

What CDT has defined explicitly about the magnitude of dissonance and the degree of associated discomfort, RET has ignored, assumed, implied or, at most, given cursory mention (Kassinove, 1986). One such mention comes from

Dryden (1985, p.201) in regard to marital incompatibility from an RET perspective; he makes the comment:

*'Generally, the more important the area (of incompatibility), the greater the dissatisfaction'.*

Although RET provides no core statement equivalent to that of CDT (Kassinove, 1986), it seems generally implicit in RET literature, that the more extreme and rigid the belief (and, hence the more important), the greater is the resulting dysfunction. Rorer (1989b) also asserts that 'importance' is implied by the evaluation which characterises irrational belief.

#### 2.5.1.5 Subject's response

CDT predicts that a subject will automatically try to reduce dissonance and the associated emotional discomfort, unlike RET, which posits no equivalent process, being more concerned with therapist strategy instead. According to CDT, dissonance with a certain important cognition motivates one to alter dissonant beliefs, take on new consonant beliefs or change behaviour, each toward consonance with the important cognition in question.

Unfortunately, one of the most common criticisms of CDT has been the ambiguous prediction of dissonance-reducing effects (e.g. Brown, 1965). Eagly (1992) considers that the initial decline in the popularity of all broad theories from social psychology, including CDT, was

*'the failure of theories to encompass the detail of the empirical findings that they helped inspire.'*

In regard to that criticism, it has been emphasised by Aronson (1992) and West & Wickland (1980) that investigators need to nominate in advance which method of dissonance reduction will be adopted, as well as the conditions under which it is likely to occur. Festinger himself (1957) provided one guide, namely, that some cognitions are more resistant to change than others. An important prior decision (e.g. returning to study or getting married) is especially resistant to change, particularly when the decision-maker feels 'responsible' for that decision (West & Wickland, 1980). Dissonance reduction will then occur via other less resistant cognitions, for example, by modifying counter-cognitions.

A common method of reducing marital dissonance, emphasised by clinicians, is for partners to 'revise' their unrealistic marital expectations (Hartin, 1977, p.22), to modify them 'in line with their experiences' (Dryden, 1985, p.201), thereby reducing 'ideal / perceived spouse discrepancy' (Bagarozzi & Anderson, 1989, p.94). That is, initial marital expectations tend to converge towards marital realities, in line with Festinger's (1957) post-decision dissonance effect.

#### 2.5.1.6 Therapy

While RET is more a theory about therapy and personality change than of general personality (Ellis, 1979c; 1989a), CDT has also been widely applied therapeutically. Brehm (1976) devotes two chapters of her book, 'The Application of Social Psychology to Clinical Practice', to the clinical applications of CDT. She comments (p.116) that,

*'dissonance has been found to be applicable to so many human*

*behaviours that it would be strange indeed if it did not apply to those very human behaviours of importance in therapy'.*

Dissonance techniques have been successfully applied in many therapeutic areas, such as helping clients lose weight (Axsom & Cooper, 1981), reduce phobias (Cooper, 1980) and resolve marital conflicts (Richard, 1985).

Brehm (1976) proposes that Frank's (1973) view of psychotherapy, as essentially an attitude change paradigm, is in keeping with CDT and is therefore readily explicable in CDT terms. Bagarozzi & Anderson (1989, p.27) argue that all psychotherapy, whatever the underlying school of thought, involves the therapist as a facilitator / provider of cognitive restructuring and behavioural change directed at reducing the client's dissonance. In particular, 'elegant' RET, the therapist's disputation (D) of the subject's irrational beliefs (stage 'D' of Ellis' ABCDE model) to promote and facilitate the client's effective (E) functioning (stage 'E'), simply amounts to facilitation of the subject's cognitive restructuring towards consonance, in CDT terms.

The use of behavioural methods to change cognition and affect ('inelegant' RET), is also readily accommodated by CDT (Brehm, 1976; Festinger, 1957), perhaps more readily than by RET itself, since RET rests upon the primacy of cognition as a 'basic tenet', as claimed by Ellis himself (1989b), although elsewhere (Ellis, 1989a, p.211), he insists that RET has become interactionist, commenting that,

*'RET has not yet developed its own detailed theory of how emotions and behaviours influence or cause thinking, but accepts (at least tentatively) others' formulations of such theories'.*

However, Mahoney et al. (1989) remain unconvinced by Ellis' rationale.

### 2.5.1.7 Constructivism versus rationalism

It is argued that CDT is concerned with the subjective discrepancy between personal marital expectations and perceived realities in accordance with a 'constructivist' position, while RET imposes absolute criteria of extreme marital expectations according to a 'rationalist' position.

As reported in section 1.2.5, Ellis (1989b) posits RET as an 'existential, phenomenologically oriented therapy'. Contrary to Ellis' claim, Mahoney (1980) and Wessler (1992) assert that, in RET, a client is taught to take on the therapist's notion of what is 'rational'. Consequently, they see RET as a 'rationalist' theory, which assumes that 'absolutistic musts' (Ellis, 1989b), in fact 'all dogmatic beliefs' (Rorer, 1989b), are irrational and necessarily cause emotional disturbance. In contrast, a 'constructivist' theory asserts that individuals are co-constructors of their own private realities (Mahoney, 1991). Accordingly, a given spouse behaviour might be construed as totally unacceptable by partner X, yet within acceptable limits by partner Y. Thus, X is disturbed, Y is not.

Many clinicians claim that, while the marital expectations of happy couples tend to have much in common, they can also vary a great deal too. Hartin (1993, p.2) sees every marriage as unique. He comments that

*'Events which might shatter one marriage prove to be the cement which binds another together. Marriages which were expected to last only a few years go on and on, while others which seemed to be the epitome of stability fall apart.'*

In other words, partners vary considerably in their expectations of each other, their circumstances, and their personalities. Arguing similarly

from clinical experience, Sager (1976, p.109) rejects the idea of 'one paradigm' for marital relationships, claiming that 'any two persons must find the way that works best for them at that point'. It is this variation which calls for a 'constructivist', rather than a 'rationalist' framework (Mahoney, 1980, 1991; Mahoney et al. 1989; Wessler, 1992), thereby accomodating subjective constructions of experience.

It is proposed that CDT, as applied in the present study, comes closer to 'constructivism' than RET. While RET postulates that certain extreme beliefs necessarily lead to misery (the 'rationalist' position), CDT predicts that it is the discrepancy ('dissonance') between subjective belief (not necessarily extreme) and perceived reality (not absolute) which leads to misery. Since this notion of dissonance draws upon subjective beliefs and realities, not absolute extremes thereof, it is in keeping with a 'constructivist' position, which can take account of the ideosyncratic expectations and perceived realities of marriage partners (Dryden, 1985; Hartin, 1977).

From the comparison above, it is proposed that, for the study of irrational belief, CDT is fundamentally similar to RET, yet more widely applicable and more sharply and comprehensively defined theoretically, rendering RET unnecessary as a separate theory.

### 2.5.2 CDT Revised

A later version of CDT 'quite similar to the original' (West & Wickland, 1980), stipulates two necessary conditions for the arousal of dissonance:



1. that some 'prior decision' (e.g. to marry, to return to study) forms a cognitive focus which is highly resistant to change and
2. that the subject feels 'responsible' for that decision.

'Responsibility' is defined to mean that the decision is a 'free choice' with 'foreseen' consequences and / or, that 'central aspects of the self' (e.g. abilities, traits) are invested. West & Wickland (1980, p.79) assert that some failures to find dissonance reducing effects in the past can be attributed to the absence of these 'necessary' conditions.

Cooper & Fazio (1984) have argued that it is the self-attribution of responsibility for an aversive consequence which generates the motivational basis of dissonance, whether behaviour and beliefs are discrepant or not; Eagly (1992) agrees. From a study aimed at testing this claim, Scher & Cooper (1989) conclude that discrepancy is neither necessary nor sufficient for dissonance to be aroused in some situations. However, they also concede that their study could be construed otherwise, namely, that it may not preclude discrepancy as a necessity for the arousal of cognitive dissonance. Berkowitz & Devine (1989b) suggest that, without the basic element of discrepancy, the Cooper & Fazio (1984) reformulation of CDT 'should be called something else'.

Aronson (1968, 1989, 1992) proposes that CDT makes its clearest predictions when expectancies about the self are involved, that is, when one's 'self-concept' is at stake. Following Aronson, it is proposed that when one enters marriage with unrealistically high self-expectations, only to find that personal behaviour falls short of expected standards, the discomfort of dissonance is likely to elicit attitudinal or behavioural change toward consistency with self-concept, that is, toward consonance. Consonance is

also likely to be sought when one feels undervalued or mistreated by one's partner relative to initial expectations. A common revelation occurring automatically amongst newlyweds, as well as by distressed spouses in therapy, is that initial expectations are idealistic and too high to be maintained, that lower more realistic standards are appropriate (Bagarozzi & Anderson, 1989; Dryden, 1985; Ellis & Harper, 1961a).

Berkovitz & Devine (1989b) question whether the conditions purported to be 'necessary' for dissonance reactions are indeed necessary, suggesting instead that they may simply 'facilitate or intensify the dissonance reaction'. They cite early studies which yielded dissonance reactions in the absence of the 'necessary' conditions advanced by Cooper & Fazio (1984) and West & Wickland (1980).

The present study need not be confounded by the above controversy, since marriage can be considered to satisfy these 'necessary' conditions anyway. Spouses have made an important 'prior decision', for which they feel 'responsible' with aspects of the 'self' (e.g. abilities, judgement, self-esteem) at stake. Therefore, a spouse's initial, extreme expectations of marriage, when discrepant with perceived marital realities, are likely to produce psychological discomfort manifest as marital dissatisfaction.

### 2.5.3 CDT minitheories

While CDT is not without its controversies and critics (e.g. Brown, 1965), many still regard it as a long and well established theoretical framework (Aronson, 1989, 1992; Berkowitz & Devine, 1989a, 1989b; Elliot & Devine,

1994; Smith, 1982; West & Wickland, 1980). It is argued that CDT can subsume RET, a claim Aronson (1992) makes for 'a plethora of interesting minitheories', which have recently emerged in social psychology. To illustrate, he lists 8 self-concept theories (e.g. self-affirmation theory, Steele, 1988; self-discrepancy theory, Higgins, 1987), claiming that

*'with a little work, every one of them can be contained under the general rubric of dissonance theory...'*

Other 'minitheories' could be added to Aronson's list. Chess' & Thomas' (1984) 'goodness of fit' theory seeks to explain the origin and evolution of behaviour disorders. Their model is strikingly similar to CDT. It even coins the terms 'dissonance' and 'consonance' which, defined approximately as in CDT. According to this theory, and much like CDT, 'dissonance' means 'poorness of fit' between a child's capacities, motivations, behaviour and its environmental demands and expectations, creating excessive stress and subsequent behaviour problems.

Another apparent CDT 'minitheory', the 'cognitive matching hypothesis' by Bagarozzi & Anderson (1989), asserts that people enter marriage with pre-conceived 'conjugal myths' about an ideal spouse and marriage. Central to their theory is the argument (p.94) that

*'... congruence between one's ideal spouse and one's perceived spouse plays an important role in determining one's satisfaction ...'*

According to this theory, when perceived marital reality is 'dissonant' with the ideal, particularly the more 'important' aspects, dissatisfaction results. The meanings and implications of the terms 'dissonance' and 'importance' in the 'cognitive matching hypothesis' are just as in CDT.

Aronson (1992) demonstrates that certain supposedly 'new' findings were predicted over three decades ago by Festinger using CDT. He expresses disappointment that recent theories related to CDT, such as 'biased assimilation' by Lord, Ross & Lepper (1979), have become 'insulated' from CDT. While Lord (1989) and Cooper & Fazio (1989) claim that CDT does not account for the findings of Lord et al., Berkowitz & Devine (1989b) align with Aronson (1989) and cite other 'eminent dissonance researchers', including Festinger, who do see the findings as relevant to CDT.

Berkowitz & Devine (1989a) assert that CDT currently receives less attention within the cognitive orientation of social psychology because:

1. motivational theories are currently out of favour,
2. 'big picture' ('synthetic') approaches are less popular than the narrow 'condition-seeking' ('analytic') strategies,
3. researchers' personal motivations, such as the 'desire to be innovative', steer their attention away from existing theories.

Aronson (1989) agrees closely with Berkowitz & Devine, yet he concedes the importance of both the 'analytic' and 'synthetic' approaches in research. Nonetheless, he notes an absence of the latter in recent times, lamenting that 'hardly anyone' is trying to find the common ground among the modern 'minitheories' (Aronson, 1992). Following the 'synthetic' approach, it is argued that CDT can embrace RET as well as the recent rash of self-concept theories and other 'minitheories' (Bagarozzi & Anderson, 1989; Chess & Thomas, 1984; ) cited above.

It is accepted by many (e.g. Berkowitz, 1980; West & Wickland, 1980) that CDT has correctly predicted many unexpected dissonance reducing effects in

a wide variety of natural and laboratory settings. It has been described as the most influential of social psychological theories and the stimulus of most research (West & Wickland, 1980). Goldstein (1980) regards CDT as the most widely applicable theory and the most interesting one, because of its prediction of unexpected results.

Although numerous revisions (e.g. Aronson, 1968; Brehm & Cohen, 1962) and alternative explanations (e.g. Bem, 1967; Cooper & Fazzio, 1984) have been put forward, Festinger's (1957) original formulation is still regarded as sustainable (Aronson, 1992; Berkowitz, 1980; Berkowitz & Devine, 1989a; Elliot & Devine, 1994; West & Wickland, 1980).

While the huge amount of research on CDT unequivocally demonstrates that the dissonance state involves heightened arousal, Elliott & Devine (1994) make the point that only a few studies have sought to demonstrate the 'psychological discomfort' associated with dissonance and, similarly, that only a few have attempted to demonstrate the elimination of dissonance by a reduction strategy. Both concepts were originally put forward by Festinger (1957). Elliot & Devine (1994) lay claim to the first systematic, direct attempt to demonstrate both principles. Their findings further support Festinger's original CDT. In the present study, marital dissatisfaction, or unhappiness, was the adopted index of 'psychological discomfort'.

Ellis' RET has made a huge contribution to the study of irrational belief: to clinical application, to therapeutic methods and materials, to the sheer weight of literature generated, to the stimulation of research and, indeed, to the cognitive / behavioural movement generally, which has gained increasing impetus over the last three decades.

Notwithstanding its impact upon cognitive-behavioural psychology, RET is criticised for its vague theoretical constructs, its loose and variable definitions, its questionable measures, its equivocal and, at best, modest empirical support, and its rationalist form. As argued above, it is proposed that CDT is more sharply defined, more complete and more widely applicable, such that it can subsume RET. It is further asserted that irrationality is better defined as dissonance than as the traditional extreme belief, because it avoids the definitional problems, the systematic errors in traditional irrational belief tests and the inappropriate rationalist constraints associated with RET.

## **2.6 'BELIEFS ABOUT MARRIAGE' QUESTIONNAIRE**

The second half of this study involves the development of a questionnaire, 'Beliefs about Marriage' (BAM). BAM asks respondents to rate both their belief (B) and perceived reality (R) in relation to some marital idea, event or behaviour concerning themselves (e.g. 'my honesty'), their partner (e.g. 'my partner's financial competence') or their marriage (e.g. 'mostly romance or day-to-day practicalities?').

Content for BAM (appendix T) was based largely on the extreme unrealistic expectations of marriage, also referred to as 'marital myths' (Ellis & Harper, 1961a; Dryden, 1985; Lazarus, 1985), 'conjugal myths' (Bagarozzi & Anderson, 1989), 'fallacies of marriage' (Hartin, 1993) and 'unrealistic relationship beliefs' (Epstein & Eidelson, 1981), which are often held by individuals entering marriage.

One hundred individual beliefs (B1 to B100), together with corresponding realities (R1 to R100), were grouped into 10 a priori sub-scales, each with 10 items. Although the sub-scales are described as a priori, they also have some empirical support, since all but two of them reflect themes from the sub-scales of Jones' (1968) Irrational Beliefs Test (IBT), which are based upon Ellis' (1962) 10 core irrational beliefs. These subscales are: 1. 'Approval', 2. 'Performance', 3. 'Morality', 4. 'Catastrophisation', 7. 'Avoidance', 8. 'Dependence', 9. 'External Locus', and 10. 'Ideality'.

The other two subscales are 5. 'Uniqueness' and 6. 'Altruism', borrowing mainly from the clinically generated marital myths, which are documented by Bernard (1986), Dryden (1985), Ellis & Harper (1961a), Epstein & Eidelson (1981), Hartin (1977, 1993), Katz & Liu (1988) and Lazarus (1985). These 'myths' also provide material for the other subscales.

1. '**Approval**' items examine the need for overt affirmation and approval for one's opinions, sexual performance, domestic and parenting contributions. From clinical experience, Gray (1990, p.167) notes that women, in particular, need ongoing 'signs, symbols and verbal reassurance that they are loved'.
2. '**Performance**' items deal with the need for things to be done well: home duties, social behaviour, sexual activity and financial management.
3. '**Morality**' items assess the need for a strict code of moral conduct in relation to general honesty, fidelity, sexual fantasy and sexual activity. Lazarus (1985, pp. 24,49) and Bernard (1986, p.101)

regard complete or compulsive honesty and openness as a mythical ideal, which is often actually damaging to a relationship. Katz & Liu (1988, p.3) see as unrealistic the expectation of 'never being sexually attracted to anyone else'.

4. '**Catastrophisation**' assesses the tendency to generalise isolated, minor and transient difficulties, such as a disagreement a sexual rejection or a minor mistake, as major, global disasters. This faulty information processing is similar to the systematic errors of 'overgeneralisation' and 'magnification' claimed by Beck et al. (1979) to create and maintain depression.

5. '**Uniqueness**' items tap the notion that one's relationship is exclusive in terms of mutual understanding, confidentiality and being perfectly in tune. Partners are made for each other; no other partner could do. Ellis asserts that notions of such exclusiveness are 'irrational' (Bernard, 1986, p.90). Hartin (1977, pp. 24, 25) too, claims that people characteristically believe that there is 'one right partner' for them, that their partners possess 'qualities found in no other ...'. Hartin (1977, p.46) cites comments from divorcees, which typify the expectation of a unique marriage, such as,

*"I thought that conflicts and things going wrong were only in bad marriages", and "I expected ... our marriage would be different".*

The 'mind-reading fallacy', that spouses automatically know what each other thinks and feels, without communication, also tends to co-exist with the uniqueness expectation (Epstein & Eidelson, 1981; Epstein et



al., 1987; Hartin, 1977; Lazarus, 1985). Sager (1976) describes the unrealistic 'romantic partner' as one who expects to be the sole and continual object of love, attention and romantic gesture. Gray (1990, p.172) observes that women particularly

*'love to be singled out and treated specially by the men in their lives'.*

In describing the illusory features of 'false love' (unrealistic marital beliefs), Katz & Liu (1988) include the expectations of finding the one right partner, never needing anyone else and rarely wanting to be apart.

6. **'Altruism'** assesses the requirement that one's partner and one's marriage should come before all else: before oneself, one's friends, one's relatives, one's personal interests. In short, one should live for one's partner. Similarly, spouses expect altruistic priority from their partners. Spouses' expectations that their partners should always accommodate their wishes, change for them, and give them priority is seen by Lazarus (1985, pp.125-129) as a marital myth. He commonly finds that spouses expect to be considered first, to be at the centre of their partners' universes.
7. **'Avoidance'** measures one's preference to avoid conflict, disagreement, justifiable objections and protests. It reflects non-assertiveness and the 'fallacy' (Epstein & Eidelson, 1981; Hartin, 1977) that disagreement and conflict are bad and should be avoided.
8. **'Dependence'** assesses the need to depend on one's partner for

personal happiness, security, emotional support, one's sense of identity, one's reason for being. Hartin (1977, p.20) asserts that some see marriage as a 'panacea' for all emotional ills, that it will 'bring an end to personal loneliness and unhappiness'. More recently he depicts the 'helpless' spouse as one who requires the other to make the decisions, assume all responsibility, supply limitless love and affection and provide comfort, care and security (Hartin, 1993, p.49).

Emotionally dependent partners are labeled by Sager (1976) as 'childlike'. He warns that they are destined to be hurt when their extreme need for support is not met. The first year of marriage is portrayed by Matthews (1988, p.44) as reminiscent of the 'parent-child relationship'. She reports that the 'take care of me' theme is common. Lazarus (1985, p.54) warns of the common myth that 'good spouses should make their partners happy'. He insists that people who take responsibility for their own happiness are more likely to be happy.

9. '**External Locus**' reflects the self-perception that one is powerless to control financial, social, work and parental pressures within marriage.
  
10. '**Ideality**' assesses one's assumption that marriage will always be fun and romantic, that love will conquer all, that one's partner must always be just right physically, emotionally and behaviourally. Katz & Liu (1988, p.3) report that people entering marriage often expect 'complete fulfilment, constant romance, great sex and constant

excitement' with their partners. Lazarus (1985, p.13) describes how people commonly expect to find marriage

*'... a continuation of the ecstasy of courtship ... and, when ... carefree rapture is replaced by the uninteresting routine of daily life',*

disappointment and discord follow. He also warns of the myths (pp.30, 139) that husbands and wives should do everything together and that sex should only occur when things are just right between partners. Hartin (1977, p.47) tells of a divorcee who did not expect to think about such practical things as 'fridges and mortgages'.

## 2.7 INDEPENDENT VARIABLES

A major feature of BAM is its ability to generate a variety of cognitive variables commonly employed in the research of marital satisfaction. The primary variable, reflecting how marriage should be, is the marital belief or expectation (B) of a spouse. This is the traditional RET variable, such as that used in the Relationship Beliefs Inventory (Epstein & Eidelson, 1981). Tied to B is the perceived reality (R), reflecting how marriage actually is, as perceived by a spouse. Central to this study is a new dissonance variable, defined simply as the difference between each corresponding B and R, that is, as B-R.

Item subsets of BAM also permit the generation of attributional dissonance, reflecting perceived partner shortcomings, and self attributional bias, reflecting over-estimation of one's own marital inputs, or contributions, relative to one's partner's perception.

### 2.7.1 Beliefs & realities

Items of the BAM are framed as below (see appendix T); for example, item 10 (with sample ratings) is expressed as:

<i>10. The best fun in my life:</i>	<i>First</i>		<i>Now</i>
	<hr/>		
<i>B...It should be with my partner.....</i>	<i>( 6 )</i>		<i>..( 5 )</i>
<i>R...It is with my partner.....</i>	<i>( 3 )</i>		<i>..( 1 )</i>

Frequency ratings are sought on a scale from '0' (never), through '3' (half of the time), to '6' (always). The ratings for current beliefs (B) and realities (R) are required in the 'Now' column. Retrospective ratings for beliefs and realities at the beginning of marriage are placed in the 'First' column. Although retrospective memories and interpretations of past relationship events are known to be susceptible to distortion (Duck, 1981; Warwick & Lininger, 1975), the relationships of initial beliefs, realities, and their discrepancies to current happiness were prominent interests in the present study. Despite their unreliability, it was resolved to settle for retrospective ratings as the only practical method, short of a longitudinal study, to meet the research interests described above. Clearly, cautious interpretation of retrospective ratings would be required.

In the example above, the respondent 'first' believed that her best fun should always ('6') be with her partner; in reality, it happened only half of the time ('3'). 'Now', she believes that her best fun should be with her partner 'most of the time' ('5'); in reality, it rarely ('1') happens.

Summing beliefs ( $\Sigma B$ ) provides a measure of extreme belief similar to that generated by the RBI (Epstein & Eidelson, 1981), but which is more comprehensive, due to extra scales (10 versus 3), extra items (100 versus 36), and greater diversity of intra-scale content. While cursory inspection of BAM might give the impression of item repetition, closer examination reveals that items which appear similar actually ask quite different questions. For instance, although items 3 and 13 both focus upon honesty within marriage, item 3 addresses the respondent's honesty, whereas item 13 seeks the respondent's perception of his / her partner's honesty.

Following the bulk of research findings for the RBI, a negative association was predicted between belief and marital happiness. In accordance with the consistent findings for self-report questionnaires of marital adjustment, such as the Marital Adjustment Test (Locke & Wallace, 1959) and the Dyadic Adjustment Scale (Spanier, 1976), it was expected that reality (the sum of perceived marital realities) would be positively associated with happiness.

### 2.7.2 Dissonance

The dissonance ( $D$ ) between each belief ( $B$ ) and reality ( $R$ ) was defined as  $(B-R)$ . Initial dissonance for item 10 above is  $6 - 3 = 3$ , while current dissonance is  $5 - 1 = 4$ . Positive dissonance values reflect expectations which are greater than perceived realities; that is, marriage provides less than expected, causing psychological discomfort, according to CDT. Negative dissonance values indicate that marriage is providing more than expected. Summing discrepancies provides an index of dissonance, the newly adopted measure of irrationality for the present study of marriage.

Based upon the foregoing argument, that dissonance is a more valid and appropriate measure of 'irrationality' than extreme belief, it was predicted that dissonance would correlate negatively with happiness, and more strongly so, than extreme belief.

Extreme, unmet, marital expectations tend to be 'revised' (Hartin, 1977, p.22) by spouses to bring them 'in line with their experiences' (Dryden, 1985, p.201) or, in CDT terms, to reduce dissonance, in accordance with Festinger's (1957) post-decision dissonance effect. Therefore, it was predicted that initial marital dissonance (Bi-Ri) would lead to a drop in expectations (Bi-Bc) from the initial level (Bi) to the current level (Bc), to reducing dissonance. That is, initial dissonance (Bi-Ri) was expected to correlate positively and significantly with the drop in belief (Bi-Bc) over time. Moreover, if as claimed by Dryden (1985), Ellis & Harper (1961a), Hartin (1977, 1993), Lazarus (1985) and Sager (1976), that most partners enter marriage with extreme, unrealistic expectations, a drop in belief (Bi-Bc) could be expected for any sample of married couples after a few years of marriage.

### **2.7.3 Attributional dissonance**

Apart from items which focus upon oneself and one's marriage, the BAM also includes 44 items, each of which asks spouses to rate their belief (B) and perceived reality (R) specifically in regard to their expectations of their partners (see appendix U). For example, item 36 of BAM concerns the spouse's demand to receive priority over his / her partner's personal interests, as illustrated below with sample frequency ratings.

*B..My partner should put me before personal interests..( 5 ) 'often'*  
*R..My partner puts me first.....( 1 ) 'rarely'*

The dissonance  $B-R = 5-1 = 4$ , for item 36 above. It has a distinctly attributional flavour, that is, 'My partner puts his own interests before me' too often. It is also closely akin to the notion of 'responsibility attribution' employed in the study of close relationships (Fincham & Bradbury, 1987b), since it includes such key elements as an 'expectation' (B), the 'mismatch between actual and ideal behaviour' (B-R), and the implied attribution of 'blame' to the partner.

BAM item 36 is similar in theme to one of the twelve 'spouse behaviours' in the Marital Attribution Style Questionnaire (MASQ) used by Fincham et al. (1987), namely, 'Your spouse begins to spend more time doing things without you'. On a 7-point rating scale, respondents are asked to rate the extent to which their partner's behaviour is 'intended to be positive versus negative', 'motivated by selfishness' and 'worthy of blame versus praise'. The three ratings are summed to provide a score for 'responsibility attribution' for that behaviour. However, one difficulty associated with such a multi-faceted question is the danger of suggestion. Jacobson et al. (1985) warn that it is impossible to know whether causal attributions would have occurred had spouses not been asked to report them.

In the measure of 'responsibility attribution' used by Fincham et al., the elements of 'intent', 'selfishness' and 'blame' feature explicitly, while the elements of 'expectation' and 'mismatch' are presupposed and implicit, but no less important (Fincham & Bradbury, 1987b). With contrasting emphasis, the measure of 'attributional dissonance' in the present study

assesses 'expectation', or belief (B), and 'mismatch' (B-R) explicitly, while 'blame' (as well as 'selfishness' for, say, the altruism items) is implicit. It is argued that the 44 partner-focused BAM items constitute a sub-scale measuring 'attributional dissonance' which, despite different emphases, is directly related conceptually to the notion of 'responsibility attribution' employed by Fincham et al. At the same time, 'attributional dissonance' avoids the risk of explicitly suggesting to respondents their partners' 'intent', 'selfishness' and 'blame' where it may not exist, as warned by Jacobson et al. (1985).

Considering the 'robust' association found consistently between 'responsibility attribution' and marital discord (Fincham & Bradbury, 1987b; Fincham et al. 1987; Jacobson et al., 1985), it was predicted that attributional dissonance would correlate negatively with marital happiness.

#### **2.7.4 Self attributional bias**

Another concept which has attracted some recent research attention is the notion of 'attributional bias', which refers to the tendency of a married individual to attribute more of the responsibility for marital experiences either to self or partner. A small amount of research has focused upon partners' biases in responsibility judgements for relationship events.

Ross & Sicoly (1979) investigated 'egocentric responsibility bias' amongst 37 married couples from student residences. They found that individuals tended to claim greater contributions to marriage activities (both positive and negative: e.g. preparing meals, financial decisions, causing arguments)



than their partners attributed to them. However, the study included no measurement of marital satisfaction, therefore precluding any assessment of interaction effects between satisfaction and attributional bias. Thompson & Kelley (1981) extended Ross' & Sicol's study by including measures of marital satisfaction. They discovered that satisfied spouses were more willing to attribute 'good things' to their partners.

Schriber, Larwood & Peterson (1985) also demonstrated attributional bias in responsibility for marital conflict, showing that both married ( $N_1=97$ ) and divorced ( $N_2=58$ ) subjects accepted more than average responsibility for marital problems, but the difference in responsibility bias between the two groups was not significant. It is noteworthy, however, that no assessment of marital satisfaction was included in this study, and the married / divorced criterion for grouping might not have differentiated satisfied / dissatisfied individuals validly.

By including a measure of marital satisfaction, Fincham & Bradbury (1987a) were able to extend Thompson's & Kelley's (1981) finding that attribution bias depends upon relationship satisfaction. Fincham & Bradbury found that high marital satisfaction is associated with higher self-rated contribution to negative events and lower self-ratings for positive events, compared with the contributions attributed by partners. Thus, attributional bias depends upon both marital satisfaction and the kinds of events attributed.

The BAM is equipped to assess self attributional bias. Fifty items exist as twenty five pairs (appendix V), each pair consisting of one item seeking self-assessment (e.g. item 42. *R...I satisfy my partner sexually*) and a corresponding item requiring the partner's assessment of the same event

(i.e. item 52. R...*My partner satisfies me sexually*). These item pairs enable a comparison of an individual's self-assessment of some behaviour with the partner's assessment of that behaviour, enabling an investigation of the relationship between self attributional bias and marital happiness.

Following the more comprehensive studies of self attributional bias, cited above (Thompson & Kelley, 1981; Fincham & Bradbury, 1987a), it was predicted that the present study would yield a positive association between self attributional bias (for 'good things') and marital dissatisfaction.

## **2.8 DEPENDENT VARIABLES**

Fitzpatrick (1988) briefly reviews a variety of measures commonly used to assess marital satisfaction: single self-ratings of marital satisfaction or happiness, ratings by family members, ratings by marital experts based on interviews and self-report inventories for marital adjustment, such as the Marital Adjustment Test (Locke & Wallace, 1959) and the Dyadic Adjustment Scale (Spanier, 1976).

Fitzpatrick (1988) reports a lack of convergent validity among different methods, which have been known to correlate poorly. She remarks that even the frequently used marital adjustment questionnaires have associated problems. These include prescriptiveness and lack of consensus about the characteristics of marital quality, the obscuring of specific marital problems by a summed score, and the difficulty of rating a couple's marital happiness when the separate ratings of partners differ appreciably, as they quite often do.

Because of the extreme length of the BAM questionnaire, requiring 400 ratings and more than an hour to complete, the already heavy demand on subjects could not be increased further by the burden of completing yet another questionnaire for marital adjustment. Thus, the simplest measure was adopted, a single subjective self-rating of marital happiness, despite the well known finding that very few people are willing to report their unhappiness, even when reporting specific marital problems (Fitzpatrick, 1988).

It was resolved to settle for a single 7-point rating of marital happiness at the end of the questionnaire. BAM item 100 also seeks a rating for 'frequency of satisfaction with partner', which served as a reserve measure of satisfaction, should a respondent neglect to rate happiness on the last page of BAM. It also provided a validity check. Naturally, the two ratings were expected to correlate highly.

It would have been preferable to secure the happiness rating of respondents prior to their completion of BAM, to avoid the possibility of their responses to BAM items prescribing or influencing their general happiness ratings (Dawes, 1979). However, there was no guarantee that subjects would comply with a request to do so, when completing BAM in private. Therefore, the potential for that bias remained, as also it does, however, for marital quality surveys, such as the Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS presents items similar in content to the BAM realities (R), which ask respondents to rate their perceived marital lot in such areas as financial management, sexual satisfaction, beliefs, domestic duties and disagreements, before requiring a rating of their general marital happiness.

In accordance with RET and the clinical and research evidence reviewed, it was predicted that extreme marital beliefs and expectations would be associated with marital unhappiness. Applying CDT, argued above to provide a better theoretical framework than RET for the study of irrational belief, it was predicted that dissonance, defined as the discrepancy (B-R) between marital belief (B) and perceived reality (R), would be more strongly associated with unhappiness than extreme belief (B) alone. As a post-decision dissonance-reducing effect, it was further predicted that initial dissonance would be associated with a subsequent drop in marital belief. Attributional dissonance (perceived partner shortcomings) and self attributional bias (over-estimates of one's own marital input) were also predicted to be associated with the unhappiness of both spouses.



### 3. METHOD

#### 3.1 STUDY

Adult matriculation students at Kensington Park College (KPC) of the Department of Technical And Further Education (TAFE), South Australia, were assessed for their irrational beliefs about study, as well as subsequent emotional and behavioural effects, using a variety of new and established measures. Prior to the main investigation, a pilot study was conducted for the purpose of refining the new measures to be used.

##### 3.1.1 Subjects

Subjects were selected from both the 1988 and 1989 populations of adult matriculation students. The 1988 group was used for the pilot study, the 1989 group for the investigation proper. In July, 1988, a letter of introduction (appendix A) was presented to a selected group of 145 students. Trial forms of the two experimental questionnaires: 'Beliefs About Study' (BAS; appendix B) and 'Feelings About Study' (FAS; appendix C), were administered the students. Full-time and part-time students were included. For the purpose of refining the content and format of the experimental questionnaires, it was felt that distinction between full-time and part-time students was unnecessary. The pilot sample (N=145) was also much larger than necessary, merely because seven lecturers offered to administer and collect the questionnaires in class, an efficient method of

data collection, which placed little burden on the author.

The experimental group of subjects was drawn from the 1989 population of 263 full-time students. This group excluded 21 fee-paying overseas students, whose responses on questionnaires may not have been valid, due to their cultural differences and their limited grasp of the English language. Another 7 students withdrew within the first two weeks to accept a late offer of tertiary entry. Clearly these students should not have been considered 'dropouts' since, on the contrary, they had actually enjoyed accelerated promotion. They were therefore excluded from the study. Aside from the 28 overseas students and tertiary entrants, the rest of the population constituted the experimental sample of 235 students, including one student who transferred during the year to another college to continue the same course. Her progress was monitored and recorded as for the other subjects.

The ages of the experimental group ranged from 16 to 45 years. The distribution of age exhibited a characteristic positive skew, indicated by the median age of 19 and a third quartile age of 22. The male : female ratio was 54% : 46%. As for previous populations, the majority of courses taken were arts biased; 73% of students took arts dominant courses (>50% arts) and 27% took science dominant courses (>50% science). The group consisted mainly of repeating students; 65% had already attempted matriculation before as high school students, similar to previous populations.

### 3.1.2 Variables and instruments

Data was gathered on a variety of variables in four stages.

#### Stage 1.

Stage 1 data was collected in the period, November, 1988 to January, 1989. Certain biographical indices were available from enrolment forms, completed at enrolment by each of the 235 students in the eligible majority of the population. The variables were defined as follows.

#### Age

Age was measured in years on January 1st, 1989.

#### Sex

Sex was treated as a dummy variable (Nie et al., 1979), coded '1' for male and '0' for female.

#### Educational level

Educational level was defined as the highest educational level previously experienced (not necessarily completed) prior to 1989. Levels were coded '1' to '5' for South Australian high school years '8' to '12' respectively. Tertiary study at any level was coded as '6'.

