



**DIFFERENCES IN THE MAKING:
THE CONSTRUCTION OF GENDER IN AUSTRALIAN
SCHOOLING.**

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Date submitted: July, 1991

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ACKNOWLEDGEMENTS

Firstly I want to thank my supervisor, Dr. Jack Rowell, Reader in Education at the University of Adelaide, for his careful and sustained efforts to help me to complete this work. Without his encouragement and thought provoking commentary it may never have reached this stage. An early study of Dr. Rowell's had shown that teacher attitudes can and do have gendered effects on student outcomes in Australian schools. My investigation was informed by this perception and was directed at opening up the black box of school a little more widely. I was indeed fortunate to have such a supervisor.

Next I wish to record my enduring gratitude to my friends and colleagues in the Education community in South Australia for their willingness to listen and to discuss the themes of my work. In particular I would like to thank Jean Blackburn, Jack Cross, Joan Cunningham, Maureen Dyer, and Judith Kapferer, each of whom has been a valued source of inspiration and determination throughout this long haul.

I would also like to thank my family whose collective experience spanned the entire range of institutionalized education during the course of this work. As a consequence they have provided me with an invaluable source of insight, stimulation and disputation in the development of my argument.

Lastly and most importantly I must thank the many teachers, school administrators and students for their willing participation in my work. Everyone who has been a classroom teacher knows of the interminable series of interruptions that characterize every 'normal' school day and I am deeply grateful to the teachers for whom my presence must have been an added trial, albeit one borne with considerable grace and style. And I want to register an enormous debt of gratitude to the boys and girls who so willingly gave their time to explain the world of school to me with patience and dignity - and often sharp perceptions and great storytelling verve! Without their willing cooperation the study could never have happened.

DISCLAIMER

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

I consent to this thesis being made available for photocopying and loan if applicable if accepted for the award of the degree.

Signed:

Abstract

This thesis is concerned with schooling process. Its central focus is on the connection between institutionalized schooling and the constitution of gendered subjectivity in students. The particular contribution of this work lies in its

- (a) demonstration of the gender-laden nature of currently accepted pedagogical practice;
- (b) analysis of the connection between such practice and educational theory ; and
- (c) proposal of a theoretical framework which allows for the contradictory and contested nature of process, a perspective previously lacking in much of traditional educational theory.

Starting from a review of the literature showing evidence of gender differences in schooling outcomes, it is demonstrated that schooling has been implicated in producing these gender differences and hence the construction of gender, but the ways in which this occurs have as yet been only sketchily identified. Neither has there been an adequate theoretical formulation of the process.

My argument begins with a review of psychological theories of gender and sociological accounts of the school's role in the reproduction of social inequality. I propose a framework for an analysis of gender relations in education which utilizes some aspects of psychological and sociological theory approached through recent work in poststructuralism. Poststructuralism, with its focus on discursive practices, affords a theoretical entry into the lived experience of schooling in ways which reveal individuals positioning themselves as well as being positioned within the multiplicity of meanings available in any given situation. In this framework the determinism of the earlier theoretical approaches is avoided.

The substantive focus of the work is on an ethnographic study of a group of middle class children in the upper primary years of schooling. The girls and boys in the group were participants in interviews, questionnaires and testing as well as being the subjects of the ethnography. The research continued through the following year when the focus group of children entered high school. Some of the children attended a coeducational high school whereas others went to an all girls' high school. Part of the ambit of the research has been to contrast the experiences of the students in terms of the school's gender context and to comment on the merits of mixed as opposed to single sex schooling for girls. Other contrasts and comparisons built in to the design include boys' experience as compared to that of girls, primary school as compared to high school, mathematics classroom processes compared to those in other subjects, student classroom behaviour compared to behaviour outside the classroom. More generally the research aimed to identify those commonly accepted features of schooling practice which give rise to students' understandings of the world and their place in it in terms of gender division.

Ultimately gender relations are seen to be a continuous feature of the environment of the school and the classroom, even, albeit differently played out, in the single sex situation. While such gender relations are in some respects similar to processes in the wider society, it is here argued that there are important ways in which gender relations occur in the classroom and the school which are not simple replications of forms to be found in the world beyond school but are peculiar to the process of organized learning and instruction. This thesis deconstructs and reveals the gendered nature of concepts that are commonly found in analyses of schooling processes. These include, among others, the autonomous individual as learner, the problem solving experience, the practice of social skills and the negotiation of group membership. In this respect the process of schooling plays a crucial role in producing and maintaining the gender differences that characterize the total social formation.