#### Arts bias

Arts bias was defined as  $(\text{arts subjects}) / (\text{total subjects}) \times 100 \%$ . For each student, the numerator was determined after subject changes

and before any reduction of subject load. Scores ranged from '0%' for an all-science course to '100%' for an all-arts course, using the arts-science grouping set by the University of Adelaide for the matriculation requirements.

Measures of 'reading comprehension' and 'written expression' were also available for the whole experimental group, from pre-enrolment group testing.

### **Comprehension**

A raw score for reading comprehension, ranging from '0' to '20', was obtained from a selected short form of the Co-operative Reading Comprehension Test, Form M (Australian Council for Educational Research, 1973).

### **Written expression**

Student's free essays on one of four given topics were rated by arts teaching staff on a scale from '0' to '10' for accuracy of grammar, spelling, sentence structure and coherence. A rating of '5' or more was considered sufficient and '4' or less insufficient for the purpose of essay-writing subjects at matriculation level. The reliability of these ratings is unknown.

### **Ability**

A crude measure of ability was defined as the sum of 'reading comprehension'(/20) and 'written expression'(/10), weighted 2:1 respectively, to yield a single score ranging from '0' to '30'.



Independent variables derived from the specific self-report questionnaire, 'Beliefs About Study' (BAS) and the general 'Irrational Beliefs Test' (IBT) (Jones, 1968) were collected from students immediately after enrolment. The 48-item BAS full-scale (appendix E) includes 8 theoretical sub-scales of equal length (6 items). Items are rated on a 7-point frequency scale from '1'(never) to '7'(always). To offset the acquiescence response bias, half of the items are framed in the reverse direction. The score on each sub-scale ranges from '6' to '42'. Sub-scales and meanings of high scores are as follows:

**Performance:**

The need for high levels of academic performance;

**Approval:**

The need for approval of one's academic performance;

**Competitiveness:**

Comparison and preoccupation with others' performance;

**Dependence:**

The reliance on others for support, motivation and help;

**Ideality:**

The need for ideal academic treatment and circumstances;

**Avoidance:**

The belief that study should not involve effort or difficulty;

**Certainty:**

The need for certainty in regard to study outcomes;

**External locus:**

The belief that one's locus of control is external.

One of the most frequently used self-report tests of irrational belief, the 'Irrational Beliefs Test' (IBT) by Jones (1968), provided the measure of general irrational belief, to be used as a comparison for the specific BAS. For the present study, the IBT was renamed 'Beliefs in General' (BIG; see appendix F), to avoid any threat of the term 'irrational' to respondents. The 100-item IBT has 10 sub-scales, each with 10 items which reflect Ellis' (1962) original irrational beliefs. Respondents are asked to rate the strength of their 'agreement' or 'disagreement' with each belief on a 5-point scale, scores ranging from '1' to '5'. Raw scores can be used as such, or converted to normed sten scores for each of the 10 sub-scales. The 10 sub-scales and meanings of high scores are as follows:

**Approval:**

The desire for approval from all others;

**Competence:**

The need to be competent and successful at everything;

**Morality:**

The belief that those who do wrong should be blamed and punished;

**Catastrophisation:**

Over-reaction to frustrations;

**Mood control:**

The belief that unpleasant emotion is externally caused;

**Anticipatory anxiety:**

Worry over anticipated threats and difficulties;

**Avoidance:**

The belief that facing problems and difficulties should be avoided;

**Dependence:**

Extreme reliance on others for strength and support;

**Determinism:**

The belief that one is determined by one's past experiences;

**Ideality:**

The belief that life should be ideal, with perfect solutions.

**Stage 2.**

Self-report questionnaires for procrastination, anxiety, depression and affect were completed by 116 of the 180 subjects who completed BAS, the IBT and other stage 1 data. These data were collected during the period, April to June, 1989.

### **Self-report Procrastination (Ps)**

A 20-item questionnaire, 'How I Procrastinate' (HIP; appendix H), assesses frequency of delay in such tasks as reviewing lesson notes, making a start on study, seeking help and concentrating in class. Half of the items in the HIP are reversed in direction to offset the acquiescence response bias. A self-report procrastination score (Ps) is provided by HIP, ranging from '0' to '120'. A related 20-item, self-report questionnaire, 'Why I Procrastinate' (WIP; appendix I) is essentially the second part of the 'PASS' (Solomon & Rothblum, 1984). It assesses the student's reasons for delay in writing an assignment. Since the WIP was employed solely to examine clusters of reasons for procrastination, total scores were not appropriate to consider.

### **Anxiety**

Self-reported anxiety was assessed on the trait form Y of the State-Trait Anxiety Inventory (STAIT; Spielberger et al., 1970). The STAI, entitled the Self-Evaluation Questionnaire (appendix K), comprises two corresponding 20-item scales for state (S) and trait (T) anxiety. The trait form assesses how people feel 'generally', high scores reflecting anxiety proneness and the tendency to perceive stressful situations as threatening (Spielberger et al., 1983). Raw scores were used, ranging from '20' to '80'.

### **Depression**

The short form of the Beck Depression Inventory (BDI; Beck & Beck, 1972) was used as the self-report measure of depression (appendix L). It consists of 13 items (predominantly cognitive), which reflect the respondent's feelings of sadness, pessimism, guilt, lethargy,

indecisiveness, dissatisfaction and disappointment with self. Raw scores were used, ranging from '0' to '39', high scores reflecting depression.

### Affect

The questionnaire, 'Feelings About Study' (FAS; appendix J), was devised to measure the negative affect experienced by students when their extreme beliefs are unfulfilled. FAS presents students with 48 items corresponding to those of BAS. Each FAS item is presented as a hypothetically unmet belief about study, requiring respondents to rate their associated negative affect on a 7-point scale ranging from '0' (not at all) to '6' (extremely). For each unmet belief (e.g. item 25. '*When I don't score 'A's, I feel...*'), students are asked to rate how intensely they feel on 13 negative affects: *anxious, angry, depressed, upset, bored, guilty, irritated, disgusted, embarrassed, foolish, helpless, frustrated, scared*. For each unmet belief, a score for negative affect can be derived by summing ratings (Kassinove, 1986; Watson et al., 1988) for the 13 separate affects. The affect score ranges from '0' to '78', high scores indicating high levels of negative affect.

### Stage 3.

#### Observed Procrastination (Po)

A rating of observed procrastination (Po) by lecturers was based upon repeated measures of procrastination behaviours (impromptness or absence from classes, tests and tutorials; unmet assignment and

project deadlines), assessed for each of the student's 5 subjects, over a maximum of 7 months, in accordance with the principle of 'aggregation' (Azjen, 1988). According to instructions (appendix M), lecturers were asked to refer to their roll books and marks books, to derive a subjective, overall rating based on their recorded data for each of the 235 students.

#### **Stage 4.**

Data became available for the following objective criteria in January, 1990, when the Senior Secondary Assessment Board of South Australia (SSABSA) released students' final grades.

##### **Perseverance**

The perseverance of a full-time adult matriculant was defined as the final number of subjects completed (graded by SSABSA), expressed as a percentage of the number of subjects initially undertaken.

##### **Grade point average (GPA)**

Grade point average (GPA), was defined as the average of scaled marks from the subjects completed. To correct for inevitable variations in subject difficulty and assessment, SSABSA rescales raw scores to provide 'scaled marks' ranging from '0' to '20' for the determination of tertiary admission.

## Aggregate

The 'aggregate' of scaled marks was used as a measure of performance embracing both GPA and perseverance, as argued in chapter 1. A low aggregate reflects low GPA and / or withdrawal from one or more subject(s). Aggregates from 5 subjects ranged from '0' to '100' points.

### 3.1.3 Procedure

Initial trial forms of BAS and FAS, together with an introductory letter of explanation, were distributed to classes of matriculation students in July, 1988 by 7 volunteering lecturers. Having been briefed by the author on the experimental rationale and administration procedure, lecturers asked students to complete the questionnaires in class. They were asked to emphasise to students that participation was voluntary, that the study would have no effect on their course assessment and that results would be kept completely confidential by the author.

Complete data were received from 145 students. While this sample was much larger than necessary for the purposes of the pilot study, administration and collection of data by willing staff simplified the exercise. The large sample also provided a clearer indication of the most popular 'affect' descriptors used by students themselves on the trial form of FAS.

The internal consistency of the trial BAS full scale was low but adequate ( $\alpha=.71$ ). For 32 of the 40 items, item-total correlations were positive and ratings satisfactorily distributed for retention. However, all of the

'performance' items (1, 9, 17, 25 and 33) generated small negative item-total correlations (from  $-.01$  to  $-.10$ ) suggesting that the performance subscale stood apart from the rest of the BAS scale. It was the only subscale which failed to correlate significantly with the BAS full scale ( $r=.05$ ). The other 7 sub-scales correlated significantly with the full scale,  $r$  ranging from  $.43$  to  $.65$  ( $p<.001$ ). 'Performance' also correlated significantly with GPA, based on a mid-year assessment ( $r=.35$ ,  $p<.001$ ), contrary to RET predictions and in contrast with the full scale which correlated negatively with GPA ( $r=-.21$ ,  $p<.05$ ), in keeping with RET.

Considering all of these findings together, it appeared that students who had high self-expectations for performance were mainly the 'realistic performers', those who were actually able to meet their own expectations. Some of the 'unrealistic performers' had probably withdrawn from the course well before August, when the pilot study was conducted, because of the discomfort of the discrepancy between their expectations and performance. Other 'unrealistic performers' may have lowered their initial expectations well before August to fit their experience, a post-decision dissonance effect (Festinger, 1957; West & Wickland, 1980; Wickland & Brehm, 1976). Consequently, the separateness of the performance subscale may have been partly (perhaps largely) due to on-course experiences, which would not apply in the investigation proper, since BAS would be administered prior to the beginning of the academic year of 1989.

The separateness of the performance subscale of the trial BAS was not expected. No report of such an effect for general tests was found in the literature. Irrationality in regard to performance, success, competence and perfection features prominently in RET (Ellis, 1958, 1962, 1979a,



1989b). It is the focus of the first of Ellis' (1989a) three current irrational beliefs. The author's counselling experiences tend to confirm its prominence in students' disturbances.

When considering the regular finding that the performance dimension is consistent with general irrationality (for general tests), the clinical evidence of its importance, and the possibility that its separateness from other subscales in the trial BAS was, in part, an artifact of student experience, it was decided to retain the sub-scale in the final form of BAS.

Item 24 (*'the likelihood of future employment'*) generated a negative item-total correlation ( $r = -.15$ ; non-significant). The item was rejected for that reason and because of the finding that certain students (some married women and certain students who already had employment) did not require employment and did not complete the item. Item 35 (*'the expectation of always performing at one's personal best'*) generated a substantial, negative, item-total correlation ( $r = -.35$ ,  $p < .001$ ) and was therefore eliminated as well.

Apart from the 40 items in the trial BAS, another 8 generic items had been withheld for the final BAS, with the intention of using them to distinguish more accurately what students really meant by their ratings. For instance, a generic item for the 'external locus' subscale was: 'I am not the master of my academic destiny'. The author's discussion with students over many years suggests that such a statement could carry at least 3 different meanings:

1. the literal meaning: 'External forces control my performance'.

2. a conditional meaning: 'External forces exist, but maybe, if I try, it is possible for me to offset them'.
3. exaggerated rhetoric, without serious literal intent.

While it is only the literal meaning which is 'irrational' according to RET the other meanings would also score high on External Locus, but spuriously so. After lengthy deliberation, it was decided that attempting to distinguish between these idiosyncratic meanings was fraught with too many difficulties, as well as the risk of complicating the important comparison between the BAS and the IBT, should the two questionnaires differ too much. Therefore, the 8 generic items were simply added to the BAS scale as extra items instead.

Apart from the above considerations and modifications, minor changes of expression were made to some items and the variety of rating scales was replaced by a common, 7-point, frequency scale ('never' to 'always') for simplification. The final 48-item BAS scale retained the original 8 subscales, each with 6 items (appendix E).

In responding to the trial questionnaire, 'Feelings About Study' (FAS), students used certain affect terms sufficiently often to warrant their inclusion in the final FAS. As well as *anxious*, *angry* and *depressed* (affects prescribed by the trial FAS), 10 extra terms (those used by the students) were added, namely, *upset*, *bored*, *guilty*, *irritated*, *disgusted*, *embarrassed*, *foolish*, *helpless*, *frustrated* and *scared*. Item changes were dictated by those in BAS, since the items in the final form of FAS (see appendix J) were to correspond with the 48 items in BAS.

Enrolment of the 1989 student population, the experimental group, proceeded from November, 1988 till January, 1989. Applicants first attended an information and testing session in groups of 20 to 50, run by the author. At the close of these sessions, groups were informed about the present research and invited to participate. It was emphasised that participation was voluntary, that all data would be kept strictly confidential, that admission to the course did not depend on participation and that questionnaires would only be collected after enrolment. Every applicant was given a copy of the final form of BAS, as well as an Irrational Beliefs Test (IBT; Jones, 1968), to complete at home should they choose to do so.

Applicants were required to return to the college within the following week to complete enrolment requirements and participants lodged their completed questionnaires with the author after enrolment. Complete stage 1 data from the BAS and the IBT, the tests of irrational belief (specific and general respectively) were returned by 180 of the 235 students eligible for investigation. Remaining stage 1 data: age, sex, arts bias, educational level and ability, were available from the application forms of all students.

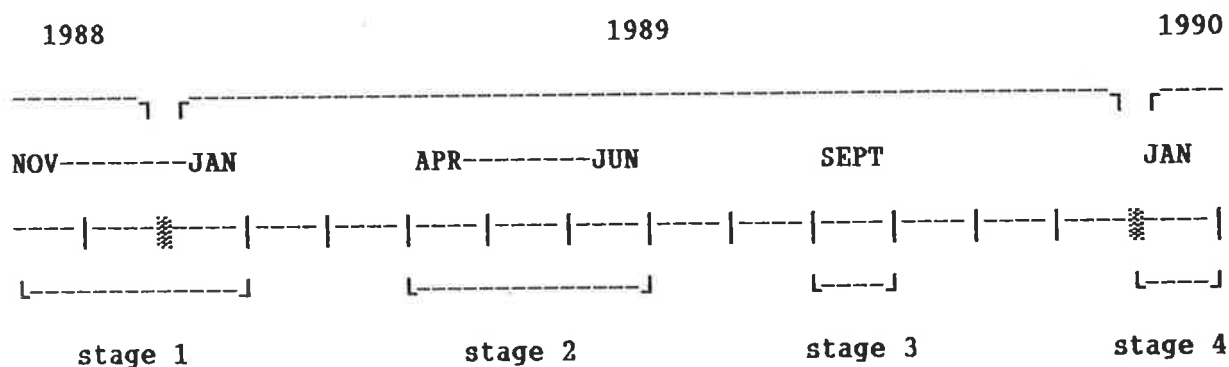
Stage 2 measures for the dependent variables included the questionnaires: 'How I Procrastinate' (HIP), 'Why I Procrastinate' (WIP), 'Feelings About Study' (FAS), the 'Self-Evaluation Questionnaire' (STAI-T) and the 'Beck Inventory' (BDI) (see appendices H to L), together with an introductory and explanatory letter (appendix G). Stage 2 packages were personally presented by the author to each of the 180 stage 1 participants at the end of March, 1989, for self-administration. Completed questionnaires were received from 116 of these subjects during the period, April to June, 1989.

At stage 3, during September, ratings of observed procrastination (Po) were obtained from lecturers for each of the 235 students in the investigation. Lecturers were presented with class lists and asked to place a rating, from '0' (never) to '6' (always), next to the name of each student, to indicate frequency of procrastination. A letter was presented to each lecturer with instructions for rating the procrastination of their students (appendix M).

Stage 4 measures of perseverance, performance and aggregate were finalised in January, 1990, immediately after the publication of students' final grades by SSABSA. All stage 4 data (except for performance scores, which did not exist for withdrawn students) were obtained for the 235 students in the investigation.

The parent sample for the investigation was essentially the population of 235 full-time adult matriculation students, for whom most of the stage 1, stage 3 and stage 4 data were available. Stage 2 data were available for a sub-sample of 116 students.

The procedural time frame is summarised below.



## 3.2 MARRIAGE

After an unsuccessful attempt to engage KPC real estate students as participants in the study of irrational belief and its effect on marital satisfaction, friends and colleagues were successfully used as agents to recruit participants from amongst their married friends and relatives.

### 3.2.1 Subjects

The bulk of the 88 experimental subjects could be described as middle aged, middle class, well into their first marriage, and including more happy than unhappy spouses. By chance, the participants included equal numbers of husbands (44) and wives (44), whose ages ranged from 22 to 54, (mean = 39; standard deviation = 7). The lengths of their marriages ranged from 1 to 23 years (mean = 14; standard deviation = 7). Of the 88 subjects, 77 were in their first marriages.

Based upon a single self-report rating, marital happiness was over-represented in the group, 67 spouses self-rating 'at least moderately' happy, compared with 21 who self-rated as 'less than moderately' happy. General comments by those engaged by the author to recruit subjects suggested that individuals were mostly 'educated and middle class'.

Of the 88 subjects returning complete 'current' data, all but one also returned complete 'initial' (retrospective) data; one female respondent returned complete 'current' data, but incomplete 'initial' data. The 88 participants included 39 couples who returned complete data. The fortieth

couple included the aforementioned female respondent who failed to complete 'initial' data.

### 3.2.2 Variables and instruments

Independent variables were derived from the experimental questionnaire, 'Beliefs About Marriage' (BAM; appendix T). The full-scale includes 10 a priori / empirical sub-scales, each of 10 items. Ratings of belief (B) and reality (R) serve as the basis for all of the independent variables defined below.

#### Belief and reality

BAM items are rated for belief (B) and reality (R) on a 7-point frequency scale from '0'(never) to '6'(always). Scores on each of the 10 sub-scales range from '0' to '60'. All B ratings are scored in the same direction. All R ratings are scored in the same direction, except for R sub-scales 4 and 9 and the R ratings for items 43, 53, 85 and 95. These expressions were reversed solely to make semantically opposite meanings clearer to the respondent. Belief sub-scales and meanings of high scores are as follows.

#### 1. Approval:

The need for overt affirmation and approval for one's opinions, sexual performance, domestic and parenting contributions;

#### 2. Performance:

The need for things to be done well: home duties, social behaviour, sexual activity and financial management;

### 3. Morality:

The need for a strict code of moral conduct in relation to general honesty, fidelity, sexual fantasy and activity;

### 4. Catastrophisation:

The tendency to generalise isolated, minor and transient difficulties, such as a disagreement, a sexual rejection or a minor mistake as major, global disasters;

### 5. Uniqueness:

The belief that one's relationship is exclusive in terms of mutual understanding, confidentiality and being perfectly in tune, that partners are made for each other, that no other partner could do;

### 6. Altruism:

The requirement that one's partner and one's marriage should come before all else: before oneself, one's friends, one's relatives, one's personal interests. In short, the belief that one should live for one's partner;

### 7. Avoidance:

The belief that conflict, disagreement, justifiable objections and protests should be avoided;

### 8. Dependence:

The need to depend on one's partner for personal happiness, security, emotional support, one's sense of identity, one's reason for being;

## 9. External Locus:

The perception that one is powerless to control, or exert any influence on such marital stresses as financial, social, work and parental pressures;

## 10. Ideality:

The assumption that marriage will always be fun, romantic, that love will conquer all, that one's partner must always be just right physically, emotionally, behaviourally.

Other independent variables: dissonance, attributional dissonance and self attributional bias, are also defined in terms of the B and R ratings.

### Dissonance:

Dissonance (D) between each belief (B) and reality (R) is defined simply as the difference (B-R). Summing these discrepancies (D) between each B and R provides a measure of overall dissonance, the measure of irrationality to be examined in the present study of marriage. Positive D scores reflect marital expectations which exceed realities.

### Attributional dissonance:

In section 2, it was argued that the 44 partner-focused BAM items (e.g. *'My partner puts his own interests before me'*) generate a subscale which yields a measure of 'attributional dissonance' (see appendix U). 'Attributional dissonance' is defined as the dissonance (B-R) summed over the 44 partner-focused items, high scores indicating a spouse's perception that his / her partner is falling short of



marital expectations. Defined thus, attributional dissonance is directly related to 'responsibility attribution' employed in the study of close relationships by Fincham & Bradbury (1987b).

**Self attributional bias:**

'Self attributional bias' (SAB) reflects the tendency of spouses to over-rate their own marital contributions compared with partners' perceptions. Fifty of the BAM items exist in 25 pairs, each pair consisting of a reality (Rs) requiring self-assessment (e.g. item 42. Rs...'*I satisfy my partner sexually*') and a corresponding one (Rp) requiring the partner's assessment of the same event or behaviour (i.e. item 52. Rp...'*My partner satisfies me sexually*'). For each spouse, the sum of these differences (Rs-Rp) for the 25 item-pairs provides an overall SAB score. Positive SAB scores reflect over self-assessment relative to the partner's assessment (or under attribution by the partner).

The dependent measures were as follows.

**Happiness:**

Marital happiness is assessed by a single 7-point rating from '0' (not at all happy) to '6' (extremely happy) on the last page of the questionnaire.

**Satisfaction:**

The BAM reality (R) item 100 provides a rating for '*frequency of satisfaction with partner*', ranging from '0' (never) to '6' (always).

### 3.2.3 Procedure

Five married friends of the author completed the BAM as a trial and commented on their ratings and general reactions to the questionnaire. As a result, no major modifications seemed necessary, apart from some minor changes of expression. They reported that most items were '*fairly easy*' to answer and that focusing on the comparison between belief (how things '*should be*') and perceived reality (how things '*actually are*', or '*appear to be*') helped them decide their ratings. On most items, they recalled that they '*quickly and easily*' became clear about whether their expectation was being met, and to what extent. However, they all commented on the extreme length and demands of the test.

Real estate students at KPC typically included people in their 30s, 40s and 50s, who were more likely to be married than other younger groups at KPC. Therefore, real estate students were targeted for the study of irrational beliefs about marriage in 1989. Packages had been prepared, containing two self-administrable BAM questionnaires (appendix T), two letters of introduction and instruction (appendix S) and two pre-paid, addressed, return envelopes, one set for each partner.

The author was introduced to a class in May, 1989 and briefly discussed experimental aims, instructions, procedure and student anonymity. BAM packages were taken by 25 students. Unfortunately, not one of them was returned. The non-response was attributed to the length and complexity of the BAM questionnaire, the private nature of its content and the fact that the author had very little to do with real estate students professionally.

Because of the demands of BAM, it was decided to use selected 'agents' to recruit their close friends and relatives. Agents would know which of their friends and relatives would be prepared to contribute the time, effort and care to complete BAM, despite its demands. Agents would also have access to networks of potential subjects not available to the author. Subjects would feel a greater sense of anonymity, by not dealing with the author directly, other than via the letter of introduction. Each agent was thoroughly inducted by the author in regard to the experimental rationale, aims, procedures, materials, demands and potential problems, using sample BAM questionnaires and answers, so that they could brief potential subjects adequately.

Although this strategy produced a sufficient return, most subjects proved to be happy. Another associate of the author, a professional marital therapist, agreed to recruit some of her clients to participate in the study. While this measure had the effect of boosting the proportion of unhappy spouses, the sample still remained biased towards happiness. The completed BAM questionnaires were returned by mail throughout the months July to December, 1989.

Ultimately, a sample of 88 married individuals, including 40 couples, provided complete 'current' data on BAM. Of these, 87 individuals, including 39 couples, provided complete 'initial' data as well. Of the 200 BAM questionnaires distributed (i.e. 100 couple-packages, including the 25 to Real Estate students which yielded no returns), 88 were returned, representing a return rate of 44%. The letter of introduction / instruction emphasised that partners should complete and return BAM independently.

### 3.2.4 Analyses

All statistical analyses were performed by computer, using the 'Statistical Package for Social Sciences' (Nie et al., 1975; Norusis, 1985, 1990a, 1990b). The various analyses employed are described where relevant in chapter 4.

## 4. RESULTS & CONCLUSIONS

### 4.1 STUDY

After an introductory overview of the general characteristics of the student population, psychometric properties of the BAS scales (full- and sub- scales) are examined in detail. Of central importance, the BAS (a study-specific test of irrational belief) and the IBT (a general test of irrational belief) are compared in regard to their ability to correctly predict students at risk. Finally, some of the properties of the self-report procrastination measures, HIP and WIP, are assessed.

#### 4.1.1 General characteristics of students

From data for the 1989 population of adult matriculation students at Kensington Park College, certain weak but significant relationships are apparent from table 2. Age effects seem to reflect a population characteristic of the College during the 80s (Linke, 1980). Younger students entered the course having reached higher education levels than older students ( $r = -.35$ ,  $p < .001$ ). Typically, 65% of students were repeating matriculants from 18 to 21 years of age and. It appears that younger students tended to have more extreme expectations about study ( $r = -.20$ ,  $p < .01$ ). They also procrastinated more than older students, both by lecturers' ratings,  $P_o$  ( $r = -.28$ ,  $p < .001$ ) and by self-report,  $P_s$  ( $r = -.20$ ,  $p < .05$ ). Thus, in view of the evidence which links reduced performance to

**TABLE 2**

Correlations of all variables with biographical variables

Variable	N	Age	Sex	Arts Bias	Education Level	Ability
Age	235					
Sex	235	-.03				
Arts Bias	235	.00	-.22**			
Education Level	235	-.35***	.11	.15*		
Ability	235	.13	-.01	.03	.09	
BAS ( <i>full scale</i> )	180	-.20**	-.07	-.05	.11	-.25**
IBT ( <i>full scale</i> )	180	-.10	.06	-.03	.11	-.13
Procrast ( <i>Po</i> )	235	-.28**	.21**	.16*	.09	-.10
Procrast ( <i>Ps</i> )	116	-.20*	.03	.05	.00	.01
Anxiety	116	-.10	-.16	.08	-.03	.05
Depression	116	-.08	-.20*	.18	-.02	.05
Perseverance	235	.07	-.11	-.14*	.05	.09
GPA	164	.29**	-.20**	-.10	-.07	.28**
Aggregate	235	.16	-.16*	-.17*	.03	.18*

p<.05    \*\* P<.01    \*\*\* p<.001 (two-tailed probabilities)

irrationality (Ellis, 1979) and procrastination (Ellis & Knaus, 1977), it is not surprising that older students tended to score higher GPAs than younger students ( $r=.29$ ,  $p<.001$ ), despite entering the course with less formal educational experience.

There were very few sex effects and those which were significant were weak. Male students chose a smaller proportion of arts subjects ( $r=-.22$ ,  $p<.01$ ), procrastinated more ( $r=.21$ ,  $p<.01$ ), and tended to report feeling less depressed ( $r=-.20$ ,  $p<.05$ ) than female students. They also tended to score lower GPAs ( $r=-.20$ ,  $p<.01$ ) and lower aggregates ( $r=-.16$ ,  $p<.05$ ) than females.

Arts bias effects were even weaker than sex effects. Arts students tended to be more idealistic ( $r=.15$ ,  $p<.05$ ), more inclined to procrastinate ( $r=.16$ ,  $p<.05$ ) and less inclined to persevere ( $r=-.14$ ,  $p<.05$ ); they also tended to score lower aggregates ( $r=-.17$ ,  $p<.05$ ).

Investigations of irrational belief in the context of study generally omit ability measures. However, Ellis' (1979a) impression from his clinical experience is that irrationality is unrelated to ability; he claims that it touches all people of all abilities. The present investigation revealed that, for adult matriculants, ability bore a low negative correlation with irrational belief about study ( $r=-.25$ ,  $p<.01$ ). Thus, less able students tended to have more extreme expectations about study than those of higher ability.

In regard to performance for these students, the usual positive correlation with ability was found (Anastasi, 1988; Linke, 1980), indicating that the

more capable students tended to score higher GPAs ( $r=.28$ ,  $p<.001$ ) and aggregates ( $r=.18$ ,  $p<.05$ ).

#### 4.1.2 Dependent variable intercorrelations

In keeping with a previous study on a similar group of students (Linke, 1980), as well as other studies (Astin, 1971; Pedrini & Pedrini, 1978), it is evident from table 3 that perseverance (percentage of course completed) and performance (grade point average, GPA) in study are similarly related to the same antecedents. Correlations of each with self-report procrastination, Ps ( $r=-.34$  and  $r=-.31$ ,  $p<.001$ ), observed procrastination, Po ( $r=-.68$  and  $r=-.60$ ,  $p<.001$ ), anxiety ( $r=-.34$ ,  $p<.001$  and  $r=-.21$ ,  $p<.05$ ) and negative affect ( $r=-.22$ ,  $p<.05$  and  $r=-.17$ , non-sig) are comparable; only their correlations with depression differed ( $r=-.42$ ,  $p<.001$  and  $r=-.09$ , non-sig). If perseverance and GPA generally stem from similar causes or antecedents, as proposed, then both can be justifiably pooled for a single index of performance outcome, such as the aggregate of scaled marks, used in the present study.

Table 3 shows that the positive correlations of self-report procrastination (Ps) with anxiety ( $r=.43$ ,  $p<.001$ ), depression ( $r=.39$ ,  $p<.001$ ) and negative affect ( $r=.27$ ,  $p<.01$ ) are in keeping with the clinical experience of Ellis & Knaus (1977) and the findings of Beswick et al. (1988) and Solomon & Rothblum (1984). Observed procrastination (Po) is also related to anxiety ( $r=.27$ ,  $p<.01$ ), depression ( $r=.34$ ,  $p<.001$ ) and negative affect ( $r=.22$ ,  $p<.05$ ), confirming that both self-reported and observed procrastination are associated with emotional discomfort.



TABLE 3

Intercorrelations of dependent variables

Variable		Ps	Po	A	D	Af	Pers	GPA
Procrastination Ps (Self-report)		1.0						
Procrastination Po (Observed)		.48**	1.0					
Anxiety	A	.44**	.27**	1.0				
Depression	D	.41**	.35**	.73***	1.0			
Negative Affect	Af	.27**	.22*	.44**	.42**	1.0		
Perseverance	Pers	-.37**	-.69*** N=180	-.34**	-.42**	-.22*	1.0	
Grade-Point-Average	GPA	-.32** N=100	-.60*** N=135	-.21* N=100	-.09 N=100	-.17 N=100	.21** N=135	1.0
Aggregate	Agg	-.45**	-.78*** N=180	-.38**	-.41**	-.26**	.93*** N=180	.82

\* p<.05    \*\* p<.01    \*\*\* p<.001 (p values are for two-tailed tests)

Note:

N = 116 except where stated otherwise (variation due to missing data)

While self-report procrastination (Ps) bears modest but significant correlations with perseverance ( $r=-.34$ ,  $p<.001$ ), grade point average ( $r=-.31$ ,  $p<.001$ ) and aggregate ( $r=.42$ ,  $p<.001$ ), the corresponding correlations for observed procrastination, Po ( $r=-.68$ ,  $-.60$  and  $-.77$  respectively,  $p<.001$ ) are approximately double those for Ps. The strength of the associations of Po with perseverance, GPA and aggregate is in keeping with the claims of Ellis & Knaus (1977), partly reflecting the comprehensive basis of Po which, for each student, embraced repeated measures of 5 procrastination behaviours assessed by 4 or 5 lecturers over a maximum of 7 months, in accordance with Azjen's (1988) principle of 'aggregation'. Previous studies have used only single-act measures of observed procrastination (e.g. Beswick et al., 1988), which are less representative of the frequency and degree of procrastination and, therefore, are likely to result in smaller correlations with performance criteria (Azjen, 1988).

The correlation between Ps and Po ( $r=.45$ ,  $p<.001$ ) was lower than desirable for measures of the same construct (Campbell & Fiske, 1959), a result which can be explained in terms of

1. differences in content of Ps (delays in getting down to study, requesting help and concentrating in class) and Po (assignment deadlines, tests and lessons actually missed). The former do not always lead to the latter, as noted by Beswick et al. (1988). For instance, in this study, late starts on assignments (item 5. in HIP) were reported to be much more frequent than actually unmet deadlines (item 10. in HIP). Thus, while 42.5% of students were late starting assignments more than half of the time, only 5% actually missed deadlines more than half of the time.

2. the timing of the measures. Ps sampled only the first 2 months of the course; Po was based upon the first 7 months. Procrastination can set in well after the first two months for a variety of reasons. A low Ps, reflecting the first 2 months of disciplined input, can be followed by a subsequent lapse, eventually resulting in a high Po.
3. the subjectivity of Ps compared with the objectivity of Po. It is apparent from the author's counselling experiences that some students (often the more perfectionistic) over-rate the frequency of their delays, while others (often the less industrious) under-rate it, each type resulting in a mismatch with observation (Po).
4. the difference between participants and non-participants on Po. Table 16 (p.159) shows that non-participants scored significantly higher on Po than participants ( $t=5.27$ ,  $df=233$ ,  $p<.001$ ). Thus, if non-participants had also completed HIP, they probably would have raised the correlation between Ps and Po.

As frequently found in previous investigations (Gotlib, 1984; Hollon & Kendall, 1980; Spielberger et al., 1983; Zurawski & Smith, 1987), the self-report measures of trait anxiety (STAIT) and depression (BDI), supposedly assessing distinct psychopathological states, are highly correlated ( $r=.73$ ,  $p<.001$ ) and, therefore, place their assumed orthogonality in question, contrary to the claim by Beck & Beck (1972), that 'the BDI discriminates well between anxiety and depression'. It is likely that a large part of this high correlation is due to common variance (Beck, Brown, Steer, Eidelson & Riskind, 1987; O'Leary et al., 1994). It is readily apparent that 14 of the 20 anxiety (STAIT) items can be regarded as semantically

equivalent to 7 of the 13 depression items (BDI, short form), constituting a large overlap in content.

The substantial correlations of Negative Affect with both Anxiety ( $r=.44$ ,  $p<.001$ ) and Depression ( $r=.42$ ,  $p<.001$ ), as well as the high correlation between Anxiety and Depression ( $r=.73$ ,  $p<.001$ ), provide support for the general trait of 'negative affectivity' advanced by Watson & Clark (1984).

#### 4.1.3 The BAS scales

To assess the a priori scales of BAS empirically, it was decided to employ cluster analysis rather than factor analysis, because of the relatively small sample size ( $N=180$ ), regarded as inadequate for 48 variables by Tabachnick & Fidell (1989, p.603). They consider it desirable to have 'at least five cases for each observed variable', as a 'general rule of thumb'. Moreover, cluster analysis often affords greater clarity of interpretation (Borgen & Barnett, 1987; Borgen & Weiss, 1971; Norusis, 1985). It was decided to use agglomerative, hierarchical cluster analysis, beginning with all variables and progressively assigning them to bigger and bigger clusters.

Of the numerous available methods for deciding which variables should be combined at each clustering step, the 'average linkage' method was chosen, with absolute correlation as the measure of proximity. 'Average linkage' is currently in favour (Norusis, 1985) because it considers correlations between all pairs of variables when assigning a variable to a cluster, unlike, for example, 'single' and 'complete' linkage methods. It is also claimed to perform as well or better than alternative methods in detecting

known clusters (Borgen & Barnett, 1987). Both versions of 'average' linkage were employed in the present analysis: the 'within-group' version which maximises the average of within-group correlations when assigning a variable to a cluster, and the 'between-group' version which minimises the average of between-group correlations.