I conclude that :

(i) the school is a critical site in the process of constituting gendered subjectivity;

(ii) the discourses which attend and constitute the academic study of education, emanating principally from educational psychology and sociology, have been shown to be less than adequate as a basis for a theory of gender in education. At the same time these discourses have been taken up in the daily practice of teachers and students in ways which relegate the issue of gender to being either a variable of individual psychology or else an attribute of a certain disadvantaged group. In this way gender becomes either an ineluctable fact or a "social problem" or both. And gender as an issue becomes constituted and re-constituted in these terms within schooling. The analysis of gender as problematic presented here reveals the limitations of traditional discipline boundaries and suggests that a post-structuralist approach offers a way out of the theoretical tangle that has hitherto constrained the study of gender in education.

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PhD thesis abstract
Adelaide University
April, 1991.



CHAPTER 1

The relationship between gender and schooling.

Literature review showing evidence of gender differences in schooling outcomes.

Argument. *That schooling has been shown to be connected to producing gender differences and hence the construction of gender but the ways in which this occurs have as yet been only sketchily identified and there is no adequate theoretical formulation of the process.*

(i) Statement of the problem.

Since the late 1970s educational research has given increasing attention to the question of gender and its relationship to educational processes and outcomes. The present work attempts some integration of the variety of conceptual approaches brought to bear on an examination of gender in education. The purpose of this thesis is to investigate

- (a) the role of the school in the construction of gender, and hence
- (b) the contribution of schooling to gender-based social inequality.

Initially this work will seek to identify those instances of normal schooling practice which give rise to gender differences in attitudes and understanding on the part of the pupils and teachers mutually engaged in the process of education. At the same time it is proposed that this work will contribute at the theoretical level to a greater understanding of ways in which schools work to reproduce or contest aspects of the broader culture and social structure in which they are located.

In the present chapter the relevant research into the relation between gender and schooling practice will be reviewed in order to establish the empirical basis for the claim that schooling has been linked to gender-related outcomes. Evidence will be produced from

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both overseas and Australian studies. The Australian work is listed separately for a combination of reasons:

1) Insofar as gender construction is here seen as part of a more general process of socialization, and as such is intrinsically connected to a particular cultural setting, I wish to both take note of and avoid the danger of extrapolating from overseas research conclusions which may be inappropriate in a local setting.

2) the structure of the school curriculum is specific to particular settings, and while there are certain variations between the Australian states, there are also more similarities than can be drawn between conditions in Australia and elsewhere.

The term 'gender' will be used to refer to those aspects of social distinction related to, but not directly based on, biological sex (Oakley ,1972; Tresemer,1976). It is noteworthy in this regard that researchers whose subjects are adults readily invoke concepts of 'masculinity' and 'femininity' in the distinction between sex and gender. To do so when one is investigating schoolchildren is hardly appropriate, and the observation underlines the degree of societal conditioning inherent in such constructs. Not all the literature reviewed in this section adheres to this convention however; at times categories of 'masculinity' and 'femininity' are applied to girls and boys, and several writers use the terms 'sex' and 'gender' interchangeably. In particular the ubiquitous term 'sex role' and related theory is more properly understood as 'gender role' (Tresemer,1976). The point here is not merely to argue the correctness of the terminology, but rather to emphasize the importance of distinguishing between genetic and environmental explanation, as this is an area wherein one basis of explanation readily slides into another (Hartley,1980).

(ii) Schooling and the construction of gender.

The focus of the research is on two interrelated processes commonly associated with schooling, namely socialization and the distribution of formal knowledge. The distinction

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between these two processes operates at the conceptual level for the purposes of identification and discussion. It is proposed that the two processes operate simultaneously and it is this interaction that is the concern of the present study. It is realized, of course, that the school is only one of a variety of institutionalized agencies whereby the stereotypes which operate in the world-at-large are brought to bear on the child. The media, especially television, the family, the medical professionals, the churches, the advertising industry are also involved in the child's developing self-awareness of gender implications. The school is, however, also involved as an agency publicly committed to providing equality of opportunity regardless of common aspects of social division such as race, sex or religion, and this commitment requires that attention be directed towards monitoring educational processes and outcomes. In a more pragmatic vein, Stanworth (1983) argues cogently for the school to be examined as an important site with respect to the development of gender difference:

The school is, moreover, the major agency through which they (the students) are confronted in a relatively uniform way with the standards and expectations of the adult community.
(Stanworth,1983,p.10)

An investigation of gender construction in schooling seems particularly appropriate in the light of the British findings that whereas parents tolerate (albeit uncomfortably) behaviour in their children which does not conform to the gender stereotype (Newson and Newson,1977), schools have been seen to insist on conformity and resist popular moves to produce more equal outcomes (Clarricoates,1981; Delamont,1983). The Maccoby and Jacklin (1975) hypothesis that children's gender conforming behaviour is reinforced by 'relative strangers' more than by their parents further directs attention to schooling structures and in particular to teacher-pupil interaction.

Further evidence which suggests that the school has a role in gender construction comes from Byrne (1978) who found that certain career guidance practices carried out in schools affected girls' career choices. Other findings comparing schooling practice and gender-typed outcome are more contradictory. Whereas Minuchin (1964) found American girls educated in a 'progressive, modern' environment were less gender-typed than those

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from a traditional school, Sussman (1977) found that pupils' own stereotypes become more extreme in 'progressive' classrooms and that this environment produces sexist (and racist) cultures. In addition the work of Anyon (1983) showed the interrelationship of gender and class in the schooling process and suggested that research needs to take account of the class background of the students as well as race and gender.

The accumulation of evidence from the above studies and others following under more specific headings strongly supports the argument that schooling practice contributes to the formation of gender stereotypes. The familiar contention that socialization is primarily achieved in the family in the first instance is not disputed here. Doubtless children bring to school class and gender related attitudes and understandings. Indeed as Bernstein (1977) has argued, there are basic facets of formal knowledge acquisition which are also derived from family background and through which children are differentially prepared for school subjects. Rather the present study seeks to establish ways in which schooling practice works to compound or to challenge the internalization and legitimation of those aspects of socialization which are gender-related and to conflate or refute the importance of gender differences in the formal acquisition of knowledge.

(iii) Gender and schooling: the evidence from overseas.

The issue of the relationship between gender and schooling is itself a reflection of the recent renewal of interest in women's studies and feminist theory generally. The last twenty years have seen an increasing identification of schooling structures and processes with gender-related outcomes. The ways in which this identification has taken place form the sub-headings of the following sections. In some cases this review will give detailed descriptions of the initial entry of research into this previously unexamined area, insofar as these earlier studies have set the scene for later work in the area. It is the contention of this thesis that while there is value in amassing evidence of the connection between schooling and gender construction, the standard ways in which this work has been carried out have

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not been productive of the sorts of insights into the process of this construction which would lead to emancipatory policy and practice. The last sub heading in this section will introduce two researchers whose work has been to challenge the standard avenues of investigation into the relationship between schooling and gender.

a. Curriculum choice.

In Britain prior to the 1975 Sex Discrimination Act, even the official curriculum was gender differentiated, with the girls channelled into languages, biology and homecrafts while the boys did physics, chemistry, wood and metalwork (Byrne,1975; Davies and Meighan,1975). However despite the passing of the Act, in 1978 Deem noted a tendency for girls' curriculum choices and CSE examination successes to cluster around arts subjects against a consistent trend for boys to enrol in scientific, mathematical and technical areas. Using the same evidence Byrne (1978) wrote:

Secondary schools may well be guilty of pre-empting the future career choices of girls by 'persuading' them by direct or indirect means to 'choose' subjects that are a less useful or relevant foundation for adult 'working' roles than those followed by boys. (Byrne,1978,p.137)

For Byrne (1978) the solution lay in the implementation of a core curriculum to be followed by boys and girls alike - one way around the vexing question of deciding whether the school was affecting choices or merely providing avenues for choices to occur. Stanworth (1983) provided further evidence of males and females making different subject choices and found that the differences became most pronounced in the senior 'A' level enrolments. Stanworth also noted an increase in the proportion of females staying on to complete secondary schooling, although fewer females qualified for tertiary entrance, a finding which echoed those of Cockroft (1982) and Kaminski (1982).