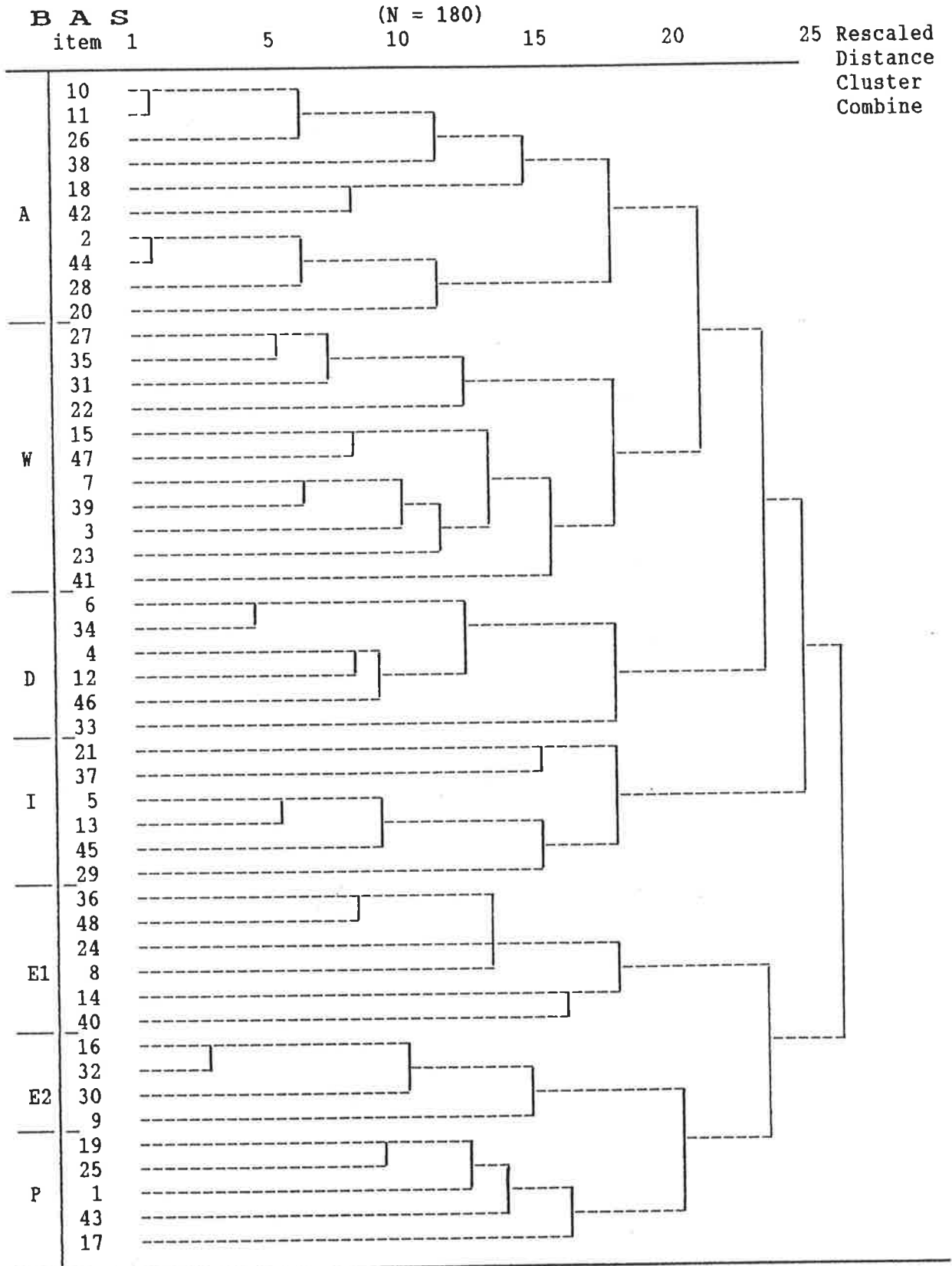
The dendrogram in table 4 illustrates a 'within-group' cluster analysis of all 48 BAS variables, yielding an interpretable 7 cluster solution. The clusters formed at a rescaled distance of 18 before further recombination at a distance of 20. Clusters for 'Approval' (A), 'Worry' (W), 'Dependence' (D), 'Ideality' (I), 'External Locus' (E) (clusters 5, 6) and 'Performance' (P) resemble the themes of corresponding a priori scales.

The P scale is small (5 items) because 3 a priori performance items (b9, b33 and b41) are peripherally attached to alien clusters. Because these items are clearly performance beliefs on theoretical grounds and, since their attachment to other clusters is only peripheral, it was resolved to retain them as P items. In addition, two a priori 'Competitiveness' items (b19 and b43) are firmly embedded in the P cluster. Since the latter could also make good sense as Performance items, it was decided to add them to the 6 a priori P items for an 8 item P scale, on both the a priori and empirical grounds advanced.

Because a priori grounds were considered in delineating the P scale, it was decided to run another cluster analysis without it. The remaining 40 BAS variables generated a 5 cluster solution similar to the first, as indicated in table 5. The clusters formed at a distance of 18 (rescaled) before further recombination at a distance of 21, and this solution included

**TABLE 4**

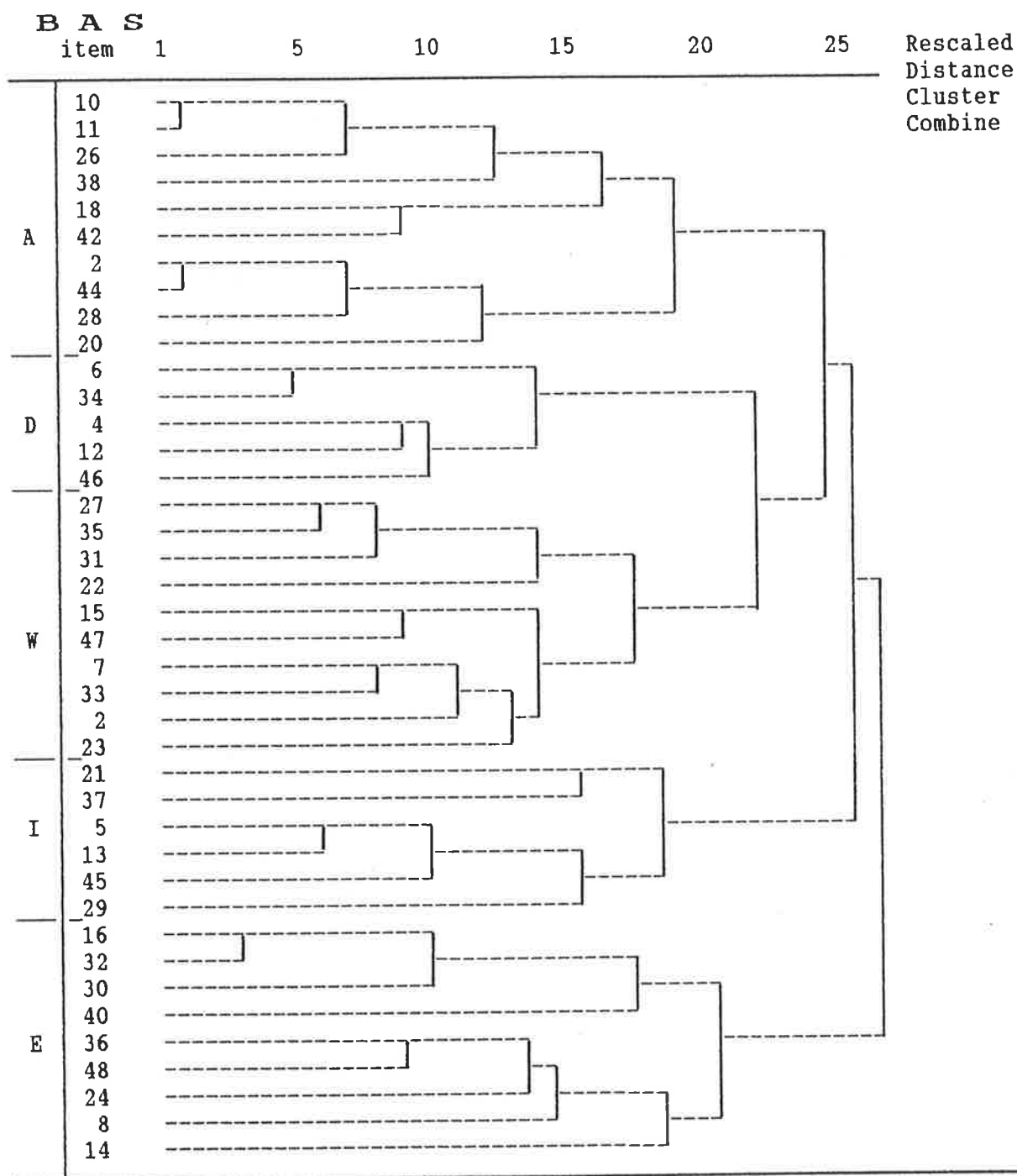
Dendrogram of clusters of Beliefs About Study (48 variables)



**TABLE 5**

**Dendrogram of clusters of Beliefs About Study (40 variables)**

(N = 180)



**Note:** Clustering was performed on the 40 BAS variables, after exclusion of the 8 'Performance' variables.

cluster (E) as 2 sub-clusters which combined at a distance of 20. The clusters were semantically homogeneous and similar in theme to 5 of the a priori sub-scales. 'Between-group' clusters resembled the 'within-group' solutions, offering some confirmation for the clusters.

Clusters for 'Approval'(A), 'Ideality'(I), 'External Locus'(E) and 'Dependence'(D) resembled a priori scales in item content, plus or minus two or three items, and retained similar thematic sense. There is no evidence from the cluster analysis to support the a priori scales of 'Avoidance', 'Certainty' and 'Competitiveness', whose items are embraced by other clusters. The main consequence is a new cluster of 10 'worry' items, including all of the 'Certainty' scale, 3 'Competitiveness' items and one 'Avoidance' item.

The empirical / theoretical 'Performance'(P) scale, and the clustered scales for 'Approval'(A), 'Worry'(W), 'Dependence'(D), 'Ideality'(D) and 'External Locus'(E), were assessed for internal consistency by Cronbach's coefficient of reliability (alpha). It is clear from appendices O and P, that the resulting values of alpha (mean  $\alpha$  = .70; range = .64 to .77) exceed those of the a priori sub-scales (mean  $\alpha$  = .58; range = .44 to .70), indicating that the clustered scales are more internally consistent, yet just as clear in theme. They have similar themes to 6 of the 8 theoretical scales.

On the grounds of superior internal consistency, no loss of and negligible change in interpretability, the 6 empirical scales were adopted in place of the 8 theoretical scales, for the purposes of predicting students at risk. Items of each of the 6 scales are provided in appendix P.



The P scale seemed to stand apart somewhat from the rest of the BAS scale. Half of its items (b1, b9, b17 and b19) yielded the only negative item-total correlations, as indicated by the results of Cronbach's test of internal consistency in appendix N. From table 6, it can be seen that the P scale has the weakest association with the full BAS scale ( $r=.21$ ,  $p<.01$ ), compared with the other five scales ( $r$  ranges from .38 to .75,  $p<.001$ ) and its correlations with the other five BAS scales are near zero, four of them marginally negative.

The separation of the P scale can be explained mainly in terms of the more perfectionistic students, who scored low on other sub-scales, and the non-perfectionistic ones with high score(s) on at least one of the other sub-scales. While the separation of the P scale reduced the homogeneity of the BAS scale ( $\alpha=.79$ ; see appendix P), it was of little concern in this study, which primarily applies the BAS sub-scales rather than the full scale.

#### 4.1.4 BAS as a linear predictor

Table 7 shows the correlations between the BAS scales and the dependent variables (both self-report and objective). From the left half of table 7 for self-report criteria, it is apparent that the correlations of the BAS scales with Depression and Procrastination (self-reported) are generally weak, if in the expected positive direction. However, 9 of the 12 correlations of the BAS sub-scales with Anxiety and Negative Affect are positive and significant. Thus, students who scored high on the Approval, Worry, Dependence and Ideality sub-scales just prior to enrolment also tended to score high on Anxiety ( $r=.19$ ,  $p<.05$  to  $r=.31$ ,  $p<.001$ ) and

**TABLE 6**

Intercorrelations of clustered scales of 'Beliefs About Study'

(N = 180)

BAS scale	P	A	W	D	I	E
Performance P	1.0					
Approval A	-.04	1.0				
Worry W	.04	.41***	1.0			
Dependence D	-.02	.28**	.30***	1.0		
Ideality I	-.12	.10	.13	.22**	1.0	
Ext Locus E	-.11	.26**	.22**	.14	.10	1.0
Full Scale	.21**	.71***	.75***	.54***	.38***	.50***

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probability tests)

**TABLE 7**

**Correlations between BAS scales and dependent variables**

BAS Sub-scale	Dependent Variables							
	A	Self-report			Objective			
		D	Af	Ps	Po	Pers	GPA	Agg
1. Performance	.04	.09	.20*	-.17	.18*	-.15*	.01	-.13
2. Approval	.29**	.10	.31***	.23*	.02	.03	-.14	-.01
3. Worry	.31***	.15	.40***	.13	.03	-.03	-.02	-.03
4. Dependence	.22*	.06	.28**	.17	.12	-.09	-.27**	-.18*
5. Ideality	.19*	.19*	.28**	.19*	.11	-.12	-.26**	-.19*
6. External Locus	.17	.08	.16	.09	-.02	.06	.01	.05
Full Scale	.39***	.20*	.45***	.20*	.11	-.08	-.17*	-.13
N	116	116	116	116	180	180	135	180

\* p < .05    \*\* p < .01    \*\*\* p < .001 (two-tailed probabilities)

Note:

A = Anxiety (on the STAIT)  
 D = Depression (on the BDI)  
 Af = Negative Affect (BAS sub-scale specific on the FAS)  
 Ps = Self-Reported Procrastination (on the HIP)

Po = Observed Procrastination (lecturer rated)  
 Pers = Perseverance (proportion of subjects completed)  
 GPA = Grade-Point-Average  
 Agg = 'Aggregate' (final aggregate of scaled marks)

Negative Affect ( $r=.28$ ,  $p<.01$  to  $r=.40$ ,  $p<.001$ ) approximately 5 months later during the academic year. The BAS full-scale also correlates significantly with the self-report criteria: Anxiety ( $r=.39$ ,  $p<.001$ ), Depression ( $r=.20$ ,  $p<.05$ ), Negative Affect ( $r=.45$ ,  $p<.001$ ) and self-report Procrastination ( $r=.20$ ,  $p<.05$ ). The above findings provide weak to modest support for the basic RET hypothesis that irrational beliefs (in this case, study-specific) cause negative emotion.

It should be noted here that negative affect was assessed by the FAS ('Feelings About Study'), a checklist of negative affects, and is sub-scale specific. For example, negative affect specifically resulting from the unmet need for approval correlates with the BAS Approval subscale ( $r=.31$ ,  $p<.001$ ). Similarly, negative affect specifically resulting from worries about study correlates with the BAS Worry subscale ( $r=.40$ ,  $p<.001$ ). These data can be interpreted as support for the importance of attending to specific irrational belief dimensions (e.g. Approval, Worry, etc.), which tend to generate negative affect specifically associated with those dimensions.

Neither the BAS full scale, nor any of the 6 sub-scales, bears a strong linear relationship with any of the objective criteria: observed Procrastination, Perseverance, Grade-Point-Average and Aggregate. The right half of table 7 is notable for its many near zero correlations, significant correlations being both scarce and small. At first sight, these findings reflect poorly on the criterion validity of the BAS, particularly when assessed by the objective criteria. However, the weak to modest linear relationships cited above could well mask stronger non-linear relationships. This possibility is examined later in section 4.1.6.

#### 4.1.5 The IBT as a linear predictor

As illustrated in the left half of table 8, 14 of the 30 correlations between IBT sub-scales and the self-report dependent variables are significant. Of the IBT sub-scales, 7 are significantly correlated with Anxiety ( $r=.23$ ,  $p<.01$  to  $r=.44$ ,  $p<.001$ ) and 4 with Depression ( $r=.21$ ,  $p<.01$  to  $r=.40$ ,  $p<.001$ ). However, the highest correlation, that between the Anticipatory Anxiety sub-scale and Anxiety ( $r=.44$ ,  $p<.001$ ) is clearly inflated by items common to the two scales. Of the 20 STAIT items, 7 relate to worry and agitation, similar to 7 of the 10 Anticipatory Anxiety items, constituting a large overlap.

Of the IBT sub-scales, Avoidance correlates most highly with self-report procrastination, Ps ( $r=.40$ ,  $p<.001$ ), although this may have been inflated by common content, since the Avoidance sub-scale consists of general procrastination items, such as

*item 7. I usually put off important decisions.*

*item 57. I seldom put things off.*

Ps is derived from the HIP, which comprises similar items, but specifically applied to study.

Just as for the BAS full-scale, the IBT full-scale correlates significantly with the self-report criteria: with Anxiety ( $r=.44$ ,  $p<.001$ ), Depression ( $r=.23$ ,  $p<.05$ ) and self-report Procrastination ( $r=.19$ ,  $p<.05$ ), providing weak to modest support for the basic RET hypothesis that irrational beliefs (in this case, general) cause negative emotion. Again, like the BAS scales, most of the IBT scales are only weakly related to the objective dependent variables, as indicated in the right half of table 8.

TABLE 8

Correlations between IBT scales and dependent variables

IBT Sub-scale	Dependent Variables						
	<i>Self-Report</i>			<i>Objective</i>			
	A	D	Ps	Po	Pers	GPA	Agg
1. Approval	.26**	.13	.05	-.10	.05	.05	.05
2. Performance	.27**	.21*	.19*	-.04	.03	.09	.06
3. Morality	-.06	-.14	-.16	-.01	.05	.08	.07
4. Catastrophism	.30**	.27**	.10	-.07	.08	.14	.12
5. Mood Control	.24*	.23*	-.02	.10	-.06	-.01	-.05
6. Anticip' Anxiety	.44***	.40***	.27**	.11	-.14	-.06	-.15*
7. Avoidance	.26**	.09	.40***	.05	.00	-.14	-.05
8. Dependence	.15	.01	-.05	-.02	-.01	-.10	-.04
9. Determinism	.23*	.03	.06	.06	-.07	-.10	-.09
10. Ideality	-.10	-.18	-.09	.05	-.03	-.05	-.05
Full Scale	.44***	.23*	.19*	.03	-.02	-.03	-.04
N	116	116	116	180	180	135	180

\* p < .05    \*\* p < .01    \*\*\* p < .001 (two-tailed probabilities)

The BAS and IBT full-scales bear strikingly similar correlations with the dependent variables. It appears then, contrary to hypothesis, that the BAS is no better than the IBT as a linear predictor of dysfunction in study. Despite their weak to modest linear relationships with affect variables, in accordance with RET, it is notable that neither the IBT nor the BAS full-scales are significantly correlated with the objective criterion measures of observed procrastination, perseverance, GPA and aggregate.

#### 4.1.6 BAS as a threshold predictor

To test the hypothesis that high BAS scale scores are likely to identify students at risk of emotional, behavioural and performance dysfunction in study, students were defined 'at risk' if they scored above a threshold value on one or more of the 6 BAS sub-scales. Sub-scale scores were transformed to Z-scores for comparison with a range of threshold values ranging from  $Z=.6$  to  $Z=1.3$  at intervals of 0.1. For each threshold Z-value, the 180 students were categorised in accordance with predicted by actual outcomes. Outcome was defined dichotomously as either 'success' (completion of all subjects and an aggregate of at least 59 scaled marks) or 'non-success' (non-completion of one or more subjects and/or less than 59 scaled marks). The resulting frequencies are shown in 2x2 contingency tables in table 9, each accompanied by a chi-square value to assess the differentiation between successful and unsuccessful students, as well as a 'hit rate', the percentage of correctly predicted 'unsuccessful' students.

The threshold value,  $Z=0.9$ , produced an optimum 'hit rate' of 72.7%, as shown in table 10. Of the 110 students 'at risk', 80 were 'unsuccessful'.

**TABLE 9**

Contingency tables of risk (r) by success (s) for 8 criteria of risk, derived from extreme beliefs about study on the BAS

(N = 180)

(r) 'Risk' requires a z-score > k (threshold) on at least one of the six scales of BAS

(s) 'Success' requires completion of all subjects undertaken and an aggregate  $\geq$  59 scaled marks

(a) Threshold:  $Z > .6$

		SUCCESS		
		No	Yes	
RISK	No	9	27	36
	Yes	86	58	144
		95	85	180

Hit Rate =  $86/144 = 59.7 \%$

$X^2 = 12.6$  (df=1,  $p < .0004$ )

(b) Threshold:  $Z > .7$

		SUCCESS		
		No	Yes	
RISK	No	12	37	49
	Yes	83	48	131
		95	85	180

Hit Rate =  $83/131 = 63.4 \%$

$X^2 = 20.9$  (df=1,  $p < .00001$ )

(c) Threshold:  $Z > 0.8$

		SUCCESS		
		No	Yes	
RISK	No	15	47	62
	Yes	80	38	118
		95	85	180

Hit Rate =  $80/118 = 67.8 \%$

$X^2 = 29.3$  (df=1,  $p < .00001$ )

(d) Threshold:  $Z > 0.9$

		SUCCESS		
		No	Yes	
RISK	No	15	55	70
	Yes	80	30	110
		95	85	180

Hit Rate =  $80/110 = 72.7 \%$

$X^2 = 43.1$  (df=1,  $p < .00001$ )



TABLE 9 continued

(e) Threshold:  $Z > 1.0$

		SUCCESS		
		No	Yes	
RISK	No	22	56	78
	Yes	73	29	102
		95	85	180

Hit Rate =  $73/102 = 71.6 \%$

$X^2 = 31.6$  (df=1,  $p < .00001$ )

(f) Threshold:  $Z > 1.1$

		SUCCESS		
		No	Yes	
RISK	No	26	57	83
	Yes	69	28	97
		95	85	180

Hit Rate =  $69/97 = 71.1 \%$

$X^2 = 26.9$  (df=1,  $p < .00001$ )

(g) Threshold:  $Z > 1.2$

		SUCCESS		
		No	Yes	
RISK	No	39	57	96
	Yes	56	28	84
		95	85	180

Hit Rate =  $56/84 = 66.7 \%$

$X^2 = 11.2$  (df=1,  $p < .0008$ )

(h) Threshold:  $Z > 1.3$

		SUCCESS		
		No	Yes	
RISK	No	54	59	113
	Yes	41	26	67
		95	85	180

Hit Rate =  $41/67 = 61.2 \%$

$X^2 = 2.52$  (df=1,  $p < .11$ )

Note: (a)  $X^2$  includes Yates' continuity correction for 2x2 contingency tables.

(b)  $X^2 \geq 10.83$  for .001 level of significance with 1 df.

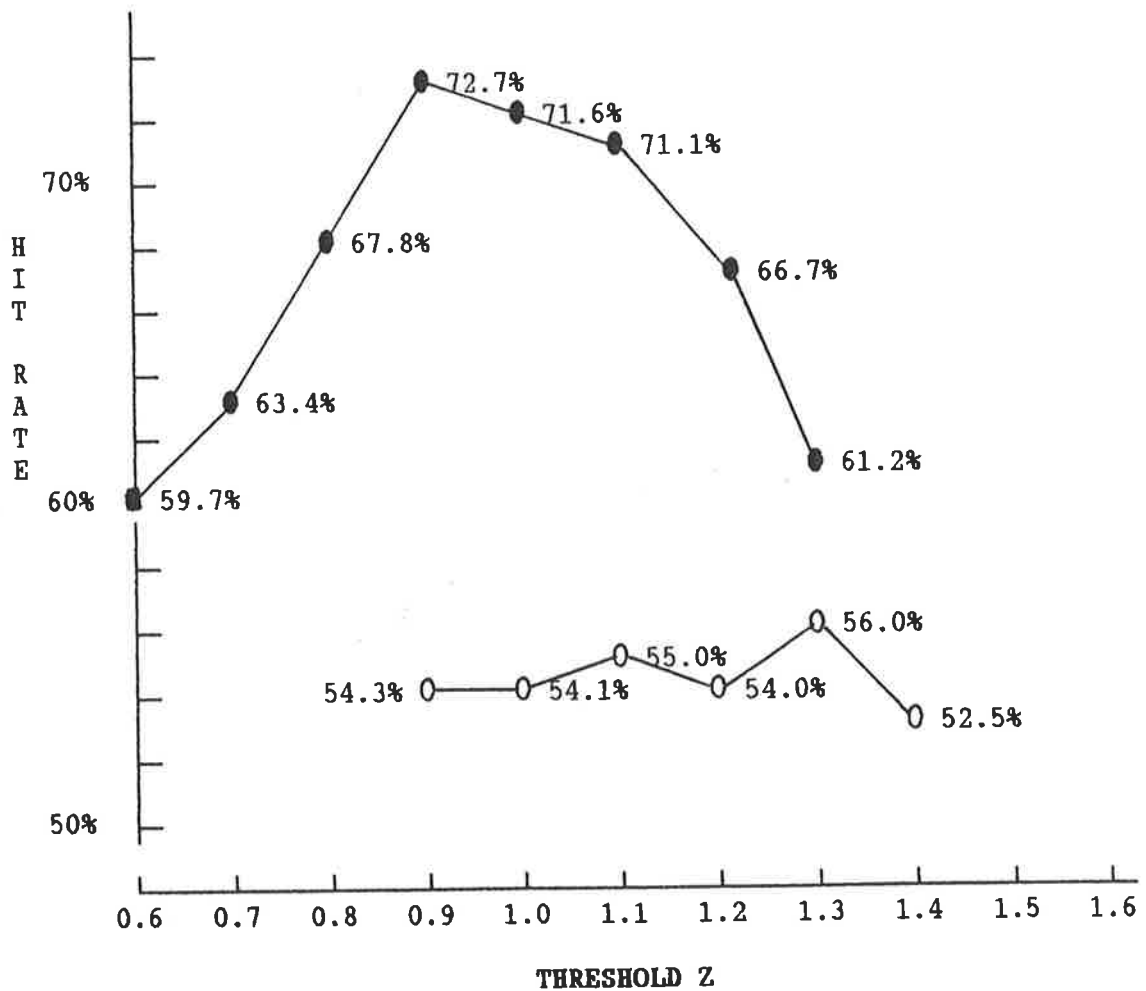
**TABLE 10**

Predicting students 'at risk' (r) of 'non-success' (ns): A comparison of BAS and IBT hit rates using various criteria of risk

(N = 180)

(r) 'Risk' requires a z-score  $> k$  (threshold) on at least one of the 6 scales of BAS, or at least one of the 10 scales of the IBT

(ns) 'Non-Success' is determined by non-completion of subject(s) and/or an aggregate  $< 59$  scaled marks



Note: ● BAS hit rate  
○ IBT hit rate

They failed to complete all subjects and/or scored less than 59 scaled points required for matriculation. The distinction between 'successful' and 'unsuccessful' students is highly significant ( $X^2 = 43.1$ ,  $p < .00001$ ).

The group of students identified by the BAS threshold model as being 'at risk' of dysfunctional emotion, behaviour and performance in study, was significantly different from the 'non-risk' group on all of the dependent variables, and in the expected direction, as indicated in table 11. Students 'at risk' scored lower aggregates ( $t = -8.23$ ,  $p < .001$ ), lower GPAs ( $t = -3.54$ ,  $p < .001$ ) and persevered less ( $t = -7.07$ ,  $p < .001$ ) than 'non-risk' students. On average, the aggregates of students 'at risk' were only half those of 'non-risk' students (33.6 scaled marks compared with 67.4), largely due to their much lower perseverance, completing only 2.7 subjects (perseverance = 53.3%) compared with 4.7 (perseverance = 94.3%) out of 5.

In addition, students 'at risk' were also more anxious ( $t = 4.78$ ,  $p < .001$ ), more depressed ( $t = 3.42$ ,  $p < .001$ ) and more inclined to procrastinate, both by self-report ( $t = 3.69$ ,  $p < .001$ ) and according to lecturers' observations ( $t = 6.91$ ,  $p < .001$ ). While students at risk were observed to procrastinate almost 'half of the time' (mean  $P_o = 2.80$ ), non-risk students 'rarely' did so (mean  $P_o = 1.07$ ).

Thus, extreme beliefs about study, as measured on the BAS, effectively predicted and identified students who were likely to experience dysfunctional emotion, behaviour and performance in study, as hypothesised and in keeping with RET. Although it cannot be claimed that extreme belief caused students' dysfunction, the suggestion of a causal contribution is consistent with the temporal structure of the experimental design. BAS was

**TABLE 11**

Dependent variable differences for 'risk' & 'non-risk' groups, where 'risk' is defined by extreme beliefs about study on BAS

**t-test Comparisons**

Variable	Group	N	Mean	S.D.	t	p
Procrastination (observed)	Risk	110	2.80	1.84	6.91	.000
	Non-Risk	70	1.07	1.26		
Procrastination (self-report)	Risk	62	53.4	19.7	3.69	.000
	Non-Risk	54	41.4	14.3		
Anxiety	Risk	62	47.8	11.0	4.78	.000
	Non-Risk	54	38.8	9.13		
Depression	Risk	62	6.90	6.38	3.42	.001
	Non-Risk	54	3.50	3.80		
Perseverance	Risk	110	53.3	45.9	-7.07	.000
	Non-Risk	70	94.3	19.6		
Grade Point Ave	Risk	67	12.7	3.13	-3.54	.001
	Non-Risk	68	14.4	2.46		
Aggregate	Risk	110	33.6	31.1	-8.23	.000
	Non-Risk	70	67.4	18.3		

Probabilities (p) are for two-tailed tests

Note:

'Risk' is defined by a z-score  $\geq 0.9$  on at least one of the 6 scales of BAS, generating an optimum 'hit' rate of 72.7%

administered just prior to the beginning of the course, while dependent measures were taken 3 to 12 months into the course.

The 110 students deemed 'at risk' are distinguishable as either 'hits', those who were 'unsuccessful' as predicted, or 'false alarms', those who, contrary to prediction, 'succeeded' in completing all subjects and scoring at least 59 scaled marks. When table 12 is examined for the differences between the 'hits' and 'false alarms', it is apparent that the groups do not differ significantly on anxiety ( $t=1.32$ ) or depression ( $t=1.27$ ). Procrastination is the variable which separates the unsuccessful (the 'hits') from the successful (the 'false alarms').

The 'hits' scored significantly higher than the 'false alarms' on both observed procrastination ( $t=6.04$ ,  $p<.001$ ) and self-report procrastination ( $t=2.33$ ,  $p<.05$ ). On average, the 'hits' were observed by their lecturers to procrastinate more than half of the time (mean  $P_o = 3.36$  on the scale from 0 to 6) in regard to class attendance, submitting assignments, completing long projects, doing tests and tutorial papers. In stark contrast, the 'false alarms' rarely procrastinated (mean  $P_o = 1.30$ ). Since the 'hits' also persevered significantly less than the 'false alarms' ( $t=-8.35$ ,  $p<.001$ ), completing only 35.8% of the course compared with 100% for the 'false alarms', it is likely that their frequent procrastination contributed to their partial (and in some cases, complete) course withdrawal, as well as their lower GPAs ( $t=-5.12$ ,  $p<.001$ ).

A cursory inspection of the 30 'false alarms' (see table 13) reveals 6 'realistic performers' (category P), who had relatively high expectations ( $Z>1$ ) of their academic performance but relatively low scores ( $Z<0$ ) for

TABLE 12

Dependent variable differences for 'hits' and 'false alarms'

t-test Comparisons

Variable	Group	N	Mean	S.D.	t	p
Procrastination (observed)	Hits	80	3.36	1.66	6.04	.000
	False Alarms	30	1.30	1.39		
Procrastination (self-report)	Hits	39	57.7	18.6	2.33	.023
	False Alarms	23	46.0	19.7		
Anxiety	Hits	39	49.2	11.5	1.32	.193
	False Alarms	23	45.4	9.85		
Depression	Hits	39	7.69	7.02	1.27	.207
	False Alarms	23	5.56	4.99		
Perseverance	Hits	80	35.8	42.0	-8.35	.000
	False Alarms	30	100	0		
Grade Point Ave	Hits	37	11.2	3.08	-5.12	.000
	False Alarms	30	14.5	2.01		
Aggregate	Hits	80	19.3	23.1	-12.0	.000
	False Alarms	30	71.8	9.86		

Probabilities (p) are for two-tailed tests

Note:

- (r) 'Risk' is determined by a Z-score  $> 0.9$  on at least one of the 6 sub-scales of BAS. Students 'at risk' are 'hits' or 'false alarms'.
- (h) 'Hits' are students 'at risk' and 'unsuccessful'; they do not complete all subjects and/or score an aggregate  $< 59$  scaled marks.
- (fa) 'False Alarms' are students 'at risk', but 'successful'; they complete all subjects and score an aggregate  $\geq 59$  scaled marks.

**TABLE 13**

Characteristics of 'false alarms', students 'at risk' yet 'successful'

(N = 30)

Variable	Student Identity Number									
	002	003	004	014	020	021	049	050	053	056
Performance	-1.4	1.4	-.2	.5	.1	1.0	-.4	1.3	1.0	-.9
Approval	2.5	-.3	-.3	1.9	1.9	2.0	1.3	.2	1.0	.3
Worry	-1.0	.5	-1.3	-1.2	.4	2.4	1.8	.8	.2	1.3
Dependence	1.0	-.9	-1.3	1.2	-1.1	-.3	.4	-.7	.7	1.2
Ideality	-1.1	.8	-.9	.6	-.3	.6	-1.1	1.0	1.4	-.3
Ext Locus	-.0	-.3	2.1	-.0	3.1	2.9	-.2	.8	-.3	1.0
Procrast Po	-.8	-1.3	-1.3	-.2	-.8	1.9	.3	-1.3	-.8	-.2
Procrast Ps	.9	-1.4		1.0	-.5	1.3	1.2	-.3		.6
Anxiety A	1.9	-.8		.1	-.3	1.8	.6	-.8		1.1
Depress D	2.6	-1.0		.1	-.6	2.3	.8	-.2		.5
Affect Af	-.4	-1.0		-.3	.2	3.3	-.2	-.4		1.3
Aggregate	66	86	76	66	70	69	73	84	62	63
Category	C	P		C	C	C	C	P	B	B

Variable	Student Identity Number									
	074	082	092	101	103	107	113	115	117	118
Performance	-.5	-1.2	1.4	-2.0	.6	-.7	-.4	.6	-.2	-1.2
Approval	.8	-1.0	.8	.5	.5	.4	1.3	.6	-.5	1.0
Worry	1.5	-.4	.1	1.4	-.8	.1	2.2	-.1	.2	2.1
Dependence	.8	1.0	-1.5	1.0	2.6	1.4	-1.5	1.4	-.1	1.8
Ideality	-1.2	.5	-2.4	1.4	2.4	1.4	.5	.6	-.5	1.0
Ext Locus	-1.2	-.0	-1.2	1.0	1.6	1.8	2.3	-1.0	1.3	2.7
Procrast Po	-1.3	-.2	-.8	-1.3	-.2	-1.3	.3	.3	-.2	-.8
Procrast Ps		.7	-2.1	.6		-.1	-.4		-1.1	
Anxiety A		-.6	-1.0	1.7		-.3	-.7		-.6	
Depress D		-1.0	-.4	.3		.1	-.4		-.4	
Affect Af		.3	.4	1.7		2.7	.6		-.9	
Aggregate	74	65	75	64	65	69	61	59	78	63
Category		B	P	C	B	C	B	B		B

TABLE 13 continued

Variable	Student Identity Number									
	127	131	138	151	160	166	174	175	176	177
Performance	-.0	1.0	2.1	-1.0	-.2	-2.2	-.7	1.4	-2.4	1.6
Approval	1.2	.6	.2	1.6	.9	.8	.4	-.9	1.6	.2
Worry	1.9	.7	-1.2	-.1	1.8	1.5	.9	-.6	-1.0	.8
Dependence	2.4	-.1	-.1	.4	-1.1	-.1	2.0	1.2	-.7	-.7
Ideality	.1	1.0	-1.2	.3	1.8	.1	.5	.5	-2.2	-2.2
Ext Locus	.3	.8	-.8	.8	1.0	.1	.6	-1.2	-.7	-.7
Procrast Po	-.2	-.8	-1.3	-1.3	-1.3	-.8	.3	-1.3	-.2	-1.3
Procrast Ps	-.8	.6	-1.6	.1	.6	.7		-1.0	1.2	-2.1
Anxiety A	.8	1.0	-.8	-.2	.8	.2		-.1	.1	-.3
Depress D	-.1	.5	-.6	-.6	.5	-.4		-.2	.4	-.4
Affect Af	-.7	.5	.3	-.8	-.2	.9		.4	-1.1	-.8
Aggregate	66	78	88	60	94	85	65	75	64	91
Category	B	P	P	B		C	B	C	B	P

Note:

1. 'Risk' is determined by a Z-score  $\geq 0.9$  on at least one of the 6 sub-scales of BAS
2. 'False alarms' are students 'at risk', yet 'successful'; they complete all subjects and score an aggregate  $\geq 59$  scaled marks
3. Variable scores are expressed as Z-scores, except for 'Aggregate' & 'Category'
4. 'Aggregate' = number of scaled marks (maximum 100)
5. 'Category' B = 'Borderline' aggregate  
 P = 'Performer' (realistic)  
 C = 'Counsellor' (rational-emotive therapy)



anxiety, depression, affect and procrastination. Thus, despite their high demands of their own performance ('irrational' by RET standards), they seemed emotionally in control and achieved high aggregates (from 75 to 91 scaled marks).

Presumably the abilities, characteristics, attitudes and application of the 'realistic performers' enabled them to meet their high self-expectations. Using the traditional measures of irrational belief (i.e. extreme belief), such 'false alarms' can be expected (Mahoney, 1979), exposing an inherent systematic error in the tests. This error could be removed by defining irrational belief as the discrepancy between expectation and reality, or dissonance (Festinger, 1957). Then, the 'realistic performers' would not be deemed 'at risk' in the first place, since their dissonance would be small. This proposition is tested later in section 4.2.3.

Aside from the realistic 'performers', counselling case notes revealed that 9 other 'false alarms' (category C) had received a considerable amount of counselling for their irrational beliefs. All but 2 of these scored above average ( $Z > 0$ ) on anxiety, depression or affect. It is the author's belief that cognitive restructuring helped these students retain sufficient control to complete the course successfully. Their disinclination to procrastinate ( $Z < 0$  for  $P_o$  and  $P_s$ ) also undoubtedly contributed to their academic survival. It is further apparent from table 13 that 10 of the 15 remaining 'false alarms' scored near the borderline (category B), from 59 to 65 scaled marks, although the causes are unknown.

Considering the make-up of the group of 'false alarms', the substantial 'hit rate' of 72.7% can be considered conservative. The predictive ability

of the BAS is not only statistically significant, but good enough for practical purposes as well, considering the high proportion of students predicted to be 'at risk', who really were at risk. Furthermore, it is clear that low to modest correlations between the BAS scales and the dependent variables actually mask a substantial threshold relationship, as hypothesised.

#### 4.1.7 The IBT as a threshold predictor

Following Anastasi's (1988) and Bandura's (1969) arguments for context specificity, the specific BAS was expected to identify students at risk of emotional and behavioural dysfunction significantly better than the general IBT. To test this hypothesis, the IBT was subjected to the same threshold analysis which was applied to the BAS. Students were defined at risk if they scored above a threshold value on one or more of the 10 IBT scales. IBT raw scale scores were transformed to Z-scores for comparison with 6 threshold values, ranging from  $Z=.9$  to  $Z=1.4$  at intervals of 0.1. It was clear that these 6 values of Z were sufficient to include the approximate Z score for a maximum hit rate. For each threshold value, the 180 students were categorised in accordance with predicted by actual outcomes. Resulting frequencies are presented in 2x2 contingency tables (see table 14), each accompanied by a chi-square value, to assess the differentiation between successful and unsuccessful students, as well as a 'hit rate', the percentage of correctly predicted 'unsuccessful' students.

The threshold value,  $Z = 1.3$ , generated an optimum hit rate of only 56% and the differentiation between 'successful' and 'unsuccessful' students is non significant ( $X^2 = 0.67, p < .42$ ); see table 14. At best, only 56 students

**TABLE 14**

Contingency tables of 'risk' (r) by 'success' (s), for 6 criteria of risk, derived from extreme general beliefs on the IBT

(N = 180)

(r) 'Risk' requires a z-score > k (threshold) on at least one of the 10 sub-scales of the IBT

(s) 'Success' requires completion of all subjects undertaken and an aggregate  $\geq 59$  scaled marks

(a) Threshold:  $Z > 0.9$

		SUCCESS		
		No	Yes	
RISK	No	19	21	40
	Yes	76	64	140
		95	85	180

Hit Rate =  $76/140 = 54.3 \%$

$\chi^2 = 0.34$  (df=1,  $p < .56$ )

(b) Threshold:  $Z > 1.0$

		SUCCESS		
		No	Yes	
RISK	No	23	24	47
	Yes	72	61	133
		95	85	180

Hit Rate =  $72/133 = 54.1 \%$

$\chi^2 = 0.20$  (df=1,  $p < .66$ )

(c) Threshold:  $Z > 1.1$

		SUCCESS		
		No	Yes	
RISK	No	29	31	60
	Yes	66	54	120
		95	85	180

Hit Rate =  $66/120 = 55.0 \%$

$\chi^2 = 0.47$  (df=1,  $p < .50$ )

(d) Threshold:  $Z > 1.2$

		SUCCESS		
		No	Yes	
RISK	No	34	33	67
	Yes	61	52	113
		95	85	180

Hit Rate =  $61/113 = 54.0 \%$

$\chi^2 = 0.07$  (df=1,  $p < .80$ )

TABLE 14 continued

(e) Threshold:  $Z > 1.3$

		SUCCESS		
		No	Yes	
RISK	No	39	41	80
	Yes	56	44	100
		95	85	180

Hit Rate =  $56/100 = 56.0\%$

$X^2 = 0.67$  (df=1,  $p < .42$ )

(f) Threshold:  $Z > 1.4$

		SUCCESS		
		No	Yes	
RISK	No	53	47	100
	Yes	42	38	80
		95	85	180

Hit Rate =  $42/80 = 52.5\%$

$X^2 = 0.00$  (df=1,  $p=1$ )

Note: (a)  $X^2$  includes Yates' continuity correction for 2x2 contingency tables.

(b)  $X^2 \geq 10.83$  for .001 level of significance with 1 df.

were correctly identified as 'unsuccessful' out of 100 defined as being 'at risk', compared with 80 out of 110 (72.7%) correct identifications by the BAS ( $X^2 = 43.1, p < .00001$ ). Table 10 shows the superiority of the specific BAS over the general IBT in correctly identifying the 'unsuccessful' students. It is clear from table 15 that the distinction between 'risk' and 'non-risk' groups by the IBT is non-significant on all dependent variables except for self-report procrastination, students 'at risk' procrastinating marginally more than 'non-risk' students ( $t = 2.53, p < .05$ ).

While the IBT was comparable with the BAS as a linear predictor, it was ineffective in identifying students at risk of emotional, behavioural and performance dysfunction, in contrast with the BAS, which was very effective. The superior discriminant validity of BAS over the IBT can be attributed largely to the specificity of its content, as predicted by Anastasi (1988), Bandura (1969), Haaga & Davison (1989) and Holtzworth-Munroe & Stuart (1994).

The strong relationship between high BAS scale scores and emotional, behavioural and performance dysfunction can be considered conservative because of many near victims amongst the 'false alarms' and because the participants exhibited a functional bias compared with non-participants. Table 16 shows that non-participants were observed by lecturers to procrastinate more than participants ( $t = 5.27, p < .001$ ). They also scored lower on Perseverance ( $t = -3.40, p < .001$ ), GPA ( $t = -2.46, p < .05$ ) and Aggregate ( $t = -4.17, p < .001$ ). Consequently, if these less functional non-participants had been included in the study, it is likely that they would have strengthened the relationship between extreme BAS scores and dysfunction even further.

TABLE 15

Dependent variable differences for 'risk' & 'non-risk' groups, where 'risk' is defined by extreme general beliefs on the IBT

t-test Comparisons

Variable	Group	N	Mean	S.D.	t	p
Procrastination (observed)	Risk	100	2.24	1.84	.92	.36
	Non-Risk	80	1.99	1.84		
Procrastination (self-report)	Risk	61	51.8	20.7	2.53	.013
	Non-Risk	55	43.4	14.2		
Anxiety	Risk	61	45.4	11.5	1.86	.065
	Non-Risk	55	41.6	10.4		
Depression	Risk	61	6.18	6.32	1.77	.080
	Non-Risk	55	4.36	4.50		
Perseverance	Risk	100	66.6	43.8	-.92	.36
	Non-Risk	80	72.5	41.5		
Grade Point Ave	Risk	73	13.6	2.58	.29	.77
	Non-Risk	62	13.5	3.31		
Aggregate	Risk	100	45.0	31.5	-.85	.40
	Non-Risk	80	49.0	31.5		

Probabilities (p) are for two-tailed tests

Note:

'Risk' is defined by a z-score  $\geq 1.3$  on at least one of the 10 sub-scales of the IBT, generating an optimum 'hit' rate of 56%

**TABLE 16**

**Participant / non-participant differences on Procrastination, Perseverance, Grade-Point-Average and Aggregate**

**t-test Comparisons**

<b>Variable</b>	<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>t</b>	<b>p</b>
<b>Procrastination (observed)</b>	<i>Non-Partic</i>	55	3.58	1.63	5.27	.000
	<i>Participants</i>	180	2.13	1.84		
<b>Perseverance</b>	<i>Non-Partic</i>	55	46.4	46.6	-3.40	.001
	<i>Participants</i>	180	69.2	42.8		
<b>Grade-Point-Ave</b>	<i>Non-Partic</i>	29	12.0	3.69	-2.46	.015
	<i>Participants</i>	135	13.5	2.93		
<b>Aggregate</b>	<i>Non-Partic</i>	55	43.5	31.6	-4.17	.000
	<i>Participants</i>	180	57.1	24.8		

Probabilities (p) are for two-tailed tests

#### 4.1.8. Procrastination scales

The HIP ('How I Procrastinate') scale was found to be internally consistent (Cronbach's  $\alpha = .90$ ), with item-total correlations ranging from .30 to .71, as presented in appendix Q. The significant correlation of self-reported procrastination (Ps) with observed procrastination ( $r=.48$ ,  $p<.001$ ), also provides a measure of its construct validity.

In attempting to check for causal dimensions of procrastination, following the study by Solomon & Rothblum (1984), who found dominant factors for 'fear of failure' and 'low frustration tolerance', it was decided to perform a cluster analysis on the WIP ('Why I Procrastinate') rather than a factor analysis. Cluster analysis was selected for easier interpretability (Borgen & Barnett, 1987; Borgen & Weiss, 1971; Norusis, 1985) and because of the relatively small sample available in the present study ( $N = 116$ ), compared with that used by Solomon & Rothblum ( $N = 342$ ). As for the BAS clusters, 'average linkage' clustering methods were used (both 'within-group' and 'between-group').

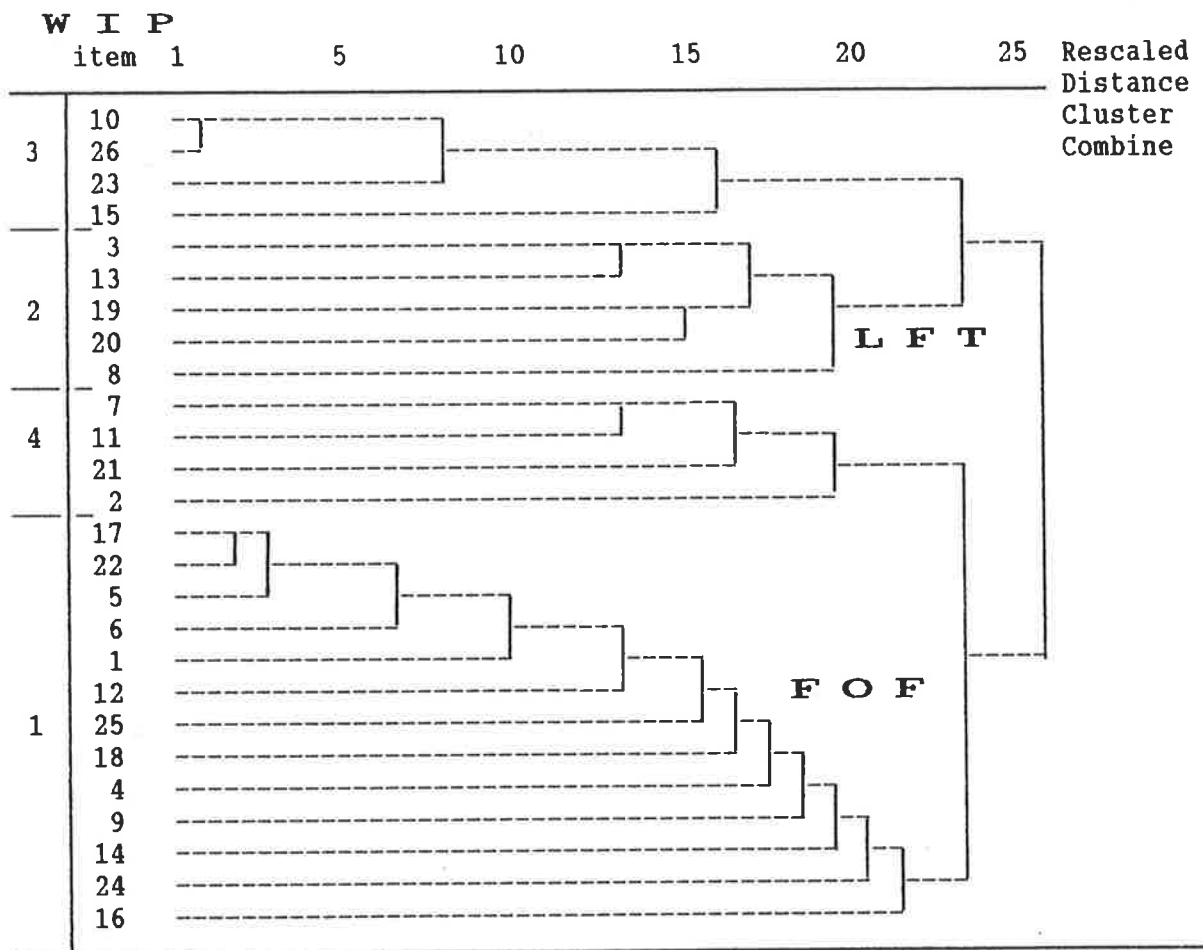
As illustrated by the dendrogram in table 17, 4 clusters can be discerned, forming at a rescaled distance of 21 before recombining at 23. The 2 clusters which stand out represent 'Fear Of Failure' (FOF; cluster 1 with 12 items) and 'Low Frustration Tolerance' (LFT; cluster 2 with 5 items), in line with the experimental findings of Solomon & Rothblum (1984) and the clinical findings of Ellis & Knaus (1979). FOF items reflect students' concerns about not meeting standards (their own and others'), feeling inadequate, overwhelmed and in need of help. LFT items reflect laziness, dislike of assignments and a preference for quick, easy, pleasures.



**TABLE 17**

**Dendrogram of clusters of 'Why I Procrastinate' (WIP)**

(N = 116)



**Note:**

1. Clusters were found using the 'within-group, average linkage' method by SPSS (Norusis, 1990a).
2. **F O F** = Fear Of failure (cluster 1)  
**L F T** = Low Frustration Tolerance (cluster 2)

Both clusters are internally consistent (see appendix Q). Cronbach's  $\alpha = .86$  for the FOF scale, item-total correlations ranging from .38 to .70. For the LFT scale, Cronbach's  $\alpha = .74$ , item-total correlations ranging from .41 to .61. What is particularly pertinent about these 2 clusters is the frequency and prominence with which they feature in students' reasons for procrastination, confirming the experimental findings of Solomon & Rothblum (1984) and Beswick et al. (1988). The response frequencies in appendix R show that FOF items account for 'half to all' ( $\geq 3$ ) of the cause of procrastination for 66% of students, on average. LFT items account for 'half to all' of the cause of procrastination for 42% of students. About half of the items in both clusters have a median rating of '3' on the scale from '0' (none) to '6' (all) for procrastinatory contribution.

While cluster 3 reflects stimulation from the pressure and challenge of last minute efforts as a cause of delay, cluster 4 is hard to classify. More importantly, and in contrast with clusters 1 and 2, only 24% of students attributed 'half to all' of their reason for procrastination to cluster 3 items and a mere 10% to cluster 4 items. Since all but one of the items in clusters 3 and 4 attracted a median response of '0' (none), their items were completely irrelevant to the cause of procrastination for more than half of the students.

Clusters 1 and 2 correlate significantly with other variables, but each with different ones. Table 18 shows that students who feared failure tended to be more irrational (on the BAS and IBT scales) than those who avoided frustration. Thus, cluster 1 (FOF) correlates significantly with the BAS scales: Dependence ( $r=.28, p<.01$ ), Worry ( $r=.29, p<.01$ ), Approval ( $r=.27, p<.01$ ), Ideality ( $r=.27, p<.01$ ) and the full-scale ( $r=.37, p<.001$ ).

**TABLE 18**

Correlations of 'Fear Of Failure' (FOF) and 'Low Frustration Tolerance' (LFT) with other variables

(N = 116)

		Fear Of Failure FOF	Low Frustration Tolerance LFT
Variable		WIP Cluster 1	WIP Cluster 2
<b>BAS SCALE</b>	1. Performance	-.02	-.21*
	2. Approval	.27**	.17
	3. Worry	.29**	.09
	4. Dependence	.28**	.09
	5. Ideality	.27**	.14
	6. External Locus	.10	.23*
	Full BAS Scale	.37***	.16
<b>IBT SCALE</b>	1. Approval	.22*	.09
	2. Performance	.19*	.09
	3. Morality	-.08	-.03
	4. Catastrophisation	.15	-.03
	5. Mood Control	-.12	-.10
	6. Anticip Anxiety	.39***	.16
	7. Avoidance	.20*	.39***
	8. Dependence	.14	.08
	9. Determinism	.09	.08
	10. Ideality	-.13	-.05
Full IBT Scale	.24**	.17	
<b>DEPENDENT VARIABLES</b>	Procrastination Po	.19*	.25**
	Procrastination Ps	.50***	.58***
	Anxiety	.45***	.11
	Depression	.42***	.05
	Perseverance	-.22*	-.03
	# GPA	-.21*	-.21*
	Aggregate	-.28**	-.11

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probabilities)

Note: # sample size for GPA is N = 100 due to missing data

Cluster 2 only correlates significantly with Performance ( $r=-.21$ ,  $p<.05$ ) and External Locus ( $r=.23$ ,  $p<.05$ ), indicating that the 'avoiders' tended to be less concerned about their performance and were more likely to attribute their difficulties to external forces rather than to themselves.

In keeping with a fear of failure, cluster 1 correlates significantly with IBT sub-scales: Approval ( $r=.22$ ,  $p<.05$ ), Performance ( $r=.19$ ,  $p<.05$ ), Anticipatory Anxiety ( $r=.39$ ,  $p<.001$ ), Avoidance ( $r=.20$ ,  $p<.05$ ) and the full scale ( $r=.24$ ,  $p<.01$ ), while cluster 2 only correlates significantly with Avoidance ( $r=.39$ ,  $p<.001$ ), reflecting low frustration tolerance.

The characteristics which differentiate the two types of procrastinators most sharply are affective. Cluster 1 (FOF) is significantly related to both self-report Anxiety ( $r=.45$ ,  $p<.001$ ) and Depression ( $r=.42$ ,  $p<.001$ ), in contrast with the corresponding relationships for cluster 2 (LFT) ( $r=.11$  and  $.05$ ; both non-significant).

The FOF and LFT scales also have some relationships in common. As might be expected, they are related to the act of procrastination, both self-rated,  $P_s$  ( $r=.50$ ,  $p<.001$  and  $r=.58$ ,  $p<.001$  respectively) and observed,  $P_o$  ( $r=.19$ ,  $p<.05$  and  $r=.25$ ,  $p<.01$  respectively). These correlations are probably under-estimates, because non-participants scored significantly more on  $P_o$  than participants ( $t=5.27$ ,  $df=233$ ,  $p<.001$ ), as indicated earlier. Therefore, if non-participants had completed the WIP, they probably would have strengthened these correlations. For the same reason, the negative correlations of FOF and LFT with GPA ( $r=-.21$ ,  $p<.01$  for both) are probably also under-estimates, since non-participants scored lower GPAs than participants ( $t=-2.46$ ,  $p<.015$ ).

In summary, clusters 1 and 2 are homogeneous in theme and internally consistent. They were frequent and substantial causes of delay, replicating previous results (e.g. Solomon & Rothblum, 1984) and supporting RET (Ellis & Knaus, 1977). The complementarity of their relationships with other variables also confirms their different constructs and, correspondingly, the need for different therapeutic strategies, as noted by Solomon & Rothblum. Cluster 3 is short, redundant, infrequently cited by students as a cause of their delay, and therefore needs further investigation. Cluster 4 can be dismissed as a heterogeneous artifact of extremely low response, perhaps a cluster by default, arising from those students who were prepared to attribute their procrastination to almost anything but their own 'fear of failure', 'frustration avoidance', or other reasons not assessed by the WIP.

## **4.2 MARRIAGE**

The following analyses use both current and initial data from the questionnaire, Beliefs About Marriage (BAM); see appendix T. Current ('now') data was derived from respondents' current belief and reality ratings, while initial ('at first') data represents retrospective ratings of their beliefs and realities at the beginning of marriage. Since memories of past events are known to be subject to distortion (Duck, 1981; Warwick & Lininger, 1975), any conclusions drawn from retrospective initial data must be considered with caution.

The degree of marital happiness, H (item 101 of BAM) was intended to be the main dependent variable. 'Frequency of satisfaction with partner', S (from

reality ratings of item 100) serves as an alternative measure. While H is current only, S offers both initial (Si) and current (Sc) measures of satisfaction with partner. As expected, H and Sc are highly correlated ( $r=.94$ ,  $p<.001$ ) and their relationships with other variables are similar, as is evident throughout the remainder of this section.

For the purpose of assessing sex effects, sex was treated as a dummy variable, by assignment of the scores '0' and '1' to female and male partners respectively, following Nie et al. (1975).

#### 4.2.1 Marital beliefs & realities over time

In the following discussion, 'Bi' and 'Ri' are used to represent the sums of initial belief and reality ratings respectively from the 100 BAM items. 'Bc' and 'Rc' represent current scores for the belief and reality scales. Table 19 indicates that beliefs dropped significantly from a mean initial total,  $Bi = 422$  (maximum 600) to a mean current total,  $Bc = 363$  ( $t=9.56$ ,  $df=87$ ,  $p<.001$ ), supporting the clinical evidence (Bagarozzi & Anderson, 1989, Dryden, 1985; Ellis, 1962; Ellis & Harper, 1961; Hartin, 1977, 1988, 1993; Lazarus, 1985; Sager, 1976), that most couples enter marriage with unrealistically high expectations, which are usually unsustainable.

It was also found that initial dissonance ( $Di = Bi - Ri$ ) correlates significantly with the drop in beliefs ( $Bi - Bc$ ) over many years of marriage ( $r=.57$ ,  $p<.001$ ), supporting the hypothesised tendency of partners to lower their initially high expectations of marriage, in an attempt to reduce the discrepancy between their beliefs and realities. Some subjects concluded

the BAM questionnaire with comments illustrating the drop in expectations which they experienced.

Subject 1. (male: H=5)

*'I was always idealistic (at first)...but, as I have grown and learnt, I have changed and moderated my view'.*

Subject 2. (female: H=5)

*'I certainly remember that I wore rose coloured glasses initially- for the first six months at least'.*

Subject 40. (female: H=6)

*'I found it very interesting...to see how different my 'now' answers were. We have both changed considerably, I was glad to note.*

Subject 56. (female: H=4)

*'...partners change during marriage in order to make it work...'*

This drop in marital expectations, to fit realities better, illustrates the post-decision dissonance effect, originally predicted by Festinger (1957) and observed by marriage clinicians (e.g. Bagarozzi & Anderson, 1989; Dryden, 1985) without adherence or reference to CDT. The comment by subject 56 demonstrates that she is actually aware of lowering her marital expectations toward consonance, that is, *'... to make it (marriage) work'*. Marital realities also dropped significantly from a mean total of  $R_i=361$  to  $R_c=313$  ( $t=7.55$ ,  $df=87$ ,  $p<.001$ ), probably reflecting the greater, but unsustainable, initial efforts of partners to meet each other's unrealistic marital expectations.

**TABLE 19**

Differences between initial belief (Bi) and current belief (Bc), between initial reality (Ri) and current reality (Rc)

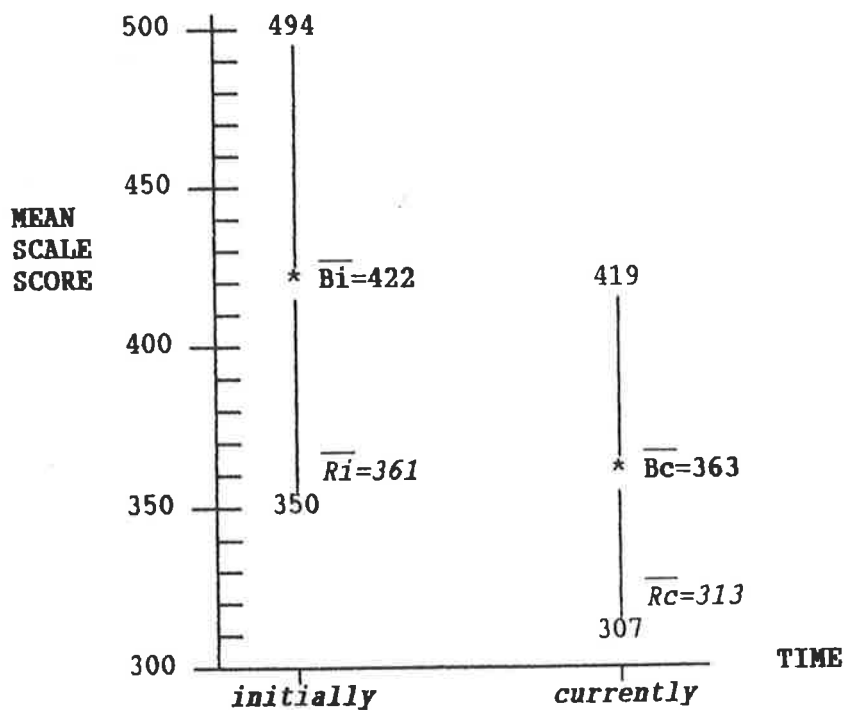
(N = 88 subjects)

t-test comparisons for paired samples

BAM Parent Scale	Mean	Standard Deviation	df	t	p
Bi	422	71.9	87	9.56	.000
Bc	363	55.9			
Ri	361	48.3	87	7.55	.000
Rc	313	65.5			

Probabilities (p) are for two-tailed tests

Mean belief scores and 68% limits





Despite the dissonance-reducing lowering of expectations by spouses, the mean level of current marital reality ( $R_c=313$ ) remained significantly less than the mean level of current belief ( $B_c=363$ ) after many years of marriage ( $t=7.55$ ,  $p<.001$ ). Thus, it seems that spouses continued to expect more than they received from marriage and partners.

#### 4.2.2 Marital belief and happiness

Table 20 reveals a significant sex difference for initial marital belief. Although the unreliability of retrospective data must be borne in mind, it appears that wives entered marriage with higher expectations than husbands ( $r=-.30$ ,  $p<.01$ ), especially the expectation of approval ( $r=-.37$ ,  $p<.001$ ) and emotional dependence on husbands ( $r=-.41$ ,  $p<.001$ ). These findings tend to mirror clinical and research findings. For example, Gray (1990, pp.34, 91) claims that women are inherently 'more interested in love and relationships' than men, their self-esteem primarily depending upon nurturing relationships. Guthrie & Snyder (1988) cite the frequent demands of unhappy wives for attention, love and acceptance from husbands.

Table 20 indicates that all initial belief sub-scales correlate negatively with sex, 8 of the 10 significantly ( $r=-.06$ , non-sig to  $r=-.41$ ,  $p<.001$ ), reflecting a consistent sex difference across all belief dimensions. However, while wives seem to have entered marriage with more extreme expectations than husbands, the difference was insignificant after many years of marriage ( $r=-.1$ , non-sig). It appears that, during the course of marriage, the drop in marital expectation was greater for wives than for husbands ( $r=-.33$ ,  $p<.01$ ). Perhaps some wives realised that they had

TABLE 20

Initial belief scales: Internal consistencies and correlations with initial satisfaction, current happiness and sex

(N = 87)

Initial Belief Scale	Internal Consistency	Initial Satisfaction	Current Happiness	Sex
1. Approval	.90	.04	-.17	-.37***
2. Performance	.83	-.00	-.09	-.28**
3. Morality	.83	.27**	-.07	-.27**
4. Catastrophisation	.78	-.29**	-.42***	-.08
5. Uniqueness	.80	.01	-.27**	-.31**
6. Altruism	.85	.12	-.07	-.26*
7. Avoidance	.81	-.02	-.13	-.06
8. Dependence	.88	.18	-.08	-.41***
9. External Locus	.87	-.24*	-.40***	-.26*
10. Ideality	.70	-.02	-.23*	-.24*
Full Scale (Bi)	.96	-.03	-.29**	-.30**

Current belief scales: Internal consistencies and correlations with current satisfaction, current happiness and sex

(N = 88)

Current Belief Scale	Internal Consistency	Current Satisfaction	Current Happiness	Sex
1. Approval	.86	-.05	-.08	-.18
2. Performance	.76	.03	.00	-.12
3. Morality	.85	.36***	.33**	-.18
4. Catastrophisation	.80	-.48***	-.53***	.09
5. Uniqueness	.77	.35***	.37***	-.14
6. Altruism	.79	.44***	.39***	.02
7. Avoidance	.78	.16	.07	.23*
8. Dependence	.84	.43***	.37***	-.19
9. External Locus	.86	-.14	-.25*	-.09
10. Ideality	.64	.09	.02	-.16
Full Scale (Bc)	.94	.14	.06	-.10

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probabilities)

expected too much initially, as illustrated by the comments of female subjects 2, 40 and 56, reported earlier.

Previous studies using the Relationship Beliefs Inventory (RBI) (Epstein & Eidelson, 1981; Epstein et al., 1987; Fincham & Bradbury, 1987b; Kurdek, 1993) have produced modest to substantial associations between marital expectation and concurrent marital dissatisfaction. This association does not appear to be supported by the present study, considering the near zero correlations found between belief and concurrent satisfaction / happiness. For initial belief and initial satisfaction,  $r = -.03$  (non-sig); for current belief and current happiness,  $r = .06$  (non-sig). Therefore, contrary to hypothesis and RET, general marital expectation (as measured on BAM), is not significantly associated with concurrent unhappiness / dissatisfaction, on the basis of either initial (retrospective) or current ratings.

Although current belief is not significantly correlated with current happiness, two of the BAM sub-scales (Catastrophisation and External Locus) are ( $r = -.53$ ,  $p < .001$  and  $r = -.25$ ,  $p < .05$  respectively), as shown in table 20. Initially rated Catastrophisation and External Locus are also correlated with both initial satisfaction ( $r = -.29$ ,  $p < .05$  and  $r = -.24$ ,  $p < .05$ ) and later happiness ( $r = -.42$  and  $r = -.40$ ,  $P < .001$ ). Thus, the initial tendency for spouses to make catastrophies out of minor marital difficulties, and to feel powerless to influence them, was associated with their initial and later unhappiness. This finding is in line with RET.

While Catastrophisation and External Locus maintain a significant negative association with happiness, the correlations between other belief scales and concurrent satisfaction / happiness are positive and increase through

marriage. For Morality and concurrent satisfaction / happiness,  $r$  increases from .27 to .33 ( $p < .01$ ); for Uniqueness,  $r$  increases from .01 to .37 ( $p < .001$ ); for Altruism,  $r$  increases from .12 to .39 ( $p < .001$ ) and, for Dependence,  $r$  increases from .18 to .37 ( $p < .001$ ). Thus, it appears that happier individuals expected higher levels of morality, uniqueness, altruism and emotional dependence from themselves and their partners, compared with unhappy individuals.

These associations seem to contradict RET, which predicts that high ('irrational') expectations lead to unhappiness, not happiness. However, it must be remembered that, on average, current beliefs (68% of scores between 363+56) were found to be significantly lower than initial beliefs (68% of scores between 422+72); see table 19. That is, high current beliefs were not extreme or 'irrational' as defined by RET, simply high within a moderate range, compared with the range of higher initial beliefs. Therefore, over years of married life, marital expectations appear to have dropped to a more moderate level and, within that moderate range, happy spouses valued higher levels of morality, uniqueness, altruism and emotional dependence than unhappy spouses.

This multi-dimensionality of marital belief confirms the need to examine sub-scale scores as well as, perhaps instead of, full-scale scores, just as for irrationality in the study context. It also exposes the inadequacy of the simple RET prediction that high marital expectations generally cause unhappiness. Indeed, the present results yield a non-significant linear relationship between belief and happiness overall, which masks differential subscale effects, such that happy spouses were less likely to exaggerate marital difficulties, and felt powerless when confronted by them, compared

with unhappy spouses. Eventually, happy spouses also expected higher levels of morality, uniqueness, altruism, and emotional dependence in their relationships than unhappy spouses.

#### 4.2.3 Marital belief versus dissonance

It is evident from table 21 that dissonance is significantly associated with unhappiness, in contrast with the non-significant association between full-scale belief and unhappiness. Initial and current dissonance bear moderate and strong negative correlations with initial satisfaction and current happiness respectively ( $r = -.39$  and  $-.79$ ,  $p < .001$ ). Furthermore, these correlations are significantly stronger than the corresponding correlations for the belief full-scales ( $z = 16.2$  and  $45.6$  respectively,  $p < .001$ ), applying Fisher's r-to-z transformation. Therefore, as predicted, the evidence is convincing that dissonance is more strongly associated with concurrent marital unhappiness / dissatisfaction than the belief full-scale.

It is conspicuous in table 21 that 9 of the 10 dissonance sub-scales correlate significantly and negatively with concurrent happiness / satisfaction, compared with only 2 of the 10 belief sub-scales (Catastrophisation and External Locus), as indicated in table 20. Aside from the External Locus sub-scale, for which content may warrant some modification, current dissonance sub-scales are all negatively correlated with current happiness ( $r = -.25$ ,  $p < .05$  to  $r = -.83$ ,  $p < .001$ ). Similarly, correlations between the initial dissonance sub-scales and initial satisfaction are negative, 8 of the 10 significant ( $r = -.13$ , non-sig to  $r = -.53$ ,  $p < .001$ ).

**TABLE 21**

**Initial dissonance scales: Internal consistencies and correlations with initial satisfaction, current happiness and sex**

(N = 87)

Initial Dissonance Scale	Internal Consistency	Initial Satisfaction	Current Happiness	Sex
1. Approval	.91	-.27**	-.35***	-.39***
2. Performance	.85	-.25*	-.16	-.25*
3. Morality	.82	-.18	-.27**	-.20
4. Catastrophisation	.76	-.13	-.46***	-.03
5. Uniqueness	.81	-.39***	-.53***	-.23*
6. Altruism	.82	-.39***	-.45***	-.26*
7. Avoidance	.79	-.24*	-.25*	-.25*
8. Dependence	.92	-.38***	-.44***	-.25*
9. External Locus	.84	.11	-.13	.04
10. Ideality	.72	-.60***	-.48***	-.16
Full Scale (Di)	.92	-.39***	-.52***	-.28**
Attrib Dissonance (ADi)	.90	-.46***	-.55***	-.32**

**Current dissonance scales: Internal consistencies and correlations with current satisfaction, current happiness and sex**

(N = 88)

Current Dissonance Scale	Internal Consistency	Current Satisfaction	Current Happiness	Sex
1. Approval	.93	-.66***	-.70***	-.23*
2. Performance	.86	-.34**	-.38***	-.08
3. Morality	.81	-.69***	-.70***	-.14
4. Catastrophisation	.79	-.15	-.26*	.08
5. Uniqueness	.82	-.67***	-.67***	-.14
6. Altruism	.83	-.77***	-.77***	-.02
7. Avoidance	.76	-.24*	-.25*	-.13
8. Dependence	.81	-.66***	-.68***	-.19
9. External Locus	.80	.13	.03	.08
10. Ideality	.73	-.81***	-.83***	-.17
Full Scale (Dc)	.91	-.74***	-.79***	-.15
Attrib Dissonance (ADc)	.93	-.78***	-.82***	-.16

\* p<.05    \*\* p<.01    \*\*\* p<.001    (two-tailed probabilities)

The consistency and strength of the dissonance/ happiness associations across different dimensions of marital expectation are in contrast with the highly variable associations between the belief scales and happiness. The consistent sub-scale contributions to total dissonance and the associated unhappiness are also in keeping with the additive nature of dissonance according to CDT. These findings support the assertion that 'irrational belief' is more appropriately defined and measured as dissonance against a theoretical backdrop of CDT, than as the traditional extreme belief in RET.

In examining longitudinal effects, it is evident from table 20 that initial belief is associated with later (i.e. current) happiness ( $r=-.29$ ,  $p<.01$ ). Table 21 indicates that initial dissonance also correlates significantly with later happiness ( $r=-.52$ ,  $p<.001$ ) and again, significantly more strongly ( $Z=11.8$ ,  $p<.001$ ), applying Fisher's r-to-z transformation. To the extent that retrospective initial ratings can be regarded as reliable, it appears that while extreme initial belief predicts later unhappiness, dissonance does so significantly better. This finding supports clinical evidence that unmet marital expectations (that is, dissonance) often have lasting effects on happiness (Hartin, 1993; Sager, 1976). Kurdek (1991) found that extreme marital beliefs, on the RBI (Epstein & Eidelson, 1981), were positively related to ideal / actual relationship discrepancy. He also found them to be 'relatively enduring predispositions' associated with marital dissolution, in a 5 year longitudinal study (Kurdek, 1993).