Several British educationists have described the secondary school years as a critical period for the establishment of gender differences in schooling (see for e.g. Davies and

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Meighan,1975). There is a problem here similar to that signalled by Byrne in the above quotation in her liberal use of quotation marks. It may be that the curriculum structure of the secondary school is such that choices are possible in ways that they are not in the primary school. As will be cited shortly there are research indicators of gender distinct experiences in the primary and preschool years but such effects are masked by the fact that all children proceed without examination and at more or less the same time into secondary education.

In the United States most young people complete high school, unlike their peers in Britain or Australia. The typical curriculum offered to American high school students allows for choice within a very broad range of subjects. One of the few possible generalizable gender differences in American education concerns the underrepresentation of girls in mathematics and science classes. In senior high school mathematics classes the ratio of males to females approaches three to one (Burton,1979; Fennema and Sherman,1977). Sells' data (1980) from Berkeley indicated that although 57 per cent of males entering tertiary study had taken four years of high school mathematics, only 8 per cent of females had done so. As can be expected the discrepancy in male/female enrolment in mathematics courses increases at tertiary level (Fennema and Sherman,1977).

Studies which reveal gender-related differences in curriculum choices despite all subjects being "equally available to all students" - as with the British work since 1975 - tend to invoke hypothetical explanations, usually in terms of 'sex role stereotype', which by and large represent girls as victims of societal limitation. Such explanations are of limited use in designing educational policies to counteract the effects of sex typing as they have not identified the processes involved. Even the more particular suggestions which emerge, such as that girls come to see mathematics, or school success, as a 'masculine domain', while seemingly plausible as explanations for the observed enrolment discrepancies, fall short of explaining how such attitudes are produced and hence fail to generate counter strategies.

b. Staffing structures.

In both Britain and the United States, the vast majority of primary school teachers are female. British figures reveal that women make up 77 per cent of primary school teachers (Acker,1983) whereas in the United States the figure is closer to 90 per cent (Kelly and Nihlen,1982). Males are more frequently represented at the higher levels and in senior administrative posts, even within the primary sector. In Britain, according to Acker:

While nearly all the heads of nursery and infant schools are female, women become increasingly underrepresented as we move up the age range. (Acker,1983,p.123)

In 1981 only 16 per cent of headships in primary schools were held by women in the United Kingdom (DES,1981), as were 20 per cent of elementary school principalships in the United States. It has been suggested that in this way the schools' staffing patterns reflect an idealized sexual division of labour by placing men and women in specific positions which involve certain relationships between one another as well as between them and the students. Typically then women are given the interpersonal role of teaching, especially at junior levels, reflecting an understanding of woman's role as nurturant, warm and personal, but significantly less powerful than that of the more impersonal male seniors and principals and administrators. As Strober and Tyack (1980) suggest "women teach and men manage", a situation which is reflected in the recent finding that in Scotland women teachers were only half as likely to apply for promotion as their male counterparts (Marsh,1989).

In secondary schools in Britain and America the proportion of males and females is more even, but once again males vastly outnumber females in senior administrative positions (Acker,1983; Kelly and Nihlen,1982). Also at secondary level where the curriculum divides into subject areas usually associated with particular teachers, the preponderance of women in pastoral areas or teaching humanities or domestic science contrasts with their

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scarcity in areas such as mathematics and science. At the same time men are more likely to teach senior classes, women junior classes, and this too is claimed to have an effect on student perception of gender-appropriate roles, and the relative importance of certain subject areas (Simpson,1974; Acker,1983).

Some educational theorists (Deem,1978; Bowles and Gintis,1976) have proposed that schools create systems of social relations which both mirror the unequal divisions of the broader society and at the same time prepare entrants to that society. Certainly in their typical gender-distinct staffing patterns schools in America and Britain would seem to reflect an unequal power relation between males and females. However to date such a process has not been rigorously examined in terms of its actual rather than hypothetical effect on students. Kelly and Nihlen (1982) are rightly critical of studies which assume that an analysis of school staffing represents 'the sum total of school knowledge'. One of the approaches to be taken in the present work will be to investigate whether or not students are picking up the messages which theorists claim are embedded in gender differences in staffing. The possibility of alternate interpretations will also be considered. It could be, for example, that the classroom teacher is perceived by students as the most powerful and influential person in their experience of schooling and that the effect of gender divided roles in the official school structure has not penetrated student consciousness. Until more is known in this area it is not possible to claim that the existence of gender imbalance at the official level creates understandings of gender division and gender appropriate roles in students.

c. Curriculum Materials.