Since current dissonance ( $D_c$ ) is defined as the discrepancy between current belief ( $B_c$ ) and reality ( $R_c$ ), that is  $D_c = B_c - R_c$ , it could appear that the strong correlation between dissonance and happiness  $H$  ( $r=-.79$ ,  $p<.001$ ) is a definitional artifact of the strong  $R_c/H$  correlation ( $r=.83$ ,  $p<.001$ ).

A strong Rc/H correlation is not problematic per se. Indeed, it is expected, since it is well documented that happy spouses rate their marital lot (perceived realities) highly (Epstein et al. 1987; Fitzpatrick, 1988; Spanier, 1976). Mathematically, however, a strong Rc/H correlation does not necessarily imply a strong Dc/H correlation, just because  $Dc = Bc - Rc$ . For any given set of Rc and H scores (highly correlated), the Dc/H correlation could be positive, negative, large or small, depending upon the Bc scores and the intercorrelations of Bc, Rc, Dc and H.

To demonstrate these possibilities, 3 hypothetical data sets (N=20) of B, R, D and H scores were generated (see appendix W) with R and H scores common and highly correlated ( $r=.82$ ) for each set. By choosing different B scores (with corresponding D scores =  $B-R$ ) in each set, three different D/H correlations were found:  $r=-.79$  for set 1,  $r=.80$  for set 2 and  $r=.04$  for set 3, illustrating all of the possibilities proposed above. The matrix of intercorrelations for set 1 is similar to that in table 22 for the obtained experimental data, both current and initial.

Another finding which mitigates against the possible artificiality of the strong Dc/H correlation is that Dc contributes substantially to the explanation of H after the effect of Rc is removed, as indicated by the first-order partial correlation between Dc and H ( $r_{H,1}=-.62, p<.001$ ).

The first-order partial correlation between initial dissonance (Di) and initial satisfaction (Si) ( $r_{Si,1}=-.41, p<.001$ ) is also substantial, after the effect of Ri is removed. Furthermore, while recognising the fallibility of retrospective data, table 22 shows that initial dissonance (Di) significantly predicts later (current) happiness H ( $r=-.52, p<.001$ ), unlike initial reality (Ri) ( $r=.19, \text{non-sig}$ ).



**TABLE 22**

**Intercorrelations of initially rated belief, reality, dissonance and satisfaction**

(N = 87)

	Bi	Ri	Di
Ri	.60***		
Di	.53***	-.11	
Si	-.03	.44***	-.39***
H	-.29**	.19	-.52***

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probabilities)

**Intercorrelations of currently rated belief, reality, dissonance and happiness**

(N = 88)

	Bc	Rc	Dc
Rc	.44***		
Dc	.42***	-.63***	
H	.06	.83***	-.79***

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probabilities)

**Note:**

Bi = marital belief (*initial*)  
 Ri = perceived marital reality (*initial*)  
 Di = marital dissonance (*initial*) = Bi-Ri  
 Si = marital satisfaction (*initial*)

Bc = marital belief (*current*)  
 Rc = perceived marital reality (*current*)  
 Dc = marital dissonance (*current*) = Bc-Rc  
 H = marital happiness (*current*)

For all of the reasons advanced above, the high Dc/H correlation cannot be dismissed merely as a definitional artifact of the high Rc/H correlation. Finally, it should be remembered that the strong D/H correlation was predicted, along with related findings (e.g. the post-decision dissonance effect and the additive property of dissonance) from a well established theoretical position (CDT). Essentially, RET also predicts that dissonance associated with unmet marital beliefs is likely to cause unhappiness.

#### 4.2.4 Attributional dissonance & happiness

The beliefs and realities of 44 BAM items, which are specifically partner focused, amount to expectations and quasi attributions respectively; see appendix U. For example, BAM item 72 focuses upon a partner's promptness in fulfilling certain duties (e.g. regarding chores and bills). The belief (B) and reality (R) are as follows, accompanied by hypothetical ratings.

*B...My partner should be prompt.....( 5 ) i.e. 'mostly'*

*R...My partner is prompt.....( 1 ) i.e. 'rarely'*

The respondent's dissonance, arising from his / her partner's impromptness (relative to expectations), is quantified simply as  $B-R = 4$ .

The sum of such differences for all 44 attributional items, provides a measure of Attributional Dissonance (AD), which is directly related to the notion of 'responsibility attribution' employed by Fincham & Bradbury (1987b), as argued in section 2.7.3.

As shown in table 21, current Attributional Dissonance (ADc) correlates strongly with current marital happiness H ( $r=-.82, p<.001$ ), in keeping with the recent and consistent finding that conceptually related 'responsibility

attribution' for marital problems and negative partner behaviours is firmly associated with both concurrent and later marital dissatisfaction (Fincham & Bradbury, 1987b, 1993).

Considering couples as cases, it is further apparent from table 23, that current Attributional Dissonance (ADc) for husbands and wives correlates highly with both their own and their partners' current happiness, the 4 correlations ranging from  $-.68$  to  $-.83$  ( $p < .001$ ). Thus, after years of married experience, spouses who perceived their partners to be falling short of expectations (regarding honesty, altruism, financial management and sexual performance) were distinctly unhappy, as were their partners. Husbands were about as likely to experience Attributional Dissonance as wives since the sex effect ( $r = -.16$ ) is non-significant.

Table 21 also indicates that initial Attributional Dissonance (ADi) is negatively correlated with initial satisfaction (Si) ( $r = -.46$ ,  $p < .001$ ). Spouses seemed to experience AD from the very beginning of marriage, wives marginally more so than husbands ( $r = -.32$ ,  $p < .01$ ). The correlation of female AD with the satisfaction of the couple ( $r = -.47$  with Sm,  $p < .001$ ;  $r = -.60$  with Sf,  $p < .001$ ) is only marginally stronger than for male AD ( $r = -.30$  with Sm, non-sig;  $r = -.43$  with Sf,  $p < .01$ ), as table 23 shows.

From the retrospective data, the present study provides the opportunity for cautious consideration of possible longitudinal effects of AD. For married individuals, AD experienced at the beginning of marriage tended to persist, as indicated by the high correlation between initial and current AD ( $r = .73$ ,  $p < .001$ ). Table 21 also suggests that initial AD predicts later (current) unhappiness ( $r = -.55$ ,  $p < .001$ ).

**TABLE 23**

**Correlations of attributional dissonance with current happiness (H) and initial satisfaction (S) of self and partner**

(N = 39 couples for initial data)

(N = 40 couples for current data)

Attributional Dissonance (AD)		Current Happiness		Initial Satisfaction	
		Hm	Hf	Sm	Sf
I N I T I A L	ADm	-.56***	-.44**	-.30	-.43**
	ADf	-.37*	-.58***	-.47***	-.60***
C U R R E N T	ADm	-.83***	-.68***		
	ADf	-.70***	-.82***		

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probabilities)

Note:

m = male,    f = female

Considering couples as cases, table 23 provides no evidence of a sex difference in the relationship between initial AD and later (current) happiness, since the 4 correlations range from  $r=-.37$  ( $p<.05$ ) to  $r=-.58$  ( $p<.001$ ). This finding supports the latest finding of Fincham & Bradbury (1993), contrary to an earlier one (Fincham & Bradbury, 1987b) which did produce a sex difference. Fincham & Bradbury (1987b) put forward the causal hypothesis that relationship expectations give rise to negative attributions which, in turn, cause marital dissatisfaction. Results from the present investigation tend to be consistent with this model, which constitutes one source of marital dysfunction.

#### 4.2.5 Self attributional bias and happiness

As shown in appendix V, 50 of the BAM items exist in 25 pairs, each pair consisting of a reality seeking self-assessment (Rs) from a spouse, such as item 42:

Rs ... *'I satisfy my partner sexually'*

and the corresponding partner's rating (Rp) seeking the partner's assessment of the same event or behaviour, in this case, item 52:

Rp ... *'My partner satisfies me sexually'*

Because each couple was treated as a case for this analysis, it was decided to number the husband's BAM ratings from 1 to 100, the wife's corresponding BAM ratings from 101 to 200, to distinguish the two. Self Attributional Bias (SAB) is defined in the following way; sample reality ratings (R) are considered for a husband and wife.

### Husband

42. *R...I satisfy my partner  
sexually.....( 1 )*
52. *R...My partner satisfies  
me sexually....( 4 )*

### Wife

142. *R...I satisfy my partner  
sexually.....( 5 )*
152. *R...My partner satisfies  
me sexually....( 3 )*

The husband's self attributional bias (SAB) for his sexual performance is defined as (his self assessment - his wife's assessment).

$$= (R_{12} - R_{112}) = (1 - 3) = -2$$

Negative SAB scores reflect under self-assessment relative to the partner's assessment (or, over attribution by the partner).

The wife's self attributional bias (SAB) for her sexual performance is defined as (her self assessment - her husband's assessment).

$$= (R_{111} - R_{11}) = (5 - 4) = 1$$

Positive SAB scores reflect over self-assessment relative to the partner's assessment (or, under attribution by the partner).

Five catastrophisation SAB items originally generated negative item-total correlations. As discussed earlier in section 4.2.3, non-catastrophisation was found to be valued by happy spouses, like the other 20 SAB behaviours. Therefore, it was decided to score the 5 catastrophisation items in reverse to reflect non-catastrophisation, so that the full SAB scale would comprise items about valued marital behaviours, that is, behaviours which are typically seen by spouses as 'good things' (Thompson & Kelley, 1981). The reversed scoring also improved the SAB scale's internal consistency.

As tables 24 and 25 indicate, the 25-item SAB scale has adequate internal

consistency across the four conditions, male / female by initial / current (mean  $\alpha$ =.76; range=.67 to .79), with only one negative item-total correlation out of one hundred.

The 5-item SAB subscales for 'performance', 'non-catastrophisation' and 'altruism' also have suitably consistent scale properties over the four conditions. Item-total correlations are all positive, if low, and alpha values are low but generally adequate (mean  $\alpha$ =.60, range=.34 to .83). The low alpha values are partially explicable in terms of the diversity of content in the SAB scale, particularly for the Performance and Non-Catastrophisation sub-scales, as is evident below.

For the 3 SAB sub-scales, positive scores reflect the following self attributional biases of, say, a husband in comparison with his wife's perception. Thus, he perceives that,

#### Performance

he is tidy (*more often than she thinks*).

he is financially competent (*more often than she thinks*).

he satisfies her sexually (*more often than she thinks*).

he is prompt with chores and bills (*more often than she thinks*).

he impresses visitors (*more often than she thinks*).

#### Non-Catastrophisation

declining her sex is not general rejection (*as often as she thinks*).

disputing her opinion is not general rejection (*as often as she thinks*).

rejecting behaviour is not general rejection (*as often as she thinks*).

his mistakes are minor (*more often than she thinks*).

his glance at another woman is harmless (*more often than she thinks*).

**TABLE 24**

**Correlations of female self attribution bias SAB with current happiness (H) and initial satisfaction (S) of self and partner**

(N = 39 couples for initial data)  
(N = 40 couples for current data)

	Female SAB	(α) Internal Consistency	Current Happiness		Initial Satisfaction	
			Hm	Hf	Sm	Sf
I N I T I A L	Performance	.59	-.32*	-.17	-.63***	-.14
	Non-catast	.62	-.16	-.28	-.14	.32*
	Altruism	.72	-.53***	-.53***	-.31	-.25
	Full Scale	.79	-.51***	-.42**	-.50***	.02
C U R R E N T	Performance	.70	-.63***	-.50***		
	Non-catast	.48	-.04	.15		
	Altruism	.83	-.68***	-.57***		
	Full Scale	.79	-.53***	-.31*		

\* p<.05    \*\* p<.01    \*\*\* p<.001    (two-tailed probabilities)

Note: Hm, Hf = happiness of male, female partner respectively  
Sm, Sf = frequency of male, female satisfaction with partner  
α = Cronbach's alpha



TABLE 25

Correlations of male self attribution bias (SAB) with current happiness (H) and initial satisfaction (S) of self and partner

(N = 39 couples for initial data)  
(N = 40 couples for current data)

	Male SAB	(α) Internal Consistency	Current Happiness		Initial Satisfaction	
			Hm	Hf	Sm	Sf
I N I T I A L	Performance	.39	-.08	.11	.01	-.01
	Non-catast	.71	-.12	-.20	.18	-.38*
	Altruism	.57	.10	-.08	-.09	-.19
	Full Scale	.67	.08	-.02	.21	-.22
C U R R E N T	Performance	.34	-.05	-.15		
	Non-catast	.66	-.04	-.15		
	Altruism	.64	.13	-.19		
	Full Scale	.77	.11	-.18		

\* p<.05    \*\* p<.01    \*\*\* p<.001 (two-tailed probabilities)

Note: Hm, Hf = happiness of male, female partner respectively  
Sm, Sf = frequency of male, female satisfaction with partner  
α = Cronbach's alpha

## Altruism

he puts her before friends (*more often than she thinks*).

he puts her before his own interests (*more often than she thinks*).

he changes for her (*more often than she thinks*).

he puts their marriage first (*more often than she thinks*).

he puts himself about for her (*more often than she thinks*).

Table 24 reveals a strong relationship between female SAB and unhappiness of the couple. The current SAB of wives is negatively associated with both their own happiness (Hf) ( $r = -.31$ ,  $p < .05$ ) and that of their husbands (Hm) ( $r = -.53$ ,  $p < .001$ ), but significantly more so with Hm than Hf ( $Z = 5.0$ ,  $p < .001$ ) applying Fisher's r-to-z transformation. The association is particularly strong for altruistic SAB ( $r = -.68$  with Hm,  $p < .001$ ;  $r = -.57$  with Hf,  $p < .001$ ) and performance SAB ( $r = -.63$  with Hm,  $p < .001$ ;  $r = -.50$  with Hf,  $p < .001$ ), but non-significant for non-catastrophisation SAB ( $r = -.04$  with Hm,  $r = .15$  with Hf).

As is evident in table 24, the SAB (both initial and current) of wives is generally negatively correlated with current happiness of self (Hf) and husband (Hm), and initial satisfaction of self (Sf) and husband (Sm). 21 of the 24 correlations are negative. It is especially noteworthy that wives' initial SAB (full-scale) is substantially and negatively correlated with their husbands' initial satisfaction, Sm ( $r = -.50$ ,  $p < .001$ ), but not their own, Sf ( $r = .02$ , non-significant). The pattern is particularly strong for wives' performance SAB, which correlates significantly with Sm ( $r = -.63$ ,  $p < .001$ ), but not with Sf ( $r = -.14$ , non-significant).

Initial SAB is also negatively related to later (current) happiness of

self, Hf ( $r=-.42$ ,  $p<.01$ ) as well as that of husband, Hm ( $r=-.51$ ,  $p<.001$ ), particularly for altruism SAB ( $r=-.53$ ,  $p<.001$ ). In short, wives' initial SAB appears to have predicted the later unhappiness of both partners.

Thus, during the early part of marriage, wives' SAB (particularly for altruism and performance) was firmly associated with their husbands' initial dissatisfaction, but not their own. Later, wives' SAB was also associated with their own unhappiness, if marginally less so than their husbands'.

Tables 24 and 25 present a striking contrast. The former, for wives' SAB, is as striking for its abundance of significant correlations as the latter, for husbands' SAB, is for its absence of them. All but one of the 24 correlations in table 25 are closer to zero than significance. Generally then, husbands' relative over-estimates of their own valued behaviours (both initial and current) were not significantly associated with their own or their wives' unhappiness.

Overall, the current SABs for husbands (mean SAB = 1.9; s.d.= 15.1) and wives (mean SAB = 3.7; s.d.= 15.9) did not differ significantly ( $t=.48$ ,  $df=39$ ). The SAB score of any particular spouse can be considered to have reflected SAB behaviours generally, considering the satisfactory internal consistency of the scale, as reported above. Further, the SAB of husbands is inversely related to that of wives ( $r=-.62$ ,  $p<.001$ ), indicating that, when one was high the other tended to be low. While the partner displaying greater SAB was just as likely to be the wife or husband, the associations of SAB with unhappiness are markedly different for the two. Whereas husbands' SAB was unrelated to unhappiness, wives' SAB was highly related,

particularly for altruism and performance.

The above results on self attributional bias and its relationship with marital unhappiness can be linked coherently, albeit tentatively, with certain established findings from marriage research and clinical evidence, as a possible paradigm for one source of marital discord. Since women have been found to be more concerned about attachment, intimacy and caring than men (Fitzpatrick, 1988; Gray, 1990), it is not surprising that wives in the present study entered marriage with higher expectations than their husbands, particularly for approval and emotional dependence, as reported in section 4.2.2. They also experienced more dissonance, both general and attributional.

It is possible that, perceiving their own marital input as greater than that recognised by their husbands, wives may have pressed their husbands for more recognition, perhaps reciprocation as well, resulting in their husbands' initial retreat and dissatisfaction. Noller (1987) reports that wives more commonly feel unappreciated by their spouses than do husbands. The demand by dissatisfied wives for more attention, acceptance and emotional expression from their husbands is well documented (Christensen, 1988; Gray, 1990; Guthrie & Snyder, 1988). Such demands may well have initiated a 'demand-withdraw' pattern, widely observed for distressed couples (Noller, 1988), whereby wives demand, husbands withdraw, wives demand more strongly, in an escalating, maladaptive cycle of conflict.

Feeling unappreciated for marital input seems to have mattered much less to husbands than to wives in this study, considering the non-significant association of male SAB with the unhappiness of the couple. Alternatively,

husbands may have been unaware that their marital contributions were being under-estimated by their wives, although the signs of under-attribution would generally be difficult to miss, even for a most unintuitive male.

#### 4.2.6. Dissonance as a threshold predictor

In accordance with the hypothesis that high dissonance scores on the BAM scales are likely to identify unhappily married individuals, spouses were defined at risk if they scored above a threshold value for dissonance on one or more of the 10 BAM scales. 'Happy' spouses were defined to be those who rated themselves as 'more than moderately' happy ( $>3$ ) on the 7-point scale of happiness, which ranges from '0' (not at all happy) to '6' (completely happy). Spouses were considered 'unhappy' if their self-ratings fell within the range, 'not at all' to 'moderately' happy ( $\leq 3$ ). Although an upper limit of 'moderate' happiness (rating 3) might seem too high for the 'unhappiness' category, it was adopted to allow for the known tendency of spouses to over-rate their own happiness (Fitzpatrick, 1988).

Current BAM scale dissonance scores were transformed to Z-scores, which were compared with a range of standardised threshold values. For each threshold value, the 88 spouses were categorised in accordance with predicted by actual outcomes. As shown in table 26, the threshold value,  $Z = 1.2$ , generated an optimum hit rate of 79.4%. That is, 27 'unhappy' spouses were correctly identified from 34 who were defined 'at risk'. The differentiation between 'happy' and 'unhappy' spouses is highly significant ( $\chi^2 = 67.0$ ,  $p < .00001$ ). When 'attributional dissonance' was used as a single predictor of unhappiness, a threshold of  $Z = 0.4$  gave an

TABLE 26

Contingency tables of 'risk' by 'happiness', for 2 criteria of 'risk' (r1 and r2) derived from 'Beliefs About Marriage' (BAM)

(N = 88 subjects)

Dissonance  
(r1) Threshold:  $Z > 1.2$

Attributional dissonance  
(r2) Threshold:  $Z > .4$

		HAPPINESS		
		No	Yes	
RISK	No	3	51	54
	Yes	27	7	34
		30	58	88

		HAPPINESS		
		No	Yes	
RISK	No	3	57	60
	Yes	27	1	28
		30	58	88

Hit Rate =  $27/34 = 79.4 \%$

$\chi^2 = 67.0$  (df=1, p=.00000)

Hit Rate =  $27/28 = 96.4 \%$

$\chi^2 = 47.4$  (df=1, p=.00000)

Note:

1. 'Risk' (r1) requires a z-score  $> 1.2$  (threshold) on at least one of the 10 BAM dissonance sub-scales
2. 'Risk' (r2) requires a z-score  $> 0.4$  (threshold) on the BAM sub-scale for attributional dissonance (AD)
3. 'Happiness' is defined by ratings of 4 to 6 ('fairly' to 'completely' happy)
4. 'Unhappiness' is defined by ratings of 0 to 3 ('not at all' happy to 'moderately' happy)

optimum hit rate of 96.4%. Using this threshold, 27 'unhappy' spouses were correctly identified from 28 who were 'at risk'. The distinction between 'happy' and 'unhappy' spouses is highly significant ( $X^2 = 47.4, p < .00001$ ).

As hypothesised, the measures of general and attributional dissonance used in the present study, were highly effective in identifying unhappy spouses, further supporting the use of dissonance as a measure of irrationality, and the use of thresholds for identification of couples at risk.

#### 4.2.7 Perceived Reality and happiness

How spouses perceive their marital lot, that is, their realities (R), is known to be associated with their self-rated happiness or satisfaction (Epstein et al., 1987; Fitzpatrick, 1988; Russell & Wells, 1994; Spanier, 1976). Table 27 shows that 7 of the 10 initial reality scales bear strong positive correlations with initial satisfaction. Spouses tended to be more satisfied with their partners when they experienced relatively high levels of approval ( $r = .42, p < .001$ ), performance ( $r = .31, p < .01$ ), morality ( $r = .43, p < .001$ ), uniqueness ( $r = .41, p < .001$ ), altruism ( $r = .51, p < .001$ ), dependence ( $r = .46, p < .001$ ) and ideality ( $r = .74, p < .001$ ). However, Catastrophisation and External Locus of control (in regard to marital difficulties) are negatively associated with initial satisfaction ( $r = -.22, p < .05$  and  $r = -.35, p < .001$  respectively). Therefore, those who catastrophised and perceived themselves as powerless in regard to marital difficulties tended to be dissatisfied as well. Current data generate similar associations between reality scales and happiness and correlations are generally stronger, as well as being more reliable because of the current status of the data.

TABLE 27

Initial reality scales: Internal consistencies and correlations with initial satisfaction, current happiness and sex

(N = 87 for initial data)

(N = 88 for current data)

Initial Reality Scale	Internal Consistency	Initial Satisfaction	Current Happiness	Sex
1. Approval	.86	.42***	.26*	.05
2. Performance	.60	.31**	.07	-.10
3. Morality	.70	.43***	.16	-.11
4. Catastrophisation	.79	-.22*	.05	-.06
5. Uniqueness	.67	.41***	.23*	-.13
6. Altruism	.80	.51***	.36***	-.02
7. Avoidance	.80	.14	.04	.11
8. Dependence	.78	.46***	.21*	-.30**
9. External Locus	.90	-.35***	-.33***	-.32**
10. Ideality	.79	.74***	.39***	-.03
Full Scale (Ri)	.91	.44***	.19	-.14

Current reality scales: Internal consistencies and correlations with current satisfaction, current happiness and sex

Current Reality Scale	Internal Consistency	Current Satisfaction	Current Happiness	Sex
1. Approval	.91	.71***	.76***	.13
2. Performance	.61	.47***	.49***	-.02
3. Morality	.85	.82***	.81***	-.01
4. Catastrophisation	.76	-.47***	-.41***	.04
5. Uniqueness	.87	.79***	.81***	.01
6. Altruism	.91	.84***	.81***	.04
7. Avoidance	.79	.26*	.17	.31**
8. Dependence	.87	.85***	.81***	-.01
9. External Locus	.87	-.29**	-.33***	-.17
10. Ideality	.90	.91***	.89***	.09
Full Scale (Rc)	.95	.85***	.83***	.06
PMQS Scale	.97	.88***	.86***	.09

\* p<.05    \*\* p<.01    \*\*\* p<.001    (two-tailed probabilities)

PMQS = Perceived Marital Quality Scale (= Rc, scales 4 & 9 reverse scored)



Thus, happy spouses experienced all of the realities of BAM except for Catastrophisation and External locus, for which they experienced the opposite. Avoidance was about equally likely to be practised by happy spouses as unhappy spouses. Perhaps this reflects a greater readiness of happy couples to compromise some of their rights, needs and wishes some of the time, as a mutual give-and-take, instead of unconditionally asserting their rights in all matters all of the time.

The full reality scale (Rc) is highly correlated with happiness ( $r=.83$ ,  $p<.001$ ), despite including the two negatively correlated sub-scales for catastrophisation and external Locus. Internal consistency for Rc is high ( $\alpha = .95$ ), despite the 20 negative item-total correlatons out of 100, 17 from the Catastrophisation and External Locus subscales. Thus, when these 2 subscales are scored in reverse, all 10 sub-scales correlate positively with happiness. This adjusted reality scale amounts to a perceived marital quality scale (PMQS), which correlates more highly with happiness ( $r=.86$ ,  $p<.001$ ) and has higher internal consistency ( $\alpha = .97$ ), with only 3 negative item-total correlations out of 100.

Table 27 reveals that Sex is not significantly correlated with either Rc ( $r=.06$ , non-sig) or the PMQS ( $r=.09$ , non-sig), indicating that, overall, husbands and wives were equally likely to experience the BAM realities.

In general, it is clearly apparent that happy couples actually experience higher levels of approval, performance, moral standards, non-catastrophisation, uniqueness, altruism, emotional interdependence, personal control (of marital problems) and ideality than unhappy couples. It seems that these facets of healthy marriage relationships have not gone out of

fashion, a finding which fits clinical experience. Lazarus (1985, p.32) finds that happy marriages include '75-80 percent togetherness', still leaving sufficient separateness to permit individual growth and essential privacy. Matthews (1988, p.44) makes a similar observation:

*'In long and strong marriages where constancy has firmly taken hold, partners achieve interdependence. They help each other, draw on each other's strengths, and feel a sense of mutual obligation - yet they leave each other enough room to do and pursue things on their own'.*

As a measure of marital quality, the PMQS is similar in essence to other commonly used self-report measures, such as the Dyadic Adjustment Scale (Spanier, 1976), which includes content much like that of the PMQS, but less of it, and similarly asks respondents to rate their perceptions of their marital realities.

## 5. DISCUSSION

### 5.1 STUDY

Results of the present study support the hypothesis that irrational beliefs about study are better assessed by a study-specific test, such as the BAS, than general tests, such as the IBT, as predicted by Anastasi (1988) and Bandura (1969) for attitude measures generally and by Holtzworth-Munroe & Stuart (1994) for irrational belief tests.

While the sub-scale clusters of BAS are somewhat tenuous, forming late and combining soon after on a rescaled distance dimension, it is argued that this is at least partly due to their diversity of content. The same reason can be advanced as a partial explanation for their low, but mostly adequate internal consistencies. Notwithstanding their fragility, the BAS clusters correspond with theoretical sub-scales in theme and item content, giving added weight to their structure.

More research is required to clarify further the structure of the clustered sub-scales and improve their internal consistency. One particular problem which also needs to be addressed is the separateness of the Performance sub-scale from the rest of the BAS scales. Although this anomaly has not been found previously for general measures of irrational belief, sub-scale effects and intercorrelations have not always been reported. As argued earlier and, as demonstrated in the marriage context, this problem (as well as others) could be resolved by defining irrational belief in terms of the discrepancy between belief and reality instead of extreme belief.

Although the effects of greater cognitive purity and reduced item redundancy of the BAS were not explicitly assessed, these characteristics ensured that the BAS really does measure cognition, without the emotional and behavioural impurities of many other tests (e.g. the IBT) and, that the clustered sub-scales, despite their fragility, cannot be dismissed as an artifact of item redundancy.

Threshold analysis was more effective than correlation analysis in revealing the true strength of the association between irrationality (extreme belief) and dysfunction. The present results vindicate the use of high scores on separate BAS dimensions of irrationality, rather than correlation using the full scale.

The greater effectiveness of the separate scales in identifying students at risk, compared with the global full-scale, confirms the need for recognising the multi-dimensionality of irrationality. Irrational beliefs about study can be held on one dimension (e.g. *Ideality*), without necessarily being held on others (e.g. *Approval*, *Worry*, *External Locus*). Neither is irrationality in study necessarily generalised across other contexts (e.g. marriage, sport, work). In addition, irrationality on one dimension in one context tends to be a sufficient condition for dysfunction in that context, as proposed by Dryden (1985).

Attending to both the context-specificity and the multi-dimensionality of irrational belief has the immediate therapeutic advantage that specific irrational beliefs can be isolated for cognitive restructuring. Test items themselves can be used by the counsellor as a basis for targeting directly a client's problematic beliefs.

The ability of BAS to identify a group of students at risk of emotional and behavioural dysfunction is consistent with the basic RET tenet, that extreme dogmatic beliefs cause maladaptive emotion and behaviour. While the present experimental design could not infer causation, it is worth recalling that BAS was completed just prior to the beginning of the 1989 academic year. For a pre-course, non-intellective test to identify students at risk, with a sufficiently high hit rate for practical use in intervention, constitutes a promising advance over the traditional, general tests of irrational belief, such as the IBT. Furthermore, the predictive power of BAS cannot be interpreted as an artifact of common variance due to common content shared by the BAS scales and the independent variables, since behavioural criteria of procrastination, perseverance and performance were used in addition to the usual self-report measures of emotionality.

The predictive power of BAS stands to improve even further, should BAS be redesigned following the BAM format. As demonstrated in the marriage context, full-scale dissonance (B-R) was found to be highly correlated with marital dissatisfaction, unlike full-scale belief (B). While retaining their study-specific content, BAS items could be reframed to provide ratings of both belief (B) and reality (R), as for the BAM, providing a similar measure of dissonance.

At the same time, it would be desirable to express BAS in the present rather than the future tense, making it appropriate for on-course instead of pre-course administration. Current expectations from respondents are also likely to be more reliable than projected ones.

Requiring a negative affect rating corresponding to each B and R rating

would add a further dimension to a revised BAS for both research and therapeutic application. For each item, BAS could require students to give separate ratings indicating how things 'should' be (B), how they 'actually are', or appear to be, (R) and the negative affect experienced when things are worse than they should be, that is, when dissonance (B-R) is high.

The relationship between dissonance (B-R) and the associated negative affect would be of fundamental interest to both RET and CDT. The idea of obtaining from a student a separate, subjective rating of affective reaction to a specific, unmet expectation about study warrants further investigation. Specific negative affect may prove more useful in research than general measures of emotionality (e.g. self-reported anxiety and depression), particularly considering recent research on cognition/affect specificity (Higgins, 1987; Ingram, Kendall, Smith, Donnell & Ronan, 1987; Vasey & Borkovec, 1992). In the therapeutic setting, particular beliefs associated with high dissonance as well as high negative affect would be especially targeted by a counsellor for cognitive restructuring.

Procrastination (particularly observed procrastination) emerged as a highly important behavioural variable in distinguishing between successful and unsuccessful students. This finding is consistent with Ellis' & Knaus' (1977) claim that procrastination stems from irrational belief and has 'enormous sabotaging effects' on students. In the present investigation, 'irrational' students were observed by lecturers to procrastinate almost 'half of the time' compared with the 'rational' students, who did so only 'rarely'. The 'irrational' students also scored aggregates which, on average, were only half of those of the 'rational' students.

From the group of 'irrational' students, those who ultimately succeeded, despite being at risk (i.e. the 'false alarms'), were 'rarely' observed to procrastinate, while the unsuccessful ones procrastinated more than 'half of the time'. Overall then, observed procrastination was strongly associated with non-perseverance, low GPA and low aggregate. It was the best single predictor of poor performance.

A new self-report test of procrastination, the HIP (How I Procrastinate) demonstrated high internal consistency and satisfactory construct validity. Its test-retest reliability remains to be assessed. Results for the WIP (Why I Procrastinate) yielded clusters for '*fear of failure*' and '*low frustration tolerance*' representing the main reasons for procrastination, in keeping with Ellis' & Knaus' (1977) clinical evidence and supporting the factors found by Solomon & Rothblum (1984). The clusters are internally consistent, homogeneous in their separate themes and associated with different variables, confirming their different constructs and the need for different therapeutic approaches, as noted by Solomon & Rothblum.

## 5.2 MARRIAGE

Results of the present study indicate that the BAM is a promising self-report test which taps the major cognitive variables currently used in marriage research: extreme belief, attribution, self attributional bias, marital quality and marital happiness. It also generates a measure of dissonance which, as hypothesised, proved to be significantly better as a measure of irrationality in marriage than the traditional extreme belief.

To the extent that retrospective ratings can be trusted, the evidence indicates that the initial beliefs of spouses dropped significantly over the early years of marriage, supporting the clinical evidence (Dryden, 1985; Ellis & Harper, 1961; Hartin, 1977, 1993; Lazarus, 1985; Sager, 1976) that most couples enter marriage with unrealistically high expectations, which generally remain unfulfilled. This drop was hypothesised as a post-decision dissonance effect (Festinger, 1957), whereby spouses probably felt responsible for and committed to their marital decision and, therefore, automatically reduced their dissonance (B-R) by lowering their expectations (B) toward their perceived marital realities (R). Marital realities also fell during early years of marriage, probably reflecting the greater, but unsustainable, initial efforts of both partners to meet each other's unrealistic, initial, marital expectations.

Overall, results support the contention that irrational belief, defined to include dissonance in contemporary RET, is therefore more appropriately assessed by belief/reality discrepancy than by extreme belief in tests of irrational belief. The relationship of belief to marital dissatisfaction was highly variable across the 10 BAM sub-scales and stages of marriage (initial and current). Further contrary to RET was the finding that full-scale belief did not correlate significantly with dissatisfaction.

Unlike the belief scales, dissonance was significantly associated with unhappiness for 9 of the 10 subscales and, on the basis of current ratings, the full dissonance scale was highly associated with marital dissatisfaction, in strong support of RET. Thus, it appears that dissonance does the damage, not extreme belief per se, although the latter is likely to result in dissonance more frequently than low to moderate levels of belief.



Belief/reality discrepancy was found to be a more effective and appropriate basis of irrationality in RET than the traditional extreme belief. To CDT, discrepancy is fundamental. The present findings support the claim that CDT offers all that RET offers and more, theoretically and in practice. Clearly, the findings do not negate the enormous and valuable impact of RET on cognitive-behavioural psychology, but they do suggest that RET can be regarded as one of the many dissonance 'mini-theories', as Aronson (1992) proposes. In short, the present study supports the assertion that irrationality is better defined as dissonance against a theoretical background of CDT than as extreme belief from a background of RET.

Partner-focused dissonance (*attributional dissonance*) was marginally more strongly related to unhappiness than general dissonance. High scores for both dissonance and attributional dissonance were extremely successful in identifying unhappy spouses. If their memories can be relied upon, spouses experienced '*attributional dissonance*' (perceived partner shortcomings) from the very beginning of marriage. Initial '*attributional dissonance*' seemed to persist through marriage, remaining highly associated with the unhappiness of the couple.

When partners fell short of spouses' expectations, both parties suffered and the suffering may well have originated from initial attributions, consistent with the causal model advanced by Fincham & Bradbury (1987b), who propose that a spouse's extreme marital expectations give rise to negative attributions about partner behaviour, which subsequently lead to marital dissatisfaction. Hartin (1993, p.43) appears to refer to '*attributional dissonance*' when he describes the anger, frustration and confusion felt by spouses when their partners '*depart*' from the partly

conscious, partly unconscious, marital '*scripts*' prescribed for them.

Wives entered marriage with higher expectations than their husbands and experienced more dissonance, particularly in regard to their expectations of approval (from husbands), performance (by husbands), uniqueness (of their relationship) and emotional dependence (on husbands), in keeping with Noller's (1988) evidence for the typical demands of unhappy wives.

Wives' *self attributional bias* (SAB), that is, over-estimation of their own marital input relative to their husbands' perceptions, was strongly related to both their own and their husbands' unhappiness. This was particularly true in regard to their self-assessed altruism and marital performance. On the other hand, husbands' SAB was not significantly related to either their own or their wives' unhappiness. Since marriage was initially more important to wives, particularly their husbands' approval, it is likely that feeling under-valued by their husbands cut deeply, possibly resulting in retaliatory negative behaviour towards their husbands (Bradbury & Fincham, 1992; Floyd & Markman, 1983) and unhappiness for both. It appears that feeling under-rated was less important to husbands, or perhaps they were simply less aware of it. This relationship is particularly persuasive because SAB rests upon independent ratings by both partners about a common concept.

Spouses were happier when they experienced high levels of approval, performance, morality, uniqueness, altruism, dependence, ideality, non-catastrophisation and internal locus as perceived realities. This adjusted reality scale constitutes a 'perceived marital quality scale', the PMQS, which is internally consistent and correlates highly with happiness.

While BAM is much too long and demanding in its present form, a simple modification which omits retrospective ratings would render it far more manageable for respondents, by halving the completion time and simplifying instructions. A revised BAM could take the same shape as that recommended above for BAS, each item requiring a belief (B) and reality (R) rating, as well as a rating of negative affect associated with discrepancy (B-R).

Epstein, Baucom, Rankin & Burnett (1991) have produced a measure involving similar elements. Items of their 'Inventory of Specific Relationship Standards' (ISRS) ask the respondent to rate how his/her partner 'should' behave (a belief), whether the partner's behaviour meets the expected standard (dissonance) and how upsetting (negative affect) the partner's unsatisfactory behaviour is for the respondent. Using the ISRS in a study of domestic violence, Holtzworth-Munroe and Stuart (1995) found that 'distressed' husbands expected higher behavioural standards of their wives than 'non-distressed' husbands, were less satisfied that those standards were being met and were more upset by the discrepancy.

However, the extension of BAM to assess negative affect as well as belief and reality, would partly restore BAM's currently excessive demands. Perhaps, BAM could exist in two forms, the choice between the two being determined by particular research demands. The shorter form would retain BAM's present form, less the retrospective ratings, and rely upon the simple global 'happiness' rating as the measure of manifest 'psychological discomfort'. The long form would simply extend the short form by requiring an affect rating for each item.

Modified either way, BAM warrants being put to the longitudinal test

because its two basic variables, belief and reality, yield other important measures of dissonance, attributional dissonance and self attributional bias, all of which are strongly related to marital dissatisfaction. It is unlikely that response biases could completely account for such strong relationships. Respondents' extra comments on their questionnaires suggest that their ratings were carefully considered. And, like the partly similar Relationship Beliefs Inventory (RBI: Epstein & Eidelson, 1981), BAM is not likely to be affected by the social desirability response bias, as shown for the RBI by Emmelkamp et al. (1987).

It would be desirable for a longitudinal study to include other known predictors of marital distress as well, particularly measures of marital interaction (Bradbury et al., 1995; Noller et al., 1994) and neuroticism (Kurdek, 1993; Russell & Wells, 1994), with the aim of shedding more light on the relative contributions of cognitive and behavioural elements in the aetiology of marital dissatisfaction and dysfunction.

Couples could be located via marriage celebrants just prior to marriage for their pre-marriage beliefs and realities and tested again after one or two years. A sufficiently large sample could be targeted to afford empirical validation of theoretical subscales by factoring or clustering. Test-retest reliability remains to be assessed as well. A shortened and simpler form of BAM would be less daunting to subjects and more likely to achieve all of these ends.

## REFERENCES

- Ajzen, I. (1988). *Attitudes, personality and behaviour*. Stratford: Open University Press.
- Ajzen, I. & Fishbein, M. (1977). Attitude-behaviour relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84, 888-918.
- Anastasi, A. (1988). *Psychological testing*. (6th Ed.). New York: Macmillan.
- Argyle, M. (1975). Do personality traits exist? *New Behaviour*, 2, 176-179.
- Arias, I. & O'Leary, K.D. (1985). Semantic and perceptual discrepancies in discordant and nondiscordant marriages. *Cognitive Therapy and Research*, 9(1), 51-63.
- Aronson, E. (1968). Dissonance theory: Progress and problems. In R.P. Abelson, E. Aronson, T.M. Newcomb, M.J. Rosenberg & P.H. Tannenbaum (Eds.), *Theories of cognitive consistency: A source book* (pp. 5-27). Skokie, Il.: Rand McNally.
- Aronson, E. (1989). Analysis, synthesis and the treasuring of the old. *Personality and Social Psychology Bulletin*, 15(4), 508-512.
- Aronson, E. (1992). The return of the repressed: Dissonance theory makes a comeback. *Psychological Inquiry*, 3(4), 302-311.
- Astin, A.W. (1971). *Predicting academic performance in college*. New York: American Council On Education.
- Australian Council for Educational Research. (1973). *Co-operative reading comprehension test: Manual for administration and interpretation*. Melbourne: Australian Council for Educational research.
- Axson, D. & Cooper, J. (1981). Reducing weight by reducing dissonance: The role of effort justification in inducing weight loss. In E. Aronson (Ed.), *Readings about the social animal* (3rd Ed.). (pp. 181-196). San Francisco: Freeman.
- Bagarozzi, D.A. & Anderson, S.A. (1989). *Personal, marital and family myths: Theoretical formulations and clinical strategies*. New York: Norton.
- Bandura, A. (1969). *Principles of behaviour modification*. New York: Holt, Rinehart & Winston.
- Bandura, A. (1977). *Social learning theory*. New Jersey: Prentice-Hall.

- Barnes, G.E. & Vulcano, B.A. (1982). Measuring rationality independent of social desirability. *Personality and Individual Differences*, 3, 303-309.
- Baucom, D.H. & Epstein, N. (1990). *Cognitive-behavioural marital therapy*. New York: Brunner/Mazel.
- Beck, A.T. & Beck, R.W. (1972). Screening depressed patients in family practice: A rapid technique. *Postgraduate Medicine*, 52, 81-85.
- Beck, A.T., Rile, W.Y. & Rickels, K. (1974). Short-form of depression inventory: cross validation. *Psychological Reports*, 34, 1184-1186.
- Beck, A.T., Rush, A.J., Shaw, B.F. & Emery, G. (1979). *Cognitive therapy of depression*. New York: The Guilford Press.
- Beck, A.T., Ward, C.H., Mendelson, M., Mock, J. & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571.
- Bem, D.J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, 74(3), 183-200.
- Berkowitz, L. (1980). *A survey of social psychology*. (2nd Ed). New York: Holt, Rinehart & Winston.
- Berkowitz, L. & Devine, P.G. (1989a). Research traditions, analysis and synthesis in social psychological theories: The case of dissonance theory. *Personality and Social Psychology Bulletin*, 15 (4), 493-507.
- Berkowitz, L. & Devine, P.G. (1989b). Some comments in reply: Analysis, synthesis and contemporary social psychology. *Personality and Social Psychology Bulletin*, 15 (4), 530-532.
- Bernard, M.E. (1981). Private thought in rational-emotive psychotherapy. *Cognitive Therapy and Research*, 5, 125-142.
- Bernard, M.E. (1986). *Staying rational in an irrational world*. Melbourne: McCulloch Publishing.
- Bernard, M.E. (1991). *Procrastinate later*. Melbourne: Schwartz & Wilkinson.
- Bernard, M.E. & DiGiuseppe, R. (1989). Rational-emotive therapy today. In M. E. Bernard & R. DiGiuseppe (Eds), *Inside rational emotive therapy: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 1-7. New York: Academic Press.
- Bernard, M.E. & Joyce, M.R. (1984). *Rational-emotive therapy with children and adolescents: Theory, treatment strategies, prevention methods*. New York: Wiley.

- Beswick, G., Rothblum, E.D. & Mann, L. (1988). Psychological antecedents of student procrastination. *Australian Psychologist*, 23, 2, 207-217.
- Block, J. (1980). Effects of rational-emotive therapy on overweight adults. *Psychotherapy: Therapy, Research and Practice*, 17, 277-280.
- Borgen, F.H. & Barnett, D.C. (1987). Applying cluster analysis in counselling psychology research. *Journal of Counselling Psychology*, 34(4), 456-468.
- Borgen, F.H. & Weiss, D.J. (1971). Cluster analysis and counselling research. *Journal of Counselling Psychology*, 18(6), 583-591.
- Boyle, G.J. (1985). Self-report measures of depression: Some psychometric considerations. *British Journal of Clinical Psychology*, 24, 45-59.
- Bradbury, T.N., Campbell, S.M. & Fincham, F.D. (1995). Longitudinal and behavioural analysis of masculinity and femininity in marriage. *Journal of Personality and Social Psychology*, 68(2), 328-341.
- Bradbury, T.N. & Fincham, F.D. (1987). Affect and cognition in close relationships: Towards an integrative model. *Cognition and Emotion*, 1, 59-87.
- Bradbury, T.N. & Fincham, F.D. (1992). Attributions and behaviour in marital interaction. *Journal of Personality and Social Psychology*, 63(4), 613-628.
- Brehm, S.S. (1976). *The application of social psychology to clinical practice*. Washington DC: Hemisphere Publishing Corporation.
- Brehm, S.S. & Cohen, (1962). *Explorations in cognitive dissonance*. New York: Wiley.
- Brown, R. (1965). *Social psychology*. New York: MacMillan.
- Brown, W.F. & Holtzman, W.H. (1967). *SSHA manual: Survey of study habits and attitudes*. New York: The Psychological Corporation.
- Brown, S.D. & Nelson, T.L. (1983). Beyond the uniformity myth: A comparison of academically successful and unsuccessful test-anxious college students. *Journal of Counselling Psychology*, 30(3), 367-374.
- Burka, J.B. & Yuen, L.M. (1983). *Procrastination: Why you do it; What to do about it*. New York: Addison-Wesley.
- Callan, V.J., Galois, C., Noller, P. & Kashima, Y. (1991). *Social psychology*. (2nd Ed.). Sydney: Harcourt Brace Jovanovich.
- Campbell, D.T. & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81-105.

- Chess, S. & Thomas, A. (1984). *Origins and evolution of behaviour disorders* New York: Brunner/Mazel.
- Christensen, A. (1988). Dysfunctional interaction patterns in couples. In P. Noller & M.A. Fitzpatrick (Eds.), *Perspectives on marital interaction*, pp. 31-52. Clevedon: Multilingual Matters.
- Colling, T. (1981). *Relationships: Self-help for the family*. Sydney: Black Falcon Press.
- Cooper, J. (1980). Reducing fears and increasing assertiveness: The role of dissonance reduction. *Journal of Experimental Social Psychology*, 16, 199-213.
- Cooper, J. & Fazio, R.H. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.). *Advances in experimental social psychology* (Vol. 17, pp. 229-266). Orlando, Fl: Academic Press.
- Cooper, J. & Fazio, R.H. (1989). Research traditions, analysis and synthesis: Building a faulty case around misinterpreted theory. *Personality and Social Psychology Bulletin*, 15 (4), 519-529.
- Cramer, D. (1985). An item factor analysis of the Irrational Beliefs Test. *British Journal of Cognitive Psychotherapy*, 3(1), 70-76.
- Cramer, D. (1993). Are inappropriate feelings qualitatively or quantitatively different? A response to Ellis and DiGiuseppe. *Cognitive Therapy and Research*, 17 (5), 479-481.
- Cramer, D. & Fong, J. (1991). Effects of rational and irrational beliefs on intensity and "inappropriateness" of feelings: A test of rational-emotive theory. *Cognitive Therapy and Research*, 15, 319-329.
- Cramer, D. & Kupshik, G. (1993). Effect of rational and irrational statements on intensity and "inappropriateness" of emotional distress and irrational beliefs in psychotherapy patients. *British Journal of Clinical Psychology*, 32, 213-228.
- Daly & Burton, (1983). Self-esteem and irrational beliefs: An exploratory investigation with implications for counselling. *Journal of Counselling Psychology*, 30(3), 361-366.
- Dawes, R.M. (1979). The robust beauty of improper linear models in decision making. *American Psychologist*, 34(7), 571-582.
- Deffenbacher, J.L. (1986). Cognitive and physiological components of test anxiety in real-life exams. *Cognitive Therapy and Research*, 10(6), 635-644.
- Deffenbacher, J.L., Zwemer, W.A., Whisman, M.A., Hill, R.A. & Sloan, R.D. (1986). Irrational beliefs and anxiety. *Cognitive Therapy and Research*, 10(3), 281-292.
- Depue, R.A. & Monroe, S.M. (1978). Learned helplessness in the perspective of the depressive disorders: Conceptual and definitional issues. *Journal of Abnormal Psychology*, 87, 3-20.



- Doherty, W.J. (1981a). Cognitive processes in intimate conflict: I. Extending attribution theory. *American Journal of Family Therapy*, 9(1), 3-13.
- Doherty, W.J. (1981b). Cognitive processes in intimate conflict: II. Efficacy and learned helplessness. *American Journal of Family Therapy*, 9(1), 35-44.
- Dryden, W. (1985). Marital therapy: The rational-emotive approach. In W. Dryden (Ed.). *Marital therapy in Britain. Vol 1.* pp. 195-221. London: Harper & Rowe.
- Dryden, W. (1986). Language and meaning in rational-emotive therapy. In W. Dryden & P. Trower (Eds.). *Rational-emotive therapy: Recent developments in theory and practice* (pp.34-46). Bristol, UK: Institute for RET.
- Dryden, W. & Ellis, A.E. (1988). Rational-emotive therapy. In K.S. Dobson (Ed.). *Handbook of cognitive-behavioural therapies.* pp. 214-272. New York: The Guilford Press.
- Dryden, W., Mackay, D., Schroder, T., & Treacher, A. (1985). Approaches to marital therapy: Comparative analyses. In W. Dryden (Ed.). *Marital therapy in Britain. Vol 1.* pp. 285-311. London: Harper & Rowe.
- Duck, S. (1981). Toward a research map for the study of relationship breakdown. In S. Duck & R. Gilmour (Eds.), *Personal relationships: Vol. 3. Personal relationships in disorder.* pp. 1-29. London: Academic Press.
- Dyer, W.W. (1976). *Your erroneous zones.* New York: Avon.
- Dyer, W.W. (1986). *What do you really want for your children?* London: Bantam Press.
- Dyer, W.W. (1989). *You'll see it when you believe it.* Melbourne: Schwartz Publishing.
- Eagly, A.H. (1992). Uneven progress: Social psychology and the study of attitudes. *Journal of Personality and Social Psychology.* 63(5). 693-710.
- Eidelson, R.J. & Epstein, N. (1982). Cognition and relationship maladjustment: Development of a measure of dysfunctional relationship beliefs. *Journal of Consulting and Clinical Psychology*, 50, 715-720.
- Elliot, A.J. & Devine, P.G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality and Social Psychology.* 63(5). 382-394.
- Ellis, A.E. (1958a). Rational psychotherapy. *Journal of General Psychology*, 59, 35-49.
- Ellis, A.E. (1958b). *Sex without guilt.* New York: Lyle Stuart.

- Ellis, A.E. (1962). *Reason and emotion in psychotherapy*. New York: Lyle Stuart.
- Ellis, A.E. (1966). *How to raise an emotionally healthy, happy child*. Hollywood: Wilshire.
- Ellis, A.E. (1971). *Growth through reason*. Hollywood: Wilshire.
- Ellis, A.E. (1973). The no cop-out therapy. *Psychology Today*, July, 56-62.
- Ellis, A.E. (1979a). Rational-emotive therapy as a new theory of personality and therapy. In A.E. Ellis & J.M. Whiteley (Eds), *Theoretical and empirical foundations of rational-emotive therapy*, pp. 1-32, Monterey: Brooks/Cole.
- Ellis, A.E. (1979b). Rational-emotive therapy: Research and conceptual support. In A.E. Ellis & J.M. Whiteley (Eds), *Theoretical and empirical foundations of rational-emotive therapy*, pp. 101-173, Monterey: Brooks/Cole.
- Ellis, A.E. (1979c). The theory of rational-emotive therapy. In A.E. Ellis & J.M. Whiteley (Eds), *Theoretical and empirical foundations of rational-emotive therapy*, pp. 33-60, Monterey: Brooks/Cole.
- Ellis, A.E. (1987). A sadly neglected cognitive element in depression. *Cognitive Therapy and Research*, 11, 121-146.
- Ellis, A.E. (1989a). Comments on my critics. In M.E. Bernard & R. DiGiuseppe (Eds), *Inside rational emotive therapy: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 199-233. New York: Academic Press.
- Ellis, A.E. (1989b). Rational-emotive therapy. In R.J. Corsini & D. Wedding (Eds.). *Current psychotherapies*. 4th Ed. pp. 197-238. Illinois: Peacock.
- Ellis, A.E. & Bernard, M.E. (1983). *Rational-emotive approaches to the problems of childhood*. New York: Plenum Press.
- Ellis, A.E. & DiGiuseppe, R. (1993). Are inappropriate or dysfunctional feelings in rational-emotive therapy qualitative or quantitative? *Cognitive Therapy and Research*, 17 (5), 471-477.
- Ellis, A.E. & Harper, R.A. (1961a). *A guide to successful marriage*. Hollywood: Wilshire.
- Ellis, A.E. & Harper, R.A. (1961b). *A guide to rational living*. Englewood Cliffs, NJ: Prentice-Hall.
- Ellis, A.E. & Harper, R.A. (1975). *A new guide to rational living*. Hollywood, CA: Wilshire.
- Ellis, A.E. & Knaus, W.J. (1977). *Overcoming procrastination*. New York: Penguin.

- Emmelkamp, P.M.G., Krol, B., Sanderman, R. & Ruphan, M. (1987). The assessment of relationship beliefs in a marital context. *Personality and Individual Differences*, 8, 775-780.
- Engels, G.I., Garnefski, N. & Diekstra, R.F.W. (1993). Efficacy of rational-emotive therapy: A quantitative analysis. *Journal of Consulting and Clinical Psychology*, 61(6), 1083-1090.
- Epstein, N. (1982). Cognitive therapy with couples. *The American Journal of Family Therapy*, 10, 5-16.
- Epstein, N. (1986). Cognitive marital therapy. *Journal of Rational-Emotive Therapy*, 4, 68-81.
- Epstein, N., Baucom, D., Rankin, L. & Burnett, C. (1991, November). *Relationship standards in marriage: Development of a new measure of content-specific cognitions*. Paper presented at the annual meeting of the Association for Advancement of behaviour Therapy, New York.
- Epstein, N. & Eidelson, R.J. (1981). Unrealistic beliefs of clinical couples: Their relationship to expectations, goals and satisfaction. *The American Journal of Family Therapy*, 9, 13-22.
- Epstein, N., Pretzer, J.L. & Fleming, B. (1987). The role of cognitive appraisal in self-reports of marital communication. *Behaviour Therapy*, 18, 51-69.
- Eschenroeder, C. (1982). How rational is rational-emotive therapy. A critical appraisal of its theoretical foundations and therapeutic methods. *Cognitive Therapy and Research*, 6, 381-392.
- Ewart, C.K. & Thoresen, C.E. (1977). The rational-emotive manifesto. *Counselling Psychologist*, 7, 52-56.
- Ferrari, J.R., & Emmons, R.A. (1994). Procrastination as revenge: Do people report using delays as a strategy for revenge? *Personality and Individual Differences*, 17(4), 539-544.
- Festinger, L. (1957). *A theory of cognitive dissonance*. New York: Rowe, Peterson & Co.
- Fincham, F.D., Beach, S.R.H. & Nelson, G. (1987). Attribution processes in distressed and nondistressed couples: 3. Causal and responsibility attributions for spouse behaviour. *Cognitive Therapy and Research*, 11, 71-86.
- Fincham, F.D. & Bradbury, T.N. (1987a). Cognitive processes and conflict in close relationships: An attribution-efficacy model. *Journal of Personality and Social Psychology*, 53(6), 1106-1118.
- Fincham, F.D. & Bradbury, T.N. (1987b). The impact of attributions in marriage: A longitudinal study. *Journal of Personality and Social Psychology*, 53(3), 510-517.

- Fincham, F.D. & Bradbury, T.N. (1992). Assessing attributions in marriage: The relationship attribution measure. *Journal of Personality and Social Psychology*, 53(3), 457-468.
- Fincham, F.D. & Bradbury, T.N. (1993). Marital satisfaction, depression and attributions: A longitudinal analysis. *Journal of Personality and Social Psychology*, 64(3), 442-452.
- Fishbein, M. & Ajzen, I. (1974). Attitudes toward objects as predictors of single and multiple behavioural criteria. *Psychological Review*, 81, 59-74.
- Fitzpatrick, M.A. (1988). Approaches to marital interaction. In P. Noller & M.A. Fitzpatrick (Eds.), *Perspectives on marital interaction*, pp. 1-28. Clevedon: Multilingual Matters.
- Floyd, F.J. & Markman, H.J. (1983). Observational biases in spouse observation: Toward a cognitive/behavioural model of marriage. *Journal of Consulting and Clinical Psychology*, 51, 450-457.
- Frank, J.D. (1973). *Persuasion and healing*. Baltimore: The Johns Hopkins University Press.
- Franks, C. (1969). *Behaviour therapy: Appraisal and status*. New York: McGraw-Hill.
- Frude, N. (1979). The family and psychotherapy. In S. Walrond-Skinner (Ed.), *Family and marital psychotherapy*, pp. 14-44. London: Routledge & Kegan Paul.
- Geiss, S.K. & O'Leary, K.D. (1981). Therapist ratings of frequency and severity of marital problems: Implications for research. *Journal of Marital and Family Therapy*, 7, 515-520.
- Goldfried, M.R. & Davison, G.C. (1976). *Clinical behaviour therapy*. New York: Holt, Rinehart & Winston.
- Goldfried, M.R. & Sobocinski, D. (1975). Effect of irrational beliefs on emotional arousal. *Journal of Consulting and Clinical Psychology*, 43(4), 504-510.
- Goldstein, J.H. (1980). *Social psychology*. New York: Academic Press.
- Gotlib, I.H. (1984). Depression and general psychopathology in university students. *Journal of Abnormal Psychology*, 93, 19-30.
- Gotlib, I.H. (1990). An information processing analysis of the emotional disorders. *Cognition and Emotion*, 4(1), 53-60.
- Gould, J. (1982). A psychometric investigation of the standard and short form Beck Depression Inventory. *Psychological Reports*, 51, 1167-1170.
- Gray, J. (1990). *Men, women and relationships: Making peace with the opposite sex*. Hillsboro, Oregon: Beyond Words Publishing, Inc.

- Guthrie, D.M. & Snyder, C.W. (1988). Spouses' self-evaluations for situations involving emotional communication. In P. Noller & M.A. Fitzpatrick (Eds.), *Perspectives on marital interaction*, pp. 153-181. Clevedon: Multilingual Matters.
- Haaga, D.A. & Davison, G.C. (1989). Outcome studies of Rational-Emotive Therapy. In M.E. Bernard & R. DiGiuseppe (Eds.), *Inside RET: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 155-196. New York: Academic Press.
- Hammen, C.L. (1980). Depression in college students: Beyond the Beck Depression Inventory. *Journal of Consulting and Clinical Psychology*, 48(1), 126-128.
- Harrell, T.H., Chambless, D.L. & Calhoun, J.F. (1981). Correlational relationships between self-statements and affective states. *Cognitive Therapy and Research*, 5, 159-173.
- Hartin, W.W. (1977). *Divorce dilemma*. Melbourne: Hill of Content.
- Hartin, W.W. (1988). *Why did I marry you?* Melbourne: Hill of Content.
- Hartin, W.W. (1993). *Staying married*. Melbourne: Lothian.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Hewitt, P.L. & Dyck, D.G. (1986). Perfectionism, stress and vulnerability to depression. *Cognitive Therapy and Research*, 10(1), 137-142.
- Higgins, E.T. (1987). Self-discrepancy theory: A theory relating self and affect. *Psychological Review*, 94(3), 319-340.
- Hollon, S.D. & Kendall, P.C. (1980). Cognitive self statements in depression: Development of an automatic thoughts questionnaire. *Cognitive Therapy and Research*, 4, 383-395.
- Holtzworth-Munroe, A. & Stuart, G.L. (1994). The relationship standards and assumptions of violent versus nonviolent husbands. *Cognitive therapy and Research*, 18(2), 87-103.
- Hovland, O.J. & Alsaker, F.D. (1986). Disruptive emotions and the measurement of irrationality. *Journal of Rational Emotive Therapy*, 4(2), 143-154.
- Hunsley, J. (1987). Internal dialogue during academic examinations. *Cognitive Therapy and Research*, 11(6), 653-664.
- Ingram, R.E., Kendall, P.C., Smith, T.W. Donnell, C & Ronan, K. (1987). Cognitive specificity in emotional distress. *Journal of Personality and Social Psychology*, 53(4), 734-742.
- Isen, A.M., Shalke, T.E., Clark, M. & Karp, E. (1978). Affect, accessibility of material in memory and behaviour: A cognitive loop? *Journal of Personality and Social Psychology*, 36, 1-12.

- Jacobson, N.S. & Margolin, G. (1979). *Marital therapy: Strategies based on social learning and behaviour exchange principles*. New York: Brunner/Mazel.
- Jacobson, N.S., McDonald, D.W., Follette, W.C. & Berley, R.A. (1985). Attribution processes in distressed and nondistressed married couples. *Cognitive Therapy and Research*, 9(1), 35-50.
- Jacobson, N.S. & Moore, D. (1981). Spouses as observers of events in their relationship. *Journal of Consulting and Clinical Psychology*, 49, 269-277.
- James, A.L. & Wilson, K. (1986). *Couples, conflict and change*. London: Tavistock.
- Janis, I.L. & Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice and commitment*. New York: Free Press.
- Jones, R. (1968). *A factored measure of Ellis' irrational belief system with personality and maladjustment correlates*. Unpublished doctoral dissertation, Texas Technical College.
- Kassinove, H. (1986). Self-reported affect and core irrational thinking: A preliminary analysis. *Journal of Rational-Emotive Therapy*, 4, 2, 119-130.
- Katz, S.J. & Liu, A.E. (1988). *False love and other romantic illusions: Why love goes wrong and how to make it right*. New York: Ticknor & Fields.
- Kelly, G. (1955). *The psychology of personal constructs*. New York: Norton.
- Kendall, P.C. & Hollon, S.D. (1981). Assessing self-referent speech: Methods in the measurement of self-statements. In P.C. Kendall & S.D. Hollon (Eds). *Assessment strategies for cognitive behavioural interventions*. New York: Academic Press.
- Kendall, P. & Korgeski, G. (1979). Assessment and cognitive behavioural interventions. *Cognitive Therapy and Research*, 3, 1-21.
- Kleiner, F.B. (1979). Commentary on Albert Ellis' Article. In A.E. Ellis & J.M. Whiteley (Eds), *Theoretical and empirical foundations of rational-emotive therapy*. Monterey: Brooks/Cole.
- Knaus, W.J. (1979). *Do it now: How to stop procrastinating*. New York: Prentice-Hall.
- Kurdek, L.A. (1991). Correlates of relationship satisfaction in cohabiting gay and lesbian couples: Integration of contextual, investment and problem-solving models. *Journal of Personality and Social Psychology*, 61, 910-922.
- Kurdek, L.A. (1993). Predicting marital dissolution: A 5-year prospective longitudinal study of newlywed couples. *Journal of Personality and Social Psychology*, 64(2), 221-242.

- LaPointe, K.A. & Crandell, C.J. (1980). Relationship of irrational beliefs to self-reported depression. *Cognitive Therapy and Depression*, 4(2), 247-250.
- Lavin, D.E. (1967). *The prediction of academic performance*. New York: Wiley.
- Lazarus, A.A. (1976). *Multimodal therapy*. New York: McGraw-Hill.
- Lazarus, A.A. (1985). *Marital myths*. San Luis Obispo: Impact Publishers.
- Lazarus, A.A. (1989). The practice of rational-emotive therapy. In M. E. Bernard & R. DiGiuseppe (Eds), *Inside rational emotive therapy: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 95-112. New York: Academic Press.
- Lazarus, R.S. (1984). On the primacy of cognition. *American Psychologist*, 39, 117-123.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper.
- Linke, I.N. (1980). *The identification of adult matriculation students 'at risk'*. Unpublished Diploma Thesis.
- Locke, H.J. & Wallace, K.M. (1959). Short marital adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living*, 21, 251-255.
- Lohr, J.M. & Bonge, D. (1980). Retest reliability of the irrational beliefs test. *Psychological Reports*, 47, 1314.
- Lohr, J.M. & Bonge, D. (1981). On the distinction between illogical and irrational beliefs and their relationship to anxiety. *Psychological Reports*, 48, 191-194.
- Lohr, J.M. & Bonge, D. (1982). The Factorial validity of the irrational beliefs test: A psychometric investigation. *Cognitive Therapy and Research*, 6, 2, 225-230.
- Lord, C.G. (1989). The disappearance of dissonance in an age of relativism. *Personality and Social Psychology Bulletin*, 15 (4), 513-518).
- Lord, C.G., Ross, L. & Lepper, M.R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37, 2098-2109.
- Lyons, L.C. & Woods, P.J. (1991). The efficacy of rational-emotive therapy: A quantitative review of the outcome research. *Clinical Psychology Review*, 11, 357-369.
- MacDonald, A.P. & Games, R.G. (1972). Ellis' irrational values: A validation study. *Rational Living*, 7, 25-28.

- Madigan, R.J. & Bollenbach, A.K. (1986). The effects of induced mood on irrational thoughts and views of the world. *Cognitive Therapy and Research*, 10(5), 547-562.
- Mahoney, M.J. (1974). *Cognition and behaviour modification*. Cambridge: Ballinger.
- Mahoney, M.J. (1979). A critical analysis of rational-emotive theory and therapy. In A. Ellis & J.M. Whiteley (Eds), *Theoretical and empirical foundations of rational-emotive therapy*, pp. 177-180, Monterey: Brooks/Cole.
- Mahoney, M.J. (1980). Psychotherapy and the Structure of Personal Revolutions. In M.J. Mahoney (Ed.), *Psychotherapy process: current issues and future directions*, pp. 157-180. New York: Plenum Press.
- Mahoney, M.J. (1991). *Human change processes: The scientific foundations of psychotherapy*. New Jersey: Basic Books.
- Mahoney, M.J., Lyddon, W.J. & Alford, D.J. (1989). An evaluation of the rational-emotive theory of psychotherapy. In M.E. Bernard & R. DiGiuseppe (Eds), *Inside rational emotive therapy: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 69-94. New York: Academic Press.
- Malouff, J.M. & Schutte, N.S. (1986). Development and validation of a measure of irrational belief. *Journal of Consulting and Clinical Psychology*, 54, 6, 860-862.
- Mandler, G. (1984). *Mind and body: Psychology of emotion and stress*. New York: Norton.
- Marzillier, J. (1987). A sadly neglected element in depression: A reply to Ellis. *Cognitive Therapy and Research*, 11(1), 147-152.
- Matthews, A.M. (1988). *Why did I marry you anyway?* London: Cassell Publishers.
- McGovern, T.E. & Silverman, M.S. (1984). A review of outcome studies of rational-emotive therapy from 1977-1982. *Journal of Rational-Emotive Psychotherapy*, 2, 7-18.
- Meichenbaum, D. (1977). *Cognitive behaviour modification*. New York: Plenum Press.
- Meichenbaum, D. (1979). Dr Ellis, please stand up. In A. Ellis & J.M. Whiteley (Eds), *Theoretical and empirical foundations of rational-emotive therapy*, pp. 174-176, Monterey: Brooks/Cole.
- Minor, S.W. & Gold, S.R. (1986). Behaviour of test anxious students across time. *Personality and Individual Differences*, 7(2), 241-242.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley.
- Nelson, R.E. (1977). Irrational beliefs in depression. *Journal of Consulting and Clinical Psychology*, 45, 1190-1191.



- Nie, N.H., Hadlai Hull, C., Jenkins, J.G., Steinbrenner, K. & Bent, D.H. (1975). *Statistical package for the social sciences*. (2nd Ed.). New York: McGraw-Hill.
- Noller, P. (1987). Nonverbal communication in marriage. In D. Perlman & S. Duck (Eds.), *Intimate relationships: Development, dynamics and deterioration* (pp. 123-147). Beverley Hills, CA: Sage.
- Noller, P. (1988). Overview and implications. In P. Noller & M.A. Fitzpatrick (Eds.), *Perspectives on marital interaction*, pp. 323-344. Clevedon: Multilingual Matters.
- Noller, P., Feeney, J.A., Bonnell, D. & Callan, V.J. (1994). A longitudinal study of conflict in early marriage. *Journal of Social and Personal Relationships*, 11(2), 233-252.
- Norusis, M.J. (1985). *SPSS<sup>x</sup> advanced statistics guide*. New York: McGraw-Hill.
- Norusis, M.J. (1990a). *SPSS advanced statistics user's guide*. Chicago, IL: SPSS.
- Norusis, M.J. (1990b). *SPSS base system user's guide*. Chicago, IL: SPSS.
- O'Leary, K.D., Christian, J.L. & Mendell, N.R. (1994). A closer look at the link between marital discord and depressive symptomology. *Journal of Social and Clinical Psychology*, 13(1), 33-41.
- Osgood, C. E. & Tannenbaum, P. (1955). The principle of congruity and the prediction of attitude change. *Psychological Review*, 62, 42-55.
- Pedriani, B.C. & Pedriani, D.T. (1978). Evaluating experimental and control programmes for attrition/persistence. *Journal of Educational Research*, 71(4), 234-237.
- Richard, J.T. (1985). Multimodal therapy and cognitive dissonance in a behavioural medicine context. In A.A. Lazarus. *Casebook of multimodal therapy*. pp. 108-115. New York: The Guilford Press.
- Rorer, L.G. (1983). "Deep RET": A reformulation of psychodynamic explanations of procrastination. *Cognitive Therapy and Research*, 7(1), 1-9.
- Rorer, L.G. (1989a). Rational Emotive Theory I: An Integrated Psychological and Philosophical Basis. *Cognitive Therapy and Research*, 13(5), 475-492.
- Rorer, L.G. (1989b). Rational Emotive Theory II: Explication and Evaluation *Cognitive Therapy and Research*, 13(6), 531-548.
- Ross, M. & Sicoly, F. (1979). Egocentric biases in availability and attribution. *Journal of Personality and Social Psychology*, 37, 322-336.

- Russell, R.J.H. & Wells, P.A., (1994). Predictors of happiness in married couples. *Personality and Individual Differences*, 17(3), 313-321.
- Sager, C.J. (1976). *Marriage Contracts and Couple Therapy: Hidden Forces in Intimate Relationships*. New York: Brunner/Mazel.
- Sanderman, R., Mersch, P., Van Der Sleen, J., Emmelkamp, P.M.G. & Ormel, J. (1987). The Rational Behaviour Inventory (RBI): A psychometric evaluation. *Personality and Individual Differences*, 8(4), 561-569.
- Sarason, I.G. (1978). The Test Anxiety Scale: Concept and research. In C.D. Spielberger & I.G. Sarason (Eds.), *Stress and anxiety* (Vol.5, pp.193-218). Washington, DC: Hemisphere.
- Scher, S.J. & Cooper, J. (1989). The motivational basis of dissonance: The singular role of behavioural consequences. *Journal of personality and Social Psychology*, 56(6), 899-906.
- Schriber, J.B., Larwood, L. & Peterson, J.L. (1985). Bias in the attribution of marital conflict. *Journal of Marriage and the Family*, 47, 717-721.
- Schwartz, R.M. (1982). Cognitive-behaviour modification: A conceptual review. *Clinical Psychology Review*, 2, 267-293.
- Schwartz, R.M. (1984). Is rational-emotive therapy a truly unified interactive approach?: A reply to Ellis. *Clinical Psychology Review*, 4, 219-226.
- Semb, G., Glick, D.M. & Spencer, R.E. (1979). Student withdrawals and delayed work patterns in self-paced psychology courses. *Teaching of Psychology*, 6, 23-25.
- Shorkey, C.T. & Whiteman, V.L. (1977). Development of the Rational Behaviour Inventory: Initial validation and reliability. *Educational Psychology Measurement*, 37, 527-534.
- Smith, T.W. (1982). Irrational beliefs in the cause and treatment of emotional distress: A critical review of the rational emotive model. *Clinical Psychology Review*, 2, 505-522.
- Smith, T.W. (1989). Assessment in rational-emotive therapy: Empirical access to the ABCD model. In M.E. Bernard & R. DiGiuseppe (Eds), *Inside rational emotive therapy: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 135-153. New York: Academic Press.
- Smith, T.W. & Allred, K.D. (1986). Rationality revisited: A re-re assessment of the empirical support for the rational-emotive model. In P.C. Kendall (Ed.) *Advances in cognitive-behavioural research and therapy*, 5, 63-87. New York: Academic Press.
- Smith, T.W., & Zurawski, T.M. (1983). Assessment of irrational beliefs: the question of discriminant validity. *Journal of Clinical Psychology*, 39, 976-979.