Byrne (1975) surveyed resource allocation in 133 schools (88 mixed, 20 boys' and 25 girls') in Britain over the period 1945 to 1965 and found that better resources, and resources of different kinds, were considered to be necessary for male pupils rather than females. Not only did the inequality appear in per capita expenditure, but also in more

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subtle forms such as the time tabling of girls' biology classes in converted classrooms while boys were taught in the laboratory. Similarly Delamont (1980) recorded girls being assigned to marginal places or having to share equipment when they do enter 'non-traditional' areas such as mechanical drawing, thereby experiencing a teacher transmitted perception that they are less than serious about the subject. Other researchers have recorded differences in expenditure on sporting equipment which underscores gender differences in status and participation. Boys' sporting equipment is a more major item of school expenditure than girls'. It is suggested by Belotti (1975), for example, that girls grow up thinking that their games are less important than those of boys. One study which investigated the impact of differential treatment was that of Ross et al.(1972) who studied resource allocation in 12 British comprehensives. They found that 4 of these schools allocated fewer resources to girls than to boys and in these, but not in the others, girls made less progress.

Much research has been carried out on the curriculum materials themselves. Analysis of early reading schemes and children's literature has shown such materials to be dominated by male actors whereas women and girls are typically presented in minor passive or domestic roles. Clarricoates (1980) writes:

Competent and up-to-date research reveals the prevalence of sexism in most reading schemes, children's books and secondary instructional texts.
(Clarricoates,1980,p.190)

The work of Lobban (1974,1975,1978), Frazier and Sadker (1973) and Spender (1980) supports this claim as does the work of Kelly (1981) in her analysis of secondary mathematics and science texts. While some researchers claim that in such teaching materials schooling practice mirrors the inequalities of the non-school world, it has also been suggested that schooling practice is in fact out of touch with the non-school world wherein women occupy a greater range of activities than are typically portrayed in school texts (Delamont,1983). The school is thus seen as conservative and anachronistic, and possibly is recognised as such by the students. There is, for example, the inherent contradiction in the role of the female teacher who is also a parent using materials which portray women

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limited to hearth and home. There has not been sufficient research on the effect of such materials on the students. It may be that students are more affected by the gender of actors in the secondary mathematics or science texts which are inserted in a deliberate attempt to encourage identification, than they are by the overwhelming maleness of the actors in the early readers.

There is less room for dispute, however, in the findings of those who have surveyed the history texts. Here both British and American researchers discovered that scant attention had been paid to the position of women in history (Treckler,1973; Davies and Meighan,1975; Spender,1980). Insofar as the study of history is germane to the way in which a society understands itself in the present, the case for the textbooks promoting a discriminatory world-view appears conclusive. A further point relates to the way in which school history has concerned itself almost exclusively with events in the public sphere, the business of the state, of government and industry, and, by its minimal treatment of women, has reinforced what has earlier been referred to as the sexual division of labour, with women limited to the private or domestic sphere.

d. Teacher attitudes.

The link between teacher expectation and educational outcome has been popularly acclaimed in educational research since the widely cited (albeit not uncritically) work of Rosenthal and Jacobsen (1968). Subsequent work (e.g Beez,1968; Rist 1970; Keddie,1973) has supported the overall conclusion, namely that students internalize the norms and expectations of their teachers and hence tend to perform in the anticipated manner. Such an outcome has particular relevance for work on gender difference, insofar as it forges a connection between teachers' expectation of different achievements of boys and girls and the production of gender difference.

American research has provided a steady stream of evidence which indicates that teachers

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typically hold different expectations of male and female pupils in terms of personality, behaviour and achievement. Feshback (1969) showed that teacher perception of student behaviour is mediated by gender in that the typical boy was seen as aggressive and extroverted while the typical girl was seen as introverted and dependent. In their exhaustive review of the psychology of sex differences Maccoby and Jacklin (1975) list several studies which showed that teachers' expectations and interpretations of behaviour varied in terms of pupil sex. In other words behaviour that was seen as extraordinary and disruptive on the part of a girl would be tolerated and accepted as normal from a boy. Ricks and Pyke (1973) studied attitudes of a sample of Canadian teachers and found that these teachers adhered to gender-specific behaviour expectations. The Canadian teachers also stated that they preferred teaching boys, a finding replicated in Clarricoates (1980) work in British schools. In this study teachers are quoted as saying:

On the whole you can generally say that the boys are far more capable of learning, nicer to teach.