- Solomon, L.J. & Rothblum, E.D. (1984). Academic procrastination: Frequency and cognitive-behavioural correlates. *Journal of Counselling Psychology*, 31(4), 503-509.
- Spanier, G.B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, 38, 15-28.
- Spielberger, C.D., Gorsuch, R.L. & Lushene, R. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Spielberger, C.D., Gorsuch, R.L., Lushene, R., Vagg, P.R. & Jacobs, G.A. (1983). *Manual for the State-Trait Anxiety Inventory (STAI, Y-Form)*. Palo Alto, CA: Consulting Psychologists Press.
- Steele, C.M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.). *Advances in experimental social psychology*(Vol 21, pp.261-302). San Diego: Academic.
- Tabachnick, B.G. & Fidell, L.S. (1989). *Using multivariate statistics*. (2nd Ed.). New York: Harper & Row.
- Thompson, S.C. & Kelley, H.H. (1981). Judgements of responsibility for activities in close relationships. *Journal of Personality and Social Psychology*, 41(3), 469-477.
- Thurman, C.W. (1984). Cognitive-behavioural interventions with Type A faculty. *Personnel and Guidance Journal*, 62, 358-362.
- Tinsley, H.E.A. & Tinsley, D.J. (1987). Uses of factor analysis in counselling psychology research. *Journal of Counselling Psychology*, 34(4), 414-424.
- Tosi, D.J. (1979). Personal reactions with some emphasis on new directions, application and research. In A.E. Ellis & J.M. Whiteley (Eds.), *Theoretical and empirical foundations of rational-emotive therapy*. pp. 181-187. Monterey: Brooks/Cole.
- Vasey, M.W. & Borkovec, T.D. (1992). A catastrophizing assessment of worrisome thoughts. *Cognitive Therapy and Research*, 16(5), 505-520.
- Vredenburg, K., Krames, L. & Flett, G.L. (1985). Re-examining the Beck Depression Inventory: The long and short of it. *Psychological Reports*, 56, 767-778.
- Walens, S., DiGiuseppe, R. & Wessler, R. (1980). *A practitioner's guide to rational-emotive therapy*. New York: Oxford University Press.
- Warwick, D.P. & Lininger, C.A. (1975). *The sample survey: Theory and practice*. New York: McGraw-Hill.
- Watson, D. & Clark, L.A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, 96, 465-490.

- Watson, D., Clark, L.A. & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070.
- Wegner, D.M. & Vallacher, R.R. (1977). *Implicit Psychology: an Introduction to Social Cognition*. New York: Oxford University Press.
- Wessler, R.L. (1992). Constructivism and rational-emotive therapy: A critique. *Psychotherapy: Theory, Research and Practice*, 29(4), 620-625.
- West, S.G. & Wickland, R.A. (1980). *A primer of social psychological theories*. Monterey: Brooks/Cole Publishing Co.
- Wicker, A.W. (1969). Attitudes versus actions: The relationship of verbal and overt behavioural responses to attitude objects. *Journal of Social Issues*, 25, 41-78.
- Wicklund, R.A. & Brehm, J.W. (1976). *Perspectives on cognitive dissonance*. New Jersey: Lawrence Erlbaum Associates.
- Williams, J.M.G., Watts, F.N., MacLeod, C & Mathews, A. (1988). *Cognitive Psychology and emotional disorders*. Chichester: Wiley.
- Zajonc, R. (1984). On the primacy of affect. *American Psychologist*, 39, 117-123.
- Ziegler, D. J. (1989). A critique of rational-emotive theory of personality. In M. E. Bernard & R. DiGiuseppe (Eds), *Inside rational emotive therapy: A critical appraisal of the theory and therapy of Albert Ellis*. pp. 27-45. New York: Academic Press.
- Zwemer, W.A. & Deffenbacher, J.L. (1984). Irrational beliefs, anger and anxiety. *Journal of Counselling Psychology*, 31(3), 391-393.
- Zurawski, R.M. & Smith, T.W. (1987). Assessing irrational beliefs and emotional distress: Evidence and implications of limited discriminant validity. *Journal of Counselling Psychology*, 34, 2, 224-227.

## APPENDIX A

July 1988

Dear Student,

I am researching students' beliefs and feelings about study. The research is approved by the Psychology Department, University of Adelaide, and is under the supervision of Dr J. M. Innes.

An initial part of this research requires students to complete the questionnaires: 'Beliefs About Study' and 'Feelings About Study'. I am therefore seeking about 30 minutes of your time, should you be willing to participate.

Please note that

1. all data will be kept secure and strictly confidential by me.
2. all data will be used for research only.
3. any results will be available in group form and no individual's data will be identifiable.
4. questionnaires will be destroyed after completion of the research.

Thanking you in anticipation and appreciation.

Sincerely,

Innes Linke  
COUNSELLOR



## APPENDIX B

1. I expect to complete an answer for a take-home assignment, just how I want it,

- 1. ( ) in my first attempt
- 2. ( )
- 3. ( )
- 4. ( ) after a few attempts
- 5. ( )
- 6. ( )
- 7. ( ) eventually.

2. I

- 1. ( ) constantly need
- 2. ( )
- 3. ( )
- 4. ( ) sometimes appreciate
- 5. ( )
- 6. ( )
- 7. ( ) never think about

the lecturer's praise for my ideas/answers.

3. How my grades for tests and assignments compare with other students' grades is usually of

- 1. ( ) no
- 2. ( )
- 3. ( )
- 4. ( ) some
- 5. ( )
- 6. ( )
- 7. ( ) intense

interest to me.

4. To motivate me to study, I

- 1. ( ) never
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) always

need a parent/spouse/friend to encourage or drive me.

## APPENDIX B

5. The methods by which I am assessed (e.g. tests versus assignments) should be

- 1. ( ) entirely prescribed by the 'authorities'
- 2. ( )
- 3. ( )
- 4. ( ) half prescribed and half my choice
- 5. ( )
- 6. ( )
- 7. ( ) entirely my choice.

6. I

- 1. ( ) constantly
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) never

think that the demands of matriculation study are too great, even for the eventual rewards.

7. I

- 1. ( ) constantly
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) never

wish that I could know how I'm going to score at the end of the course.

8. My study is

- 1. ( ) constantly
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) never

badly affected by social conflicts (e.g.: with parent/spouse/child/friend) which are beyond my control.



## APPENDIX B

9. When I study, I

- 1. ( ) never
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) always

expect to cover maximum ground with the time and thought I spend.

10. I

- 1. ( ) never think
- 2. ( )
- 3. ( )
- 4. ( ) sometimes like
- 5. ( )
- 6. ( )
- 7. ( ) constantly need

to impress parents/relatives with my achievement in study.

11. The thought of beating or matching the academic achievements of a certain person is

- 1. ( ) never
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) constantly

on my mind.

12. I

- 1. ( ) constantly
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) never

need someone (e.g.: teacher/tutor/friend) whom I can consult for help with study.

## APPENDIX B

13. The different topics which make up a subject should be

1. ( ) entirely my choice
2. ( )
3. ( )
4. ( ) half my choice and half prescribed
5. ( )
6. ( )
7. ( ) entirely prescribed.

14. If I find part of a subject uninteresting, I should

1. ( ) still work hard at the whole subject
2. ( )
3. ( )
4. ( ) do some work in some of the subject
5. ( )
6. ( )
7. ( ) not bother with any of the subject.

15. I

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) constantly

wonder what unexpected or unusual questions will appear in the next test.

16. The way I see it, I have

1. ( ) no
2. ( )
3. ( )
4. ( ) some
5. ( )
6. ( )
7. ( ) complete

control over the extent to which others distract me from study.

## APPENDIX B

17. Whenever I am faced with a new idea during a lecture or my reading, I expect to grasp it

1. ( ) immediately
2. ( )
3. ( )
4. ( ) after awhile
5. ( )
6. ( )
7. ( ) eventually.

18. When I receive good grades from tests and assignments, it is

1. ( ) always
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) never

important to me that other students are impressed.

19. As a student, I expect to be

1. ( ) the best
2. ( )
3. ( )
4. ( ) average
5. ( )
6. ( )
7. ( ) at the bottom.

20. When forming my own ideas I

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) always

have a strong need to hear other students' opinions.

## APPENDIX B

21. If a lecturer, despite being competent, has some objectionable ways, I should

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) always

have to accept them.

22. I

1. ( ) always
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) never

think seriously about ways of avoiding a test or exam.

23. I

1. ( ) constantly
2. ( )
3. ( )
4. ( ) occasionally
5. ( )
6. ( )
7. ( ) never

remind myself of the need to be in complete command of all course work covered.

24. Whenever I think about employment, and the apparent scarcity of it, I am usually left feeling that matriculation

1. ( ) will certainly
2. ( )
3. ( )
4. ( ) may possibly
5. ( )
6. ( )
7. ( ) will certainly not

help me find a job.

## APPENDIX B

25. In my tests and assignments, I

1. ( ) must always
2. ( )
3. ( )
4. ( ) sometimes hope to
5. ( )
6. ( )
7. ( ) never expect to

score 'A's.

26. I

1. ( ) constantly
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) never

think about the importance of proving myself to someone who doubts whether I will succeed.

27. I am

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) constantly

aware of the importance of improving my grades.

28. I am

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) always

willing to write my own ideas without confirmation from the lecturer that I am on the right track:

## APPENDIX B

29. For me, it is of

- 1. ( ) no
- 2. ( )
- 3. ( )
- 4. ( ) some
- 5. ( )
- 6. ( )
- 7. ( ) utmost

importance, that a lecturer is more than competent; he/she must be inspiring/interesting/captivating as well.

30. When a weekly assignment looks difficult, my immediate thought is to

- 1. ( ) make a start immediately
- 2. ( )
- 3. ( )
- 4. ( ) put it off for a few days.
- 5. ( )
- 6. ( )
- 7. ( ) put it off 'till the last day.

31. During tests and exams, I am

- 1. ( ) never
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) constantly

distracted by doubts about my performance.

32. I have

- 1. ( ) complete
- 2. ( )
- 3. ( )
- 4. ( ) some
- 5. ( )
- 6. ( )
- 7. ( ) no

control over how satisfying study is for me.

## APPENDIX B

33. In tests and exams, I think it is realistic to expect that I shall

- 1. ( ) never
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) always

make minor mistakes.

34. I actually undertook this study

- 1. ( ) entirely to please someone else
- 2. ( )
- 3. ( )
- 4. ( ) as much for someone else as for myself
- 5. ( )
- 6. ( )
- 7. ( ) entirely for myself.

35. I think it is realistic to expect that I can

- 1. ( ) never
- 2. ( )
- 3. ( )
- 4. ( ) sometimes
- 5. ( )
- 6. ( )
- 7. ( ) always

perform at my personal best.

36. Making sure that students do their home-work is

- 1. ( ) entirely my responsibility
- 2. ( )
- 3. ( )
- 4. ( ) as much the lecturer's responsibility as mine
- 5. ( )
- 6. ( )
- 7. ( ) entirely the lecturer's responsibility.

## APPENDIX B

37. Lecturers should

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) always

distribute full printed notes of their lectures to each student.

38. When I have difficulty understanding something, I

1. ( ) always
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) never

want to hide my ignorance from the lecturer.

39. I

1. ( ) never
2. ( )
3. ( )
4. ( ) sometimes
5. ( )
6. ( )
7. ( ) constantly

doubt whether my Matriculation grades will gain me a place in my chosen tertiary course.

40. How much sense my lecture notes make depends

1. ( ) entirely on me
2. ( )
3. ( )
4. ( ) as much on me as the lecturer
5. ( )
6. ( )
7. ( ) entirely on the lecturer.



## APPENDIX C

### FEELINGS ABOUT STUDY

Name: \_\_\_\_\_  
(First Name) (Surname)

Age: \_\_\_\_\_ years. Date of Birth: \_\_\_\_/\_\_\_\_/\_\_\_\_.

Sex: Male ( ) / Female ( )

Date: \_\_\_\_/\_06/\_88.

### INSTRUCTIONS

This questionnaire asks you about some of the feelings you experience as a matriculation student.

For each situation presented, think carefully about how you usually feel (e.g. anxious, angry, depressed etc.) and indicate how strongly you do so, with a tick (✓) on the 7-point scale provided.

The marked sample item below indicates that the student feels 'slightly' angry (2) and 'considerably' bored (5) whenever a lecturer labours a point already understood.

### Sample Item

When a lecturer continues to talk at length about an idea which I already understand, I feel

	Not		Moderately			Extremely	
	1	2	3	4	5	6	7
anxious	(✓)	( )	( )	( )	( )	( )	( )
angry	( )	(✓)	( )	( )	( )	( )	( )
depressed	(✓)	( )	( )	( )	( )	( )	( )
<i>bored.....</i>	( )	( )	( )	( )	(✓)	( )	( )

Notice that the student herself nominated her feeling of boredom, entering 'bored' in the space reserved for any feeling other than anxiety, anger and depression. Please do likewise for any other feeling you experience (e.g. guilt, irritation, envy, etc.).

This is not a test, with right and wrong answers; it simply asks what you feel and how strongly you do so. Please answer every item that you have experienced, in privacy, and at your own pace.

## APPENDIX C

1. When my first attempt at answering a home-assignment is unsatisfactory to me, I feel

	Not		Moderately			Extremely	
	1	2	3	4	5	6	7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

2. When I propose an idea or answer in class, and the lecturer disagrees with me, I feel

	Not		Moderately			Extremely	
	1	2	3	4	5	6	7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

3. If, in tests and assignments, I score less than certain other students, I feel

	Not		Moderately			Extremely	
	1	2	3	4	5	6	7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

4. If someone (e.g. parent/spouse/friend) does not make me study, or encourage me to do so, I feel

	Not		Moderately			Extremely	
	1	2	3	4	5	6	7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

5. If I can't choose my own form of assessment (e.g. tests versus assignments), I feel

	Not		Moderately			Extremely	
	1	2	3	4	5	6	7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

## APPENDIX C

6. The ongoing demands of study make me feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

7. Simply not knowing how my grades will finally turn out, makes me feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

8. When social conflicts (e.g. with parent/spouse/child/friend) badly affect my study, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

9. When I don't seem to be getting very far, while studying, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

10. The thought of my results letting down my parents/relatives makes me feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

### APPENDIX C

11. The thought of not beating or matching the academic achievements of a certain person makes me feel

	Not 1	2	3	Moderately 4	5	6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

12. If I don't have someone (e.g. teacher/tutor/friend) always near at hand to help with my study, I feel

	Not 1	2	3	Moderately 4	5	6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

13. If I can't personally choose what to study within a subject, I feel

	Not 1	2	3	Moderately 4	5	6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

14. When part of a subject is uninteresting, I generally feel (toward the whole subject)

	Not 1	2	3	Moderately 4	5	6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

15. The possibility of unusual or unexpected questions in the next test makes me feel

	Not 1	2	3	Moderately 4	5	6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

## APPENDIX C

16. When others distract me from study, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

17. When I don't understand a new idea immediately, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

18. When other students do not seem impressed with my grades, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

19. When I don't score top grades, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

20. When I tackle an assignment without knowing what other students think about it, I feel

	Not 1	2	3	Moderately 4      5		6	Extremely 7
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

## APPENDIX C

21. Any objectionable ways of an otherwise competent lecturer, make me feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

22. Tests and exams make me feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

23. When I am not totally in command of all course work covered, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

24. The thought of not eventually getting a job makes me feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

25. When I don't score 'A's, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

## APPENDIX C

26. If, at any time, I seem unlikely to prove myself to someone who doubts whether I will succeed, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

27. When my grades don't improve, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

28. If, when tackling an assignment, I am unsure whether I am on the right track, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

29. If a lecturer, despite being competent, lacks charisma, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

30. When I put off a difficult assignment until the last day, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

## APPENDIX C

31. If, during tests and exams, I am distracted by thoughts of doing poorly, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

32. When study is not satisfying for me, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

33. Whenever I make minor mistakes in tests and exams, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

34. Taking on matriculation mainly to please someone else leaves me feeling

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

35. Whenever I perform below my personal best, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )



## APPENDIX C

36. When a lecturer does not ensure that I do my homework, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

37. When printed lecture notes are not handed out regularly, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

38. When I approach a lecturer for help, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

39. Whenever I have doubts about getting into my chosen tertiary course, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

40. When my lecture notes don't make much sense, I feel

	Not 1	2	3	Moderately		6	Extremely 7
				4	5		
anxious	( )	( )	( )	( )	( )	( )	( )
angry	( )	( )	( )	( )	( )	( )	( )
depressed	( )	( )	( )	( )	( )	( )	( )
.....	( )	( )	( )	( )	( )	( )	( )

## APPENDIX D

October 1988

Dear Student,

I am researching students' beliefs and attitudes about study. The research is approved by the Psychology Department, University of Adelaide, and is under the supervision of Dr J. M. Innes.

An initial part of this research requires students to complete the questionnaires: 'Beliefs About Study' and 'Beliefs in General'. I am therefore seeking about 30 minutes of your time, should you be willing to contribute.

Please note that

1. all data will be kept secure and strictly confidential by me.
2. all data will be used for research only.
3. any results will be available in group form and no individual's data will be identifiable.
4. questionnaires will be destroyed after completion of the research.

Your participation will be appreciated.

Sincerely,

Innes Linke  
COUNSELLOR

## APPENDIX E

### BELIEFS ABOUT STUDY

Name: \_\_\_\_\_  
(First Name) (Surname)

Age: \_\_\_\_\_ years. Date of birth: \_\_\_/\_\_\_/\_\_\_.

Sex: Male( ) / Female( ).

Date: \_\_\_/\_\_\_/\_\_\_.

#### INSTRUCTIONS

This questionnaire asks you about some of the beliefs and expectations you have in relation to your matriculation studies.

For each item, you are asked to indicate the extent of your belief with a number from '1' to '7', using the following frequency scale.

1. never	2.	3.	4. half time	5.	6.	7. always
-------------	----	----	-----------------	----	----	--------------

In sample item 1. below, the student's rating (2) indicates her belief that popularity with the lecturer will 'rarely' be important for success in study. Her rating (4), in sample item 2., shows that study will be her most important concern about 'half of the time'.

#### Sample Items

- |   |
|---|
| 1. For success in study, getting on well with the lecturer will ___(2)___ be important. |
| 2. On my 'personal list of important things', study will ___(4)___ come first.          |

Remember that this is not a test, with right and wrong answers; it simply asks what you believe and to what extent you do so. Please answer every item, in privacy, and at your own pace.

Finally, try to avoid considering what might be 'ideal' or 'desirable' answers. Simply concentrate only on what you actually believe.

## APPENDIX E

1. never	2.	3.	4. half time	5.	6.	7. always
-------------	----	----	-----------------	----	----	--------------

1. I should \_\_\_( )\_\_\_ expect to take more than one or two attempts to complete a take-home assignment, and get it just how I want it.
2. The lecturer's compliments for my ideas/answers will \_\_\_( )\_\_\_ be important to me.
3. How my grades for tests and assignments compare with other students' grades will \_\_\_( )\_\_\_ be of intense interest to me.
4. To motivate me to study, I will \_\_\_( )\_\_\_ need someone ( e.g: parent/ spouse/friend ) to encourage or drive me.
5. The method by which I am assessed ( e.g: test versus assignment ) should \_\_\_( )\_\_\_ be the lecturer's choice rather than mine.
6. The demands of matriculation study will \_\_\_( )\_\_\_ seem too great for the eventual rewards.
7. During the year, I will \_\_\_( )\_\_\_ be wishing that I could know how I am going to score at the end of the course.
8. How my study progresses will \_\_\_( )\_\_\_ depend more on other people ( e.g: family/friends/lecturers ) than me.
9. When I study, I will \_\_\_( )\_\_\_ expect to cover maximum ground with the time and thought I spend.
10. I will \_\_\_( )\_\_\_ be without the need to impress parents/relatives with my achievements in study.
11. I will \_\_\_( )\_\_\_ be without the need to beat or match the academic achievements of a certain person.
12. I will \_\_\_( )\_\_\_ need someone (e.g: relative/friend/tutor) whom I can consult for help with study.

## APPENDIX E

1. never	2.	3.	4. half time	5.	6.	7. always
-------------	----	----	-----------------	----	----	--------------

13. The different topics which make up a subject should \_\_\_( )\_\_\_ be my choice rather than the lecturer's.
14. To keep me working at a subject, it will \_\_\_( )\_\_\_ have to interest me intensely.
15. I will \_\_\_( )\_\_\_ be without concern for unexpected or unusual questions in the next test.
16. The way I see it, I can \_\_\_( )\_\_\_ have control over the extent to which others (e.g: family/friends) distract me from study.
17. I will \_\_\_( )\_\_\_ expect to take a long time to grasp new ideas during lectures and my reading.
18. When I receive good grades from tests and assignments, it will \_\_\_( )\_\_\_ be important that other students are impressed.
19. I will \_\_\_( )\_\_\_ expect to score below the top few students.
20. I will \_\_\_( )\_\_\_ feel sure about my own ideas, without hearing other students' opinions.
21. If, despite being competent, a lecturer has some objectionable ways, I should \_\_\_( )\_\_\_ have to accept them.
22. I will \_\_\_( )\_\_\_ look forward to a test or exam.
23. I will \_\_\_( )\_\_\_ be prepared to take a risk (e.g: prepare likely test questions and ignore others, ignore part of a topic etc.).
24. How my study works out will \_\_\_( )\_\_\_ depend more on my circumstances (e.g: financial/home/employment) than me.

## APPENDIX E

1. never	2.	3.	4. half time	5.	6.	7. always
-------------	----	----	-----------------	----	----	--------------

25. I will \_\_\_( )\_\_\_ need to score 'A's in my tests and assignments, for personal satisfaction.
26. I will \_\_\_( )\_\_\_ be without the need to prove myself to a certain person.
27. During tests and exams, I will \_\_\_( )\_\_\_ be wondering whether other students can answer questions which I can't.
28. I will \_\_\_( )\_\_\_ be willing to write my own ideas without checking with the lecturer that I am on the right track.
29. For me, a lecturer \_\_\_( )\_\_\_ needs to be more than competent, that is, inspiring as well.
30. Whenever a weekly assignment looks difficult, my first thought will \_\_\_( )\_\_\_ be, to start immediately.
31. During tests and exams, I will \_\_\_( )\_\_\_ be distracted by doubts about my performance.
32. I will \_\_\_( )\_\_\_ have full control over how satisfying study is for me.
33. Making one or two minor mistakes in a test or exam will \_\_\_( )\_\_\_ be easy for me to accept.
34. I will \_\_\_( )\_\_\_ feel that I am undertaking this study more for someone else than myself.
35. When answering an assignment, I will \_\_\_( )\_\_\_ be wondering whether other students have thought of better ideas than mine.
36. Making sure that I do my home-work should \_\_\_( )\_\_\_ be more my responsibility than the lecturer's.

## APPENDIX E

1. never	2.	3.	4. half time	5.	6.	7. always
-------------	----	----	-----------------	----	----	--------------

37. Lecturers should\_\_\_( )\_\_\_distribute full printed notes of their lectures to each student.
38. It will\_\_\_( )\_\_\_be easy for me to expose my ignorance to the lecturer, when I have difficulty understanding something.
39. Whether my Matriculation grades eventually get me into my chosen tertiary course will\_\_\_( )\_\_\_be on my mind.
40. How much sense my lecture notes eventually make will\_\_\_( )\_\_\_depend more on the lecturer than me.
41. The need to be in complete command of all course work covered, will\_\_\_( )\_\_\_be on my mind.
42. A lecturer's written corrections/criticisms of my ideas/answers in an assignment will\_\_\_( )\_\_\_be easy for me to take.
43. When I think of good ideas for an assignment, I will\_\_\_( )\_\_\_hesitate to discuss them with other students.
44. As a student, I will\_\_\_( )\_\_\_want to do things my own way, without help/suggestions from others.
45. I will\_\_\_( )\_\_\_readily accept a minor dissatisfaction with my study situation (e.g: the system, lecturer, time-table etc.).
46. When a problem (e.g: with finance/family/friend) threatens my studies, my first thought will\_\_\_( )\_\_\_be, to put off dealing with it.
47. I will\_\_\_( )\_\_\_find the on-going uncertainties in study (e.g: whether I'll meet a deadline, be ready for a test, etc.) easy to bear.
48. I will\_\_\_( )\_\_\_feel that I, alone, am master of my academic destiny.

APPENDIX F

# B.I.G.

INSTRUCTIONS

This is an inventory of the way you believe and feel about various things. There are a number of statements with which you will tend to agree or disagree. Answers are to be circled in either agreement or disagreement: Strongly Agree (A), Agree (a), Neither (n), Disagree (d), and Strongly Disagree (D).

It is not necessary to think over any item very long. Mark your answer quickly and go on to the next statement.

Be sure to mark how you actually feel about the statement, not how you think you should feel.

Try to avoid the neutral or "n" response as much as possible. Select this answer only if you really cannot decide whether you tend to agree or disagree with a statement.

Name \_\_\_\_\_ Date \_\_\_\_\_  
(Last) (First) (Initial)

School (or address, occupation, as instructed) \_\_\_\_\_

Age \_\_\_\_\_ Date of Birth \_\_\_\_\_ Grade \_\_\_\_\_ Male \_\_\_\_\_ Female \_\_\_\_\_



## APPENDIX F

1. It is important to me that others approve of me.....A a n d D
2. I hate to fail at anything.....A a n d D
3. People who do wrong deserve what they get.....A a n d D
4. I usually accept what happens philosophically.....A a n d D
5. If a person wants to, he can be happy under almost any circumstances.....A a n d D
6. I have a fear of some things that often bothers me.....A a n d D
7. I usually put off important decisions.....A a n d D
8. Everyone needs someone he can depend on for help and advice.....A a n d D
9. "A zebra cannot change his stripes".....A a n d D
10. There is a right way to do everything.....A a n d D
  
11. I like the respect of others, but I don't have to have it.....A a n d D
12. I avoid things I cannot do well.....A a n d D
13. Too many evil persons escape the punishments they deserve.....A a n d D
14. Frustrations don't upset me.....A a n d D
15. People are disturbed not by situations, but by the view they take of them..A a n d D
16. I feel little anxiety over unexpected dangers of future events.....A a n d D
17. I try to go ahead and get irksome tasks behind me when they come up.....A a n d D
18. I try to consult an authority on important decisions.....A a n d D
19. It is almost impossible to overcome the influences of the past.....A a n d D
20. There is no perfect solution to anything.....A a n d D
  
21. I want everyone to like me.....A a n d D
22. I don't mind competing in activities where others are better than I.....A a n d D
23. Those who do wrong deserve to be blamed.....A a n d D
24. Things should be different from the way they are.....A a n d D
25. I cause my own moods.....A a n d D
26. I often can't get my mind off some concern.....A a n d D
27. I avoid facing my problems.....A a n d D
28. People need a source of strength outside themselves.....A a n d D
29. The impact of the past does not last forever.....A a n d D
30. There is seldom an easy way out of life's difficulties.....A a n d D
  
31. I like myself even when many others don't.....A a n d D
32. I like to succeed at something but I don't feel I have to.....A a n d D
33. Immorality should be strongly punished.....A a n d D
34. I often get disturbed over situations I don't like.....A a n d D
35. People who are miserable have usually made themselves that way.....A a n d D
36. If I can't keep something from happening, I don't worry about it.....A a n d D
37. I usually make decisions as promptly as I can.....A a n d D
38. There are certain people that I depend on greatly.....A a n d D
39. People overvalue the influence of the past.....A a n d D
40. Some problems will always be with us.....A a n d D
  
41. If others dislike me, that's their problem, not mine.....A a n d D
42. It is highly important to me to be successful in everything I do.....A a n d D
43. I seldom blame people for their wrongdoing.....A a n d D
44. I usually accept things the way they are, even if I don't like them.....A a n d D
45. A person won't stay angry or blue long unless he keeps himself that way....A a n d D
46. I can't stand to take chances.....A a n d D
47. Life is too short to spend it doing unpleasant tasks.....A a n d D
48. I like to stand on my own two feet.....A a n d D
49. If I had had different experiences, I could be more like I want to be.....A a n d D
50. Every problem has a correct solution.....A a n d D

## APPENDIX F

51. I find it hard to go against what others think.....A a n d D
52. I enjoy activities for their own sake, no matter how good I am at them.....A a n d D
53. The fear of punishment helps people be good.....A a n d D
54. If things annoy me, I just ignore them.....A a n d D
55. The more problems a person has, the less happy he will be.....A a n d D
56. I am seldom anxious over the future.....A a n d D
57. I seldom put things off.....A a n d D
58. I am the only one who can really understand and face my problems.....A a n d D
59. I seldom think of past experiences as affecting me now.....A a n d D
60. We live in a world of chance and probability.....A a n d D
- 
61. Although I like approval, it's not a real need for me.....A a n d D
62. It bothers me when others are better than I am at something.....A a n d D
63. Everyone is basically good.....A a n d D
64. I do what I can to get what I want and then don't worry about it.....A a n d D
65. Nothing is upsetting in itself; only the way you interpret it.....A a n d D
66. I worry a lot about certain things in the future.....A a n d D
67. It is difficult for me to do unpleasant chores.....A a n d D
68. I dislike for others to make my decisions for me.....A a n d D
69. We are slaves to our personal histories.....A a n d D
70. There is seldom an ideal solution to anything.....A a n d D
- 
71. I often worry about how people approve of and accept me.....A a n d D
72. It upsets me to make mistakes.....A a n d D
73. It's unfair that the "rain falls on the just and the unjust".....A a n d D
74. I am fairly easy going about life.....A a n d D
75. More people should face up to the unpleasantness of life.....A a n d D
76. Sometimes I can't get a fear off my mind.....A a n d D
77. A life of ease is seldom very rewarding.....A a n d D
78. I find it easy to seek advice.....A a n d D
79. Once something strongly affects your life, it always will.....A a n d D
80. It is better to look for a practical solution than a perfect one.....A a n d D
- 
81. I have considerable concern with what people are feeling about me.....A a n d D
82. I often become quite annoyed over little things.....A a n d D
83. I usually give someone who has wronged me a second chance.....A a n d D
84. I dislike responsibility.....A a n d D
85. There is never any reason to remain sorrowful for very long.....A a n d D
86. I hardly ever think of such things as death or atomic war.....A a n d D
87. People are happiest when they have challenges and problems to overcome.....A a n d D
88. I dislike having to depend on others.....A a n d D
89. People never change basically.....A a n d D
90. I feel I must handle things in the right way.....A a n d D
- 
91. It is annoying but not upsetting to be criticized.....A a n d D
92. I'm not afraid to do things which I cannot do well.....A a n d D
93. No one is evil, even though his deeds may be.....A a n d D
94. I seldom become upset over the mistakes of others.....A a n d D
95. Man makes his own hell within himself.....A a n d D
96. I often find myself planning what I'd do in different dangerous cases.....A a n d D
97. If something is necessary, I do it even if it is unpleasant.....A a n d D
98. I don't expect someone else to be highly concerned about my welfare.....A a n d D
99. I don't look upon the past with any regrets.....A a n d D
100. There is no such thing as an ideal set of circumstances.....A a n d D

## APPENDIX G

April 1989

Dear Student,

As a part of my research on the beliefs and expectations of adult matriculation students, I am seeking a final contribution from you, the completion of the following questionnaires: How I Procrastinate, Why I Procrastinate, Feelings About Study, the Self-Evaluation Questionnaire and the Beck Inventory. You will find a copy of each enclosed.

The questionnaires provide clear directions for self-administration. You will probably take an hour, at most, to complete them all, but it may be advisable to answer them in two or three sittings, to avoid confusing the variety of instructions and to maintain concentration.

I remind you that

1. this research is approved by the Psychology Department, University of Adelaide, and is under the supervision of Dr J.M. Innes.
2. all data will be kept secure and strictly confidential by me; they will not be released to any other person.
3. all data will be used for research only.
4. any results will be available in group form only and no individual's data will be identifiable
5. questionnaires will be destroyed after completion of the research.

As I intend to present sessions on 'Procrastination' and 'Managing Study-Stress' for interested students in term 2., I would like completed questionnaires returned to me by Friday, April 14, the last day of term 1. Should you wish, I will be happy to discuss your results, and any implications, privately with you in term 2.

Please return all materials to me as soon as convenient and before April 14 if possible. If my door is closed, slip your (sealed) envelope under it.

Your contribution will be most appreciated and I will reciprocate by providing help, for those who request it, to overcome procrastination and stress. The sessions I run will be open to any interested students.

Sincerely,

Innes Linke, COUNSELLOR.

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I support Mr Linke's research and trust that students who are having difficulties will take advantage of the help he can provide.

Dr D. Keegan, HEAD, SCHOOL OF MATRICULATION STUDIES.

## APPENDIX H

### HOW I PROCRASTINATE

Name: \_\_\_\_\_ (First Name) \_\_\_\_\_ (Surname)

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

#### INSTRUCTIONS

This questionnaire examines some of the ways in which students put off tackling study.

Using the following frequency scale, indicate your tendency on each item, by placing the appropriate number (from '0' to '6') in the brackets at the right-hand side of the page.

0.	1.	2.	3.	4.	5.	6.
never			half-time			always

1. When I work on a home assignment, my mind wanders off the topic.....( )
2. When I am supposed to be studying, I daydream about other things .....( )
3. I put off consulting the lecturer when I encounter a difficulty with my study .....( )
4. If my study falls behind, I catch up without prompting from anyone .....( )
5. I put off starting an assignment .....( )
6. I put aside marked tests and assignments without correcting or improving them .....( )
7. Soon after each lecture, I make sure that my notes are ordered, complete and understandable.....( )
8. I allow social distractions (e.g. friends, phone calls,...) to interfere with my study.....( )
9. It takes a long time for me to get 'warmed up' for study.....( )
10. I complete assignments on time.....( )

## APPENDIX H

0. never	1.	2.	3. half-time	4.	5.	6. always
-------------	----	----	-----------------	----	----	--------------

11. I leave test preparation as late as possible.....( )
12. Study comes before my other interests (e.g. T.V.,  
radio, sport,.....).....( )
13. To reduce my evening workload, I use 'free' periods  
between lectures for study.....( )
14. My study is irregular and determined mainly by  
approaching tests and deadlines.....( )
15. With me, study is 'hit-or-miss' depending on the mood  
I'm in .....( )
16. My mind wanders off the topic during lectures .....( )
17. When I miss a lecture, I catch up promptly on  
my own initiative.....( )
18. I do other things when I ought to be studying.....( )
19. When personal library research is required,  
I do it promptly.....( )
20. While preparing for a test, I test myself first to  
make sure I'm prepared.....( )



## APPENDIX I

0	1	2	3	4	5	6
none			half			all

11. I was concerned that my classmates might resent me if I was too prompt .....( )
12. I expected to find the task difficult .....( )
13. I waited for a better state of mind .....( )
14. I was put off by the expectation that it would take too long .....( )
15. I resent having deadlines set for me .....( )
16. Most students procrastinate; why not me? .....( )
17. An unsatisfactory first attempt might be hard for me to face .....( )
18. I waited, hoping for more information about the assignment from the lecturer .....( )
19. I simply felt too lazy .....( )
20. My friends were pressuring me to do other things .....( )
21. I was concerned that if I got a good grade people would have higher expectations of me in future .....( )
22. I was afraid I wouldn't meet my own expectations .....( )
23. I know that I work best under pressure (e.g. just before a deadline) .....( )
24. I felt that the period of time available to me then was too short for a worthwhile start .....( )
25. There were other things which, at the time, I felt I had to do but, looking back, were really unnecessary ... ( )
26. I like the excitement of doing an assignment at the last minute.....( )





## APPENDIX J

1. When my first attempt at answering a home-assignment is unsatisfactory to me, I feel.....
2. When I propose an idea or answer in class, without receiving a compliment from the lecturer, I feel .....
3. If, in tests and assignments, I score less than certain other students, I feel.....
4. If someone (e.g. parent/spouse/friend) does not make me study, or encourage me to do so, I feel.....
5. When I can't choose my own form of assessment (e.g. test versus assignment), I feel.....
6. The on-going demands of study make me feel.....
7. Simply not knowing how my grades will finally turn out, makes me feel.....
8. When conflicts with other people (e.g. parent/spouse/child/friend) badly affect my study, I feel.....
9. When I don't seem to be getting very far, while studying, I feel.....
10. The thought of my results letting down my parents/relatives makes me feel.....
11. The thought of not beating or matching the academic achievements of a certain person makes me feel.....
12. If I don't have someone (e.g. teacher/tutor/friend) always near at hand to help with my study, I feel.....
13. If I can't personally choose from the topics which make up a subject, I feel.....
14. When part of a subject is uninteresting, I feel (toward the whole subject).....
15. The possibility of unusual or unexpected questions in the next test makes me feel.....

## APPENDIX J

16. When others (e.g. family/friends) distract me from study, I feel.....
17. When I don't understand a new idea quickly, I feel.....
18. When other students do not seem impressed with my grades, I feel.....
19. When I score below the top few students, I feel.....
20. When I tackle an assignment without knowing what other students think about it, I feel.....
21. Any objectionable ways of an otherwise competent lecturer make me feel.....
22. Tests and exams make me feel.....
23. When I take a risk (e.g. prepare likely test questions and ignore others, ignore part of a topic, etc.) I feel.....
24. When my circumstances (e.g. finance, home, employment) hinder my study, I feel.....
25. When I don't score 'A's, I feel.....
26. If, at any time, I seem unlikely to prove myself to a certain person, I feel.....
27. When, during tests and exams, I wonder whether other students can answer questions which I can't, I feel.....
28. If, when starting an assignment, I don't check with the lecturer that I am on the right track, I feel.....
29. If a lecturer, despite being competent, is uninspiring, I feel.....
30. When I put off a difficult assignment, I feel.....
31. If, during tests and exams, I am distracted by doubts about my performance, I feel.....
32. When study is not satisfying for me, I feel.....

## APPENDIX J

33. When I make one or two minor mistakes in a test or exam, I feel.....
34. When it seems that I am undertaking this study more for someone else than myself, I feel.....
35. If, while answering an assignment, I find myself wondering whether other students have better ideas than mine, I feel.....
36. When a lecturer does not ensure that I do my homework, I feel.....
37. When printed lecture notes are not handed out, I feel.....
38. When I approach a lecturer for help, I feel.....
39. When I have doubts about eventually getting into my chosen tertiary course, I feel.....
40. When my lecture notes don't make much sense, I feel.....
41. When I'm not in complete command of all course work covered, I feel.....
42. Lecturers' written corrections/criticisms of my ideas/ answers in assignments make me feel.....
43. When other students probe for my ideas on an assignment, I feel.....
44. When I have to do things my own way, without help/ suggestions from others, I feel.....
45. Minor dissatisfactions with my study situation (e.g. the system, time-table etc.) leave me feeling.....
46. When a problem (e.g. with finance/family/friend) threatens my studies and I put off facing it, I feel.....
47. The on-going uncertainties in study (e.g. whether I'll meet a deadline, be ready for a test, etc.) make me feel.....
48. When I don't seem to be the master of my academic destiny, I feel.....

## APPENDIX J

### FEELINGS ABOUT STUDY

#### ANSWER SHEET

Name: \_\_\_\_\_  
(First Name) (Surname)

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

A SUGGESTED PROCEDURE FOR RESPONDING TO EACH SITUATION.

- (a) Scan all the listed feelings.
- (b) Select those you experience and rate their strength.
- (c) Rate those you don't experience with '0'.

0.	1.	2.	3.	4.	5.	6.
not at all			moderately			extremely

FEELING	samples		SITUATION																							
	s1	s2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
anxious	0	}																								
angry	1	}																								
depressed	0	}																								
upset	0	}																								
bored	4	}																								
guilty	0	}																								
irritated	4	}																								
disgusted	0	}																								
embarrassed	0	}																								
foolish	0	}																								
helpless	0	}																								
frustrated	2	}																								
scared	0	}																								

PLEASE TURN OVER FOR SITUATIONS 24 TO 48.

## APPENDIX J

0.	1.	2.	3.	4.	5.	6.
not at all			moderately			extremely

### SITUATION

FEELING	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
anxious																									
angry																									
depressed																									
upset																									
bored																									
guilty																									
irritated																									
disgusted																									
embarrassed																									
foolish																									
helpless																									
frustrated																									
scared																									



## APPENDIX K

	<u>Almost Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Almost Always</u>
15. I feel inadequate.....	1	2	3	4
16. I am content.....	1	2	3	4
17. Some unimportant thought runs through my mind and bothers me.....	1	2	3	4
18. I take disappointments so keenly that I can't put them out of my mind.....	1	2	3	4
19. I am a steady person.....	1	2	3	4
20. I get in a state of tension or turmoil as I think over my recent concerns and interests.....	1	2	3	4

## APPENDIX L

### BECK-INVENTORY

Name \_\_\_\_\_  
(First Name) (Surname)

Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Please choose the item in each group of four statements which best describes the way you have been feeling over the past week, including today. Encircle the letter (a, b, c or d) next to the item you choose.

1. a I do not feel sad.  
b I feel sad.  
c I am sad all the time and I can't snap out of it.  
d I am so sad or unhappy that I can't stand it.
2. a I am not particularly discouraged about the future.  
b I feel discouraged about the future.  
c I feel I have nothing to look forward to.  
d I feel that the future is hopeless and that things cannot improve.
3. a I do not feel like a failure.  
b I feel I have failed more than the average person.  
c As I look back on my life, all I can see is a lot of failures.  
d I feel I am a complete failure as a person.
4. a I get as much satisfaction out of things as I used to.  
b I don't enjoy things the way I used to.  
c I don't get real satisfaction out of anything anymore.  
d I am dissatisfied or bored with everything.
5. a I don't feel particularly guilty.  
b I feel guilty a good part of the time.  
c I feel quite guilty most of the time.  
d I feel guilty all of the time.
6. a I don't feel disappointed in myself.  
b I am disappointed in myself.  
c I am disgusted with myself.  
d I hate myself.
7. a I don't have any thoughts of killing myself.  
b I have thoughts of killing myself, but I would not carry them out.  
c I would like to kill myself.  
d I would kill myself if I had the chance.

CONTINUED OVER PAGE



## APPENDIX L

8. a I have not lost interest in other people.  
b I am less interested in other people than I used to be.  
c I have lost most of my interest in other people.  
d I have lost all of my interest in other people.
9. a I make decisions about as well as I ever could.  
b I put off making decisions more than I used to.  
c I have greater difficulty in making decisions than before.  
d I can't make decisions at all anymore.
10. a I don't feel I look any worse than I used to.  
b I am worried that I am looking old or unattractive.  
c I feel that there are permanent changes in my appearance that make me look unattractive.  
d I believe that I look ugly.
11. a I can work about as well as before.  
b It takes an extra effort to get started at doing something.  
c I have to push myself very hard to do anything.  
d I can't do any work at all.
12. a I don't get more tired than usual.  
b I get tired more easily than I used to.  
c I get tired from doing almost anything.  
d I am too tired to do anything.
13. a My appetite is no worse than usual.  
b My appetite is not as good as it used to be.  
c My appetite is much worse now.  
d I have no appetite at all anymore.

## APPENDIX M

September, 1989

### STUDENT PROCRASTINATION - LECTURER'S RATING

Dear lecturer,

As part of my continuing investigation of the characteristics and performance of current fulltime matriculation students, I would like to record your observation of the frequency with which each of your students procrastinates in study.

Enclosed is a class list for each of your classes. It is important that your ratings are made consistent with fixed criteria, which are defined below.

1. Consider the following student commitments: assignments, tests, projects, tutorial presentations and class attendance.
2. Consider how often the student procrastinates in regard to these commitments, either by
  - (a) being late, or
  - (b) not fulfilling the commitment at all without legitimate reason (as defined by SSABSA)
3. Please consult your roll books and marks books as you make your general ratings.

The rating scale to be used is the following

0	1	2	3	4	5	6
never			half time			always

4. Please give ratings for students who have withdrawn as well.

With thanks,

Innes Linke

P.S.

Please take care not to leave these lists where students could see them and return your completed lists to me personally, or via my pigeon hole.

## APPENDIX N

### Internal consistency of the BAS full scale

(N = 180)

BAS Item	Item-total Correlation	BAS Item	Item-Total Correlation
item 1.	-.10	item 25.	.24
item 2.	.35	item 26.	.36
item 3.	.33	item 27.	.40
item 4.	.46	item 28.	.21
item 5.	.20	item 29.	.11
item 6.	.28	item 30.	.16
item 7.	.53	item 31.	.49
item 8.	.18	item 32.	.28
item 9.	-.10	item 33.	.19
item 10.	.41	item 34.	.34
item 11.	.40	item 35.	.39
item 12.	.15	item 36.	.21
item 13.	.16	item 37.	.22
item 14.	.23	item 38.	.31
item 15.	.28	item 39.	.34
item 16.	.34	item 40.	.08
item 17.	-.15	item 41.	.19
item 18.	.38	item 42.	.37
item 19.	-.12	item 43.	.20
item 20.	.27	item 44.	.32
item 21.	.02	item 45.	.24
item 22.	.20	item 46.	.24
item 23.	.26	item 47.	.44
item 24.	.24	item 48.	.22

$\alpha = .79$

## APPENDIX O

### Internal consistency of a priori BAS subscales

(N = 180)

#### (1) Performance

Belief	Item-Total r
item 1.	.29
item 9.	.30
item 17.	.23
item 25.	.44
item 33.	.23
item 41.	.25

$\alpha = .54$

#### (2) Approval

Belief	Item-Total r
item 2.	.27
item 10.	.48
item 18.	.37
item 26.	.41
item 34.	.27
item 42.	.38

$\alpha = .63$

#### (3) Competitiveness

Belief	Item-Total r
item 3.	.41
item 11.	.16
item 19.	.08
item 27.	.24
item 35.	.39
item 43.	.24

$\alpha = .49$

#### (4) Dependence

Belief	Item-Total r
item 4.	.31
item 12.	.20
item 20.	.25
item 28.	.36
item 36.	.08
item 44.	.49

$\alpha = .53$

## APPENDIX O

### (5) Ideality

Belief	Item-Total r
item 5.	.53
item 13.	.32
item 21.	.31
item 29.	.33
item 37.	.34
item 45.	.40

$\alpha = .64$

### (6) Avoidance

Belief	Item-Total r
item 6.	.18
item 14.	.24
item 22.	.18
item 30.	.25
item 38.	.21
item 46.	.22

$\alpha = .44$

### (7) Certainty

Belief	Item-Total r
item 7.	.55
item 15.	.41
item 23.	.36
item 31.	.36
item 39.	.41
item 47.	.47

$\alpha = .70$

### (8) External Locus

Belief	Item-Total r
item 8.	.33
item 16.	.45
item 24.	.36
item 32.	.40
item 40.	.27
item 48.	.40

$\alpha = .64$

Note:

(a) Mean  $\alpha = .58$

(b) Range of  $\alpha = .44$  to  $.70$

## APPENDIX P

### Internal consistency of clustered BAS subscales

(N = 180)

**(1) Performance**

Belief	Item-Total r
item 1.	.37
item 9.	.27
item 17.	.29
item 19.	.43
item 25.	.49
item 33.	.22
item 41.	.29
item 43.	.39

$\alpha = .65$

**(2) Approval**

Belief	Item-Total r
item 2.	.46
item 10.	.53
item 11.	.55
item 18.	.33
item 20.	.35
item 26.	.41
item 28.	.32
item 38.	.35
item 42.	.35
item 44.	.51

$\alpha = .75$

**(3) Worry**

Belief	Item-Total r
item 3.	.46
item 7.	.59
item 15.	.39
item 22.	.29
item 23.	.34
item 27.	.50
item 31.	.46
item 35.	.43
item 39.	.40
item 47.	.49

$\alpha = .77$

**(4) Dependence**

Belief	Item-Total r
item 4.	.49
item 6.	.54
item 12.	.39
item 34.	.33
item 46.	.42

$\alpha = .68$

## APPENDIX P

### (5) Ideality

Belief	Item-Total r
item 5.	.53
item 13.	.32
item 21.	.31
item 29.	.33
item 37.	.34
item 45.	.40

$\alpha = .64$

### (6) External Locus

Belief	Item-Total r
item 8.	.31
item 14.	.30
item 16.	.48
item 24.	.39
item 30.	.28
item 32.	.42
item 36.	.44
item 40.	.32
item 48.	.39

$\alpha = .70$

#### Note:

(a) Mean  $\alpha = .70$

(b) Range of  $\alpha = .64$  to  $.77$

## APPENDIX Q

### Internal consistency of procrastination scales

(N = 116)

HOW I PROCRASTINATE		WHY I PROCRASTINATE	
HIP item	Item-total Correlation	Cluster 1 WIP item	Item-total Correlation
item 1.	.60	item 1.	.55
item 2.	.60	item 4.	.44
item 3.	.47	item 5.	.69
item 4.	.44	item 6.	.63
item 5.	.60	item 9.	.44
item 6.	.52	item 12.	.51
item 7.	.40	item 14.	.38
item 8.	.56	item 17.	.69
item 9.	.57	item 18.	.50
item 10.	.48	item 22.	.70
item 11.	.63	item 25.	.50
item 12.	.39		
item 13.	.30		
item 14.	.61		
item 15.	.71		
item 16.	.53		
item 17.	.51		
item 18.	.68		
item 19.	.50		
item 20.	.44		
$\alpha = .90$		$\alpha = .86$	
		<i>(Low frustration tolerance)</i>	
		Cluster 2 WIP item	Item-total Correlation
		item 3.	.60
		item 8.	.41
		item 13.	.44
		item 19.	.61
		item 20.	.46
		$\alpha = .74$	



## APPENDIX R

### Frequency distributions of WIP responses

(N = 116)

*Response rating (from 0 to 6) indicates relative contribution of the item to the respondent's reason for procrastination*

0	1	2	3	4	5	6
none			half			all

WIP Cluster 1.	Frequencies							Relative Frequency ≥3	median
	0	1	2	3	4	5	6		
item 1.	19	22	15	22	18	15	5	51.7%	3
item 4.	27	24	13	18	11	16	7	44.8%	2
item 5.	14	11	10	20	18	26	17	69.8%	4
item 6.	6	9	19	25	25	25	7	70.7%	3
item 9.	16	16	26	26	19	9	4	50.0%	2.5
item 12.	7	14	22	35	21	12	5	62.9%	3
item 14.	24	18	17	27	18	9	3	49.1%	2
item 17.	22	10	14	21	26	10	13	60.3%	3
item 18.	24	22	21	24	15	8	2	42.2%	2
item 22.	16	8	13	25	20	16	18	68.1%	3
item 24.	41	29	18	15	8	4	1	24.1%	1
item 25.	22	18	18	29	6	18	5	50.0%	2.5

mean rating = 2.70

mean rel freq ≥3 = 66.2%

WIP Cluster 2.	Frequencies							Relative Frequency ≥3	median
	0	1	2	3	4	5	6		
item 3.	7	20	28	26	18	12	5	52.6%	3
item 8.	43	25	20	17	2	7	2	24.1%	1
item 13.	9	12	23	26	29	15	2	62.1%	3
item 19.	22	16	22	23	14	15	4	48.3%	3
item 20.	51	24	16	15	6	4	0	21.6%	1

mean rating = 2.16

mean rel freq ≥3 = 41.7%

**APPENDIX R**

WIP Cluster 3.	Frequencies							Relative Frequency	median
	0	1	2	3	4	5	6	<u>&gt;3</u>	
item 10.	69	15	11	14	4	3	0	18.1%	0
item 23.	40	20	16	20	13	5	2	34.5%	1
item 26.	66	19	12	9	7	2	1	18.1%	0

mean rating = 1.2

mean rel freq >3 = 23.6%

WIP Cluster 4.	Frequencies							Relative Frequency	median
	0	1	2	3	4	5	6	<u>&gt;3</u>	
item 2.	61	28	16	6	4	1	0	9.5%	0
item 7.	87	16	8	5	0	0	0	4.3%	0
item 11.	99	8	7	1	0	0	1	1.7%	0
item 15.	70	20	15	5	2	4	0	9.5%	0
item 16.	68	21	9	15	3	0	0	15.5%	0
item 21.	75	16	4	12	1	6	2	18.1%	0

mean rating = .68

mean rel freq >3 = 9.8%

## APPENDIX S

Dear Participant,

November, 1989.

As a counsellor and psychologist, I deal with adult and adolescent students, who present a wide range of personal problems. From my work, I have acquired a deep interest in the relationship between a person's beliefs and his/her behaviour and emotions. To explore that relationship further, I am undertaking post-graduate research through the Department of Psychology at the University of Adelaide. One of the areas on which my research focuses is marriage.

A person usually enters marriage with certain beliefs and expectations about him/herself, his/her partner and their marriage. My aim is to examine those beliefs and expectations, how they change during marriage, how closely they match reality and how they compare with their partner's.

I am looking for married couples to participate in this investigation and I ask each volunteering couple to agree to the following four requests.

1. Partners are asked to complete the enclosed questionnaire, 'Beliefs About Marriage' (B.A.M.).
2. It is particularly important that both partners agree to complete B.A.M.. Two copies of the questionnaire are provided.
3. However open partners might normally be, it is crucial that they agree to keep their answers completely private from each other. Any exchange is likely to distort answers and reduce the value of the investigation.
4. For the sake of security, each partner is advised to personally post his/her questionnaire as soon after completion as possible. Two pre-paid, return envelopes are enclosed.

If you decide to participate in this study, as I hope you will, I wish to emphasize a number of points.

5. This research is approved by the Department of Psychology, University of Adelaide, and is under the supervision of Dr J.M. Innes.
6. All data will be kept secure and strictly confidential by me, in accordance with the 'Psychological Practices Act', by which I am bound.
7. All data will be used for research only.
8. Any results will be in group form only and no individual's data will be identifiable.
9. Questionnaires will be destroyed after completion of the research.

## APPENDIX S

10. Because your name is not required on your questionnaire, your answers cannot be traced to you. Therefore, you can afford to be completely frank. The 'couple code' merely allows me to match your questionnaire with your partner's. Your anonymity remains.
11. Should you have any queries about the questionnaire before or during your completion of it, feel free to phone me on 79 5145 between 6 pm and 9 pm on week nights, or between 9 am and 9pm on weekends. Please remember that I cannot discuss any data from questionnaires which have been returned to me, as explained in point 6. above.

If you are interested in the outcome of this investigation, I envisage that preliminary findings will be available by mid 1990. A summary of the findings will be forwarded to you on request.

I look forward to your participation and your partner's.

Sincerely,

Innes Linke

## APPENDIX T

### B . A . M

#### Beliefs About Marriage

SEX.....   (tick ✓)  
                   male           female

COUPLE CODE.....

This questionnaire examines ideas about marriage. For each idea presented (e.g. how decisions about money should be shared), you are asked to indicate your belief (B) and the reality (R), as you 'NOW' see them. You are then asked to think back to the beginning of your marriage to recall your belief (B) and reality (R) at 'FIRST'.

Use the following frequency scale to indicate all of your beliefs (B) and realities (R).

0	1	2	3	4	5	6
never			half-time			always

Consider the following sample item.

#### SAMPLE ITEM

	First	Now
Decisions about money: by me or my partner?		
B....I should have equal say.....	( 3 )	..( 5 )
R....I have equal say.....	( 0 )	..( 1 )

- Rating ( 5 ) indicates that the respondent 'NOW' believes (B) that she should have equal say 'most' of the time.
- Rating ( 1 ) indicates the reality (R), as she 'NOW' sees it, that she 'rarely' has equal say.
- Rating ( 3 ) indicates that she at 'FIRST' believed that she should have equal say about 'half' of the time.
- Rating ( 0 ) indicates the reality (R), as she 'FIRST' saw it, that she 'never' had equal say.

It is recommended that you first answer the whole of BAM in the present (your B and R 'NOW'). Then, think back to the beginning of your marriage and answer BAM in the past (your B and R at 'FIRST').

Please be frank (your answers cannot be traced to you) and make sure to keep your answers private from your partner.



## APPENDIX T

	0	1	2	3	4	5	6	
	never			half-time			always	
								First
								Now
11. My opinions/ideas:								
B...I need my partner to approve of them.....( )..								..( )
R...My partner approves of them.....( )..								..( )
12. My partner's tidiness with home duties (inside/outside):								
B...I need my partner to be very tidy.....( )..								..( )
R...My partner is very tidy.....( )..								..( )
13. My partner's honesty with me:								
B...My partner should be completely honest with me.( )..								..( )
R...My partner is completely honest with me.....( )..								..( )
14. When I am unresponsive to my partner's sexual advance:								
B...He/she takes it as a general rejection.....( )..								..( )
R...I am simply declining to have sex.....( )..								..( )
15. My partner's needs, thoughts and feelings:								
B...I should know without being told.....( )..								..( )
R...I know without being told.....( )..								..( )
16. My partner's concern for me before friends, relatives:								
B...I should come first.....( )..								..( )
R...My partner puts me first.....( )..								..( )
17. Should my partner neglect home duties (inside/outside):								
B...It is best to say nothing.....( )..								..( )
R...I say nothing.....( )..								..( )
18. Emotional support:								
B...I rely on my partner for it.....( )..								..( )
R...My partner provides it.....( )..								..( )
19. If friends/relatives placed pressure on our marriage:								
B...I'd feel powerless.....( )..								..( )
R...There would be options/actions open to me.....( )..								..( )
20. The best fun in my partner's life:								
B...It should be with me.....( )..								..( )
R...It is with me.....( )..								..( )

## APPENDIX T

	0	1	2	3	4	5	6	
	never			half-time			always	
								First
								Now
21. On my sexual performance:								
B...I need my partner to compliment me.....								( ).. ..( )
R...My partner compliments me.....								( ).. ..( )
22. My contribution to our finance (earning/managing):								
B...The need to 'get it right' is on my mind.....								( ).. ..( )
R...I 'get it right'.....								( ).. ..( )
23. My attentions/charm/flirting: for my partner or another?								
B...They should be directed at my partner.....								( ).. ..( )
R...They are directed at my partner.....								( ).. ..( )
24. When my partner disagrees with my opinion/idea:								
B...I take it as a general rejection of me.....								( ).. ..( )
R...He/she is simply disagreeing with my opinion...								( ).. ..( )
25. My most private matters:								
B...My partner alone should know.....								( ).. ..( )
R...Only my partner knows.....								( ).. ..( )
26. My concern for my partner before my own interests:								
B...My partner should come before my own interests.(								).. ..( )
R...I put my partner first.....								).. ..( )
27. When I strongly object to my partner's behaviour:								
B...I should keep my objection to myself.....								( ).. ..( )
R...I keep it to myself.....								( ).. ..( )
28. My happiness:								
B...I mainly depend on my partner for it.....								( ).. ..( )
R...My partner provides it mainly.....								( ).. ..( )
29. If we faced financial pressure:								
B...I'd feel powerless.....								( ).. ..( )
R...There would be options/actions open to me.....								( ).. ..( )
30. Marriage: mostly romance or day-to-day practicalities?								
B...It should be romantic.....								( ).. ..( )
R...Our marriage is romantic.....								( ).. ..( )



## APPENDIX T

	0 never	1	2	3 half-time	4	5	6 always		
								First	Now
31. That my partner finds me interesting to be with:									
B...I need my partner to tell me.....( )..								..( )	
R...My partner tells me.....( )..								..( )	
32. My partner's contribution to our finance (earning/managing):									
B...That he/she 'gets it right' is on my mind.....( )..								..( )	
R...My partner gets it right.....( )..								..( )	
33. My partner's attentions/charm/flirting: for me or another?									
B...They should be directed at me.....( )..								..( )	
R...They are directed at me.....( )..								..( )	
34. When I disagree with my partner's opinion/idea:									
B...He/she takes it as a general rejection.....( )..								..( )	
R...I am simply disagreeing with his/her opinion...( )..								..( )	
35. My partner's most private matters:									
B...I alone should know.....( )..								..( )	
R...Only I know.....( )..								..( )	
36. My partner's concern for me before personal interests:									
B...I should come first.....( )..								..( )	
R...My partner puts me first.....( )..								..( )	
37. If my partner let me down financially (earning/managing):									
B...I'd rather say nothing.....( )..								..( )	
R...I say nothing.....( )..								..( )	
38. Any of my personal frailties (worry/insecurity/sadness):									
B...Marriage should help to diminish them.....( )..								..( )	
R...Marriage helps.....( )..								..( )	
39. If work commitments placed pressure on our marriage:									
B...I'd feel powerless.....( )..								..( )	
R...There would be options/actions open to me.....( )..								..( )	
40. The right mood/setting/build-up for me to feel like sex:									
B...Things need to be just right.....( )..								..( )	
R...Things are just right.....( )..								..( )	



## APPENDIX T

	0	1	2	3	4	5	6		
	never			half-time			always		
								First	
								Now	
<hr/>									
51.	My partner's demonstration of affection for me to others:								
	B...I need my partner to show it.....( )..						..( )		
	R...My partner shows it.....( )..						..( )		
52.	That my partner satisfies me sexually:								
	B...It is very important to me.....( )..						..( )		
	R...My partner satisfies me.....( )..						..( )		
53.	The meaning of sex for my partner:								
	B...Sex should be with deep respect/love/commitment( )..						..( )		
	R...Physical pleasure is his/her main concern.....( )..						..( )		
54.	When I disagree with any of my partner's behaviour:								
	B...He/she takes it as a general rejection.....( )..						..( )		
	R...I simply disapprove of that behaviour.....( )..						..( )		
55.	Our beliefs (ethical, religious, political, etc):								
	B...We should be largely in tune.....( )..						..( )		
	R...We are largely in tune.....( )..						..( )		
56.	If I dislike something about my partner.....( )..							..( )	
	B...My partner should change for me.....( )..						..( )		
	R...My partner changes for me.....( )..						..( )		
57.	When my partner advances sexually and I'm not in the mood:								
	B...I ought to respond anyway.....( )..						..( )		
	R...I respond anyway.....( )..						..( )		
58.	Spending evenings with my partner:								
	B...It would be my first choice.....( )..						..( )		
	R...My partner changes for me.....( )..						..( )		
59.	If my partner strayed sexually from me:								
	B...I'd feel powerless.....( )..						..( )		
	R...There would be options/actions open to me.....( )..						..( )		
60.	The power of passionate love:								
	B...It should dissolve our problems/differences....( )..						..( )		
	R...It dissolves them.....( )..						..( )		

## APPENDIX T

	0	1	2	3	4	5	6	
	never			half-time			always	
								First
								Now
61.	My partner's demonstration of pride in me to others:							
	B...I need my partner to show it.....( )..						..( )	
	R...My partner shows it.....( )..						..( )	
62.	My promptness doing my duties (chores, bills, etc):							
	B...It is very important to me to be prompt.....( )..						..( )	
	R...I am prompt.....( )..						..( )	
63.	My sexual fantasies: about my partner or another?							
	B...They should focus on my partner.....( )..						..( )	
	R...They focus on my partner.....( )..						..( )	
64.	When my partner makes a mistake/blunders/forgets:							
	B...It seems like a major problem to me.....( )..						..( )	
	R...It is only a minor difficulty.....( )..						..( )	
65.	If I am special to my partner:							
	B...He/she will spoil/fuss over me exclusively.....( )..						..( )	
	R...He/she spoils/fusses over me exclusively.....( )..						..( )	
66.	On my 'list' of important things:							
	B...Our marriage should come first.....( )..						..( )	
	R...I put our marriage first.....( )..						..( )	
67.	When my partner doesn't spend time with me:							
	B...I should accept it quietly.....( )..						..( )	
	R...I accept it quietly.....( )..						..( )	
68.	If I had my partner, but little else (eg: money, friends):							
	B...I ought to be happy.....( )..						..( )	
	R...I would be happy.....( )..						..( )	
69.	When I and my partner simply want different things:							
	B...Resolution seems impossible.....( )..						..( )	
	R...There are options/actions open to me.....( )..						..( )	
70.	My partner's moods:							
	B...I have definite requirements.....( )..						..( )	
	R...My partner's moods are acceptable to me.....( )..						..( )	

## APPENDIX T

	0	1	2	3	4	5	6		
	never			half-time			always		
							First	Now	
71.	For my contribution to home duties (inside/outside):								
	B...I need my partner to compliment me.....( )..						..( )		
	R...My partner compliments me.....( )..						..( )		
72.	My partner's promptness doing duties (chores, bills):								
	B...His/her promptness is very important to me.....( )..						..( )		
	R...My partner is prompt.....( )..						..( )		
73.	My partner's sexual fantasies: about me or another?								
	B...They should focus on me.....( )..						..( )		
	R...They focus on me.....( )..						..( )		
74.	When I make a mistake/blunder/forget:								
	B...My partner sees it as a major problem.....( )..						..( )		
	R...It is only a minor difficulty.....( )..						..( )		
75.	If my partner is special to me:								
	B...I will spoil/fuss over him/her exclusively.....( )..						..( )		
	R...I spoil/fuss over him/her exclusively.....( )..						..( )		
76.	On my partner's list of important things:								
	B...Our marriage should come first.....( )..						..( )		
	R...My partner puts our marriage first.....( )..						..( )		
77.	When I find my partner boring to be with:								
	B...I should tolerate it quietly.....( )..						..( )		
	R...I tolerate it quietly.....( )..						..( )		
78.	The important things in my life:								
	B...They should deeply involve my partner.....( )..						..( )		
	R...They deeply involve my partner.....( )..						..( )		
79.	If my partner's personal interests threatened our marriage:								
	B...I'd feel powerless.....( )..						..( )		
	R...There would be options/actions open to me.....( )..						..( )		
80.	My partner's general behaviour:								
	B...I have definite requirements.....( )..						..( )		
	R...My partner's behaviour is acceptable to me.....( )..						..( )		

## APPENDIX T

	0 never	1	2	3 half-time	4	5	6 always		
								First	Now
81. For my contribution to joint interests (home, assets,...):									
B...I need my partner to compliment me.....( )..								..( )	
R...My partner compliments me.....( )..								..( )	
82. That I make a good impression when we entertain others:									
B...It is very important to me.....( )..								..( )	
R...I make a good impression.....( )..								..( )	
83. My sexual activity: with my partner or another?									
B...It ought to be only with my partner.....( )..								..( )	
R...It is only with my partner.....( )..								..( )	
84. If my partner expressed physical appreciation of another:									
B...I would fear for our relationship.....( )..								..( )	
R...His/her distant admiration is harmless.....( )..								..( )	
85. Whenever I consider how we suit each other:									
B...I feel that my partner is the only one for me..( )..								..( )	
R...I could settle for someone else.....( )..								..( )	
86. My willingness to put myself about for my partner:									
B...I should be willing.....( )..								..( )	
R...I put myself about for my partner.....( )..								..( )	
87. My partner's faults:									
B...I should overlook them.....( )..								..( )	
R...I overlook them.....( )..								..( )	
88. Making important decisions:									
B...I want my partner to take chief responsibility.( )..								..( )	
R...My partner takes chief responsibility.....( )..								..( )	
89. If my partner were seduced by another person:									
B...I'd feel powerless.....( )..								..( )	
R...There would be options/actions open to me.....( )..								..( )	
90. My partner's physical appearance:									
B...I have definite requirements.....( )..								..( )	
R...My partner's appearance is acceptable to me....( )..								..( )	

## APPENDIX T

	0	1	2	3	4	5	6	
	never			half-time			always	
								First
								Now
91. For my contribution as a parent:								
B...I need my partner to compliment me.....( )..								..( )
R...My partner compliments me.....( )..								..( )
92. That my partner makes a good impression when we entertain:								
B...It is very important to me.....( )..								..( )
R...My partner makes a good impression.....( )..								..( )
93. My partner's sexual activity: with me or another?								
B...It ought to be only with me.....( )..								..( )
R...It is only with me.....( )..								..( )
94. If I expressed physical appreciation of another:								
B...My partner would fear for our relationship.....( )..								..( )
R...My distant admiration of another is harmless...( )..								..( )
95. Whenever I consider how we suit each other:								
B...I feel that I am the only one for my partner...( )..								..( )
R...My partner could settle for someone else.....( )..								..( )
96. My partner's willingness to put him/herself about for me:								
B...My partner should be willing.....( )..								..( )
R...My partner puts him/herself about for me.....( )..								..( )
97. If my partner's friends/relatives impose on our marriage:								
B...I should tolerate it quietly.....( )..								..( )
R...I tolerate it quietly.....( )..								..( )
98. My personal identity (i.e. who/what/why I am):								
B...It should be built around my partner.....( )..								..( )
R...It is built around my partner.....( )..								..( )
99. If my partner were dissatisfied with me in marriage:								
B...I'd feel powerless.....( )..								..( )
R...There would be options/actions open to me.....( )..								..( )
100. My general satisfaction with my partner in marriage:								
B...I need to feel satisfied.....( )..								..( )
R... I am satisfied with my partner.....( )..								..( )





APPENDIX U

Attributional dissonance sub-scale of BAM

(44 items)

Partner focused BAM item	Attributional Dissonance
1.	B1-R1
11.	B11-R11
21.	B21-R21
31.	B31-R31
51.	B51-R51
61.	B61-R61
71.	B71-R71
81.	B81-R81
91.	B91-R91
12.	B12-R12
32.	B32-R32
52.	B52-R52
72.	B72-R72
92.	B92-R92
13.	B13-R13
33.	B33-R33
53.	B53-R53
73.	B73-R73
93.	B93-R93
14.	B14-R14
34.	B34-R34
54.	B54-R54
74.	B74-R74
94.	B94-R94
5.	B5-R5
35.	B35-R35
65.	B65-R65
95.	B95-R95
16.	B16-R16
36.	B36-R36
56.	B56-R56
76.	B76-R76
96.	B96-R96
8.	B8-R8
18.	B18-R18
28.	B28-R28
38.	B38-R38
48.	B48-R48
88.	B88-R88
20.	B20-R20
70.	B70-R70
80.	B80-R80
90.	B90-R90
100.	B100-R100

APPENDIX V

Self attributional bias (SAB) sub-scale of BAM  
(25 items)

SAB item	BAM rating Self / Partner	
1.	R2 - R12	<b>Performance</b>
2.	R22 - R32	
3.	R42 - R52	
4.	R62 - R72	
5.	R82 - R92	
6.	R3 - R13	<b>Morality</b>
7.	R23 - R33	
8.	R43 - R53	
9.	R63 - R73	
10.	R83 - R93	
11.	- R4 + R14	<b>Catastrophisation</b> <i>(reverse scored)</i>
12.	-R24 + R34	
13.	-R44 + R54	
14.	-R64 + R74	
15.	-R84 + R94	
16.	R5 - R15	<b>Uniqueness</b>
17.	R25 - R35	
18.	R65 - R75	
19.	R85 - R95	
20.	R6 - R16	<b>Altruism</b>
21.	R26 - R36	
22.	R46 - R56	
23.	R66 - R76	
24.	R86 - R96	
25.	R10 - R20	<b>Ideality</b>

## APPENDIX W

### Set 1: Hypothetical data for B, R, D and H

(N = 20)

B	R	D	H
5	8	-3	6
6	8	-2	6
7	6	1	6
7	7	0	6
4	6	-2	5
7	6	1	5
7	5	2	5
7	8	-1	4
5	4	1	4
7	6	1	4
6	5	1	4
5	5	0	4
5	5	0	4
4	3	1	3
6	4	2	3
3	2	1	3
5	2	3	2
6	3	3	2
7	3	4	1
7	3	4	1

### Intercorrelations for B, R, D and H

	B	R	D
B	1		
R	.35	1	
D	.30	-.79	1
H	.07	.82	-.79

Note:

B = belief  
 R = reality  
 D = dissonance (B-R)  
 H = happiness

## APPENDIX W

### Set 2: Hypothetical data for B, R, D and H

(N = 20)

	B	R	D	H
10	8	2	6	
10	8	2	6	
7	6	1	6	
8	7	1	6	
7	6	1	5	
7	6	1	5	
5	5	0	5	
7	8	-1	4	
4	4	0	4	
5	6	-1	4	
4	5	-1	4	
4	5	-1	4	
4	5	-1	4	
2	3	-1	3	
2	4	-2	3	
1	2	-1	3	
1	2	-1	2	
1	3	-2	2	
2	3	-1	1	
2	3	-1	1	

### Intercorrelations for B, R, D and H

	B	R	D
B	1		
R	.95	1	
D	.88	.69	1
H	.88	.82	.80

Note:

B = belief  
R = reality  
D = dissonance (B-R)  
H = happiness

## APPENDIX W

### Set 3: Hypothetical data for B, R, D and H

(N = 20)

B	R	D	H
10	8	2	6
10	8	2	6
9	6	3	6
9	7	2	6
9	6	3	5
7	6	1	5
8	5	3	5
7	8	-1	4
4	4	0	4
6	6	0	4
4	5	-1	4
4	5	-1	4
5	5	0	4
5	3	2	3
6	4	2	3
5	2	3	3
5	2	3	2
5	3	2	2
4	3	1	1
5	3	2	1

### Intercorrelations for B, R, D and H

	B	R	D
B	1		
R	.75	1	
D	.46	-.24	1
H	.78	.82	.04

**Note:**

B = belief  
 R = reality  
 D = dissonance (B-R)  
 H = happiness