Boys are interested in everything and are prepared to take things seriously.

Although girls tend to be good at most things in the end you'll find it's a boy who's going to be your most brilliant pupil.

(Clarricoates, 1980,p.33)

While much of the work on teacher attitudes to male and female students has focussed on primary school teachers, Stanworth (1983) working with sixth form college students and teachers in England found that at this level also teachers held gender-related expectations of student attitude and achievement, and that these expectations were perceived by the students. In addition, the work of Hartley (1980) revealed that British primary teachers continued to understand and account for pupil behaviour in terms of gender, although the interesting feature of this study was to show that teachers' gender-typed expectations are to some degree mediated by class. The middle-class female pupil was seen by the teachers as constrained by gender, whereas the teachers' perception of the problem of the working-class girl related to socio-economic conditions. Anyon's work (1983) in American classrooms also reveals the interaction of gender and class as affecting teachers' perceptions of pupils and expectations of achievement. Work in the area of teacher

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attitudes has continued to reveal pronounced gender differences. In a detailed study of this area Mayer et al (1989) found that teachers nominated boys more often as having high potential, as best students, and especially so in mathematics. They found also that more boys than girls occupied the minds of teachers after school, a finding that suggests that the greater salience of male pupils is not limited to the classroom domain.

Given the ubiquity of popular cultural understandings concerning gender appropriate behaviour, a culture in which teachers share, it seems hardly surprising that research on teacher attitudes should reveal different sets of expectations for male and female students. A potentially more productive line of enquiry has concerned ways in which these attitudes are transmitted to the students. To some degree it is argued that the formal structure of the school conveys explicit messages about expectations - for example in the effect of streaming in British studies by Keddie (1973), Hargreaves (1967) and Lacey (1970) the students in the lower streams were well aware of the meanings embedded in such a structure. Separation on the basis of gender, even in innocuous details such as where one hangs a coat, takes a drink, convey a similar type of message (Delamont,1983). With the advent of comprehensivization the British schools no longer practise academic selection in the wholehearted manner which typified the earlier studies. Subsequent research (e.g.Ball,1981) has concentrated on ways in which understandings are negotiated about people and potentialities which do not rest on the support of the formal overt structures. In this work students are seen to rate themselves and their peers on ranges of ability at different subjects without the rankings being built in to a system of streamed classes or seat positions in classrooms. Such research utilises the concept of the hidden curriculum as the key to understanding the unwritten messages of the school. Educational theorists suggest that the hidden curriculum is a powerful mechanism whereby students internalize rules associated with belonging to particular groups associated with gender and class (e.g.Apple,1979,1982). One way of investigating the hidden curriculum at work in schools has been through studies of classroom interaction.

e. Classroom Interaction.

Some researchers have turned their attention to classroom processes in an attempt to develop an understanding of gender differences in enrolment patterns and achievement levels noted earlier. One line of approach has been to document teaching practices in pre- and primary schools which predispose children to see themselves as one of a group (e.g. by school, house or home room) and at the same time to realize that they belong to one of two gender-divided subsets of that group. To this end Delamont (1980) describes numerous instances in which primary age children are inducted into an understanding of gender-specific behaviour. King(1978) also worked in British primary schools and documented many examples of interactions which he described as related to attitude formation, for example:

A boy has found a snail in the wet sand box. When a girl went to touch it the teacher said, "Ugh, dont touch it, it's all slimy. One of the boys, pick it up and put it outside". (Delamont,1980,p.43)

Clarricoates' work (1980) in four different primary schools revealed that sorting by sex was a familiar feature of classroom organization in all of the schools, and that gender-stereotyped behaviour was not only expected but viewed as right and proper by all the teachers concerned. In Clarricoates' work there were some interesting indications that the class background of the school community mediated to some degree the ways in which gender conformity was produced. The working class school, Dock Side, provided the most evident type of gender segregation, a point further developed in the work of Anyon (1983) in American schools. Clarricoates also noted the sense of rivalry deliberately inculcated in young children, with one gender being constantly compared with the other in ways which served to delineate behaviours and reinforce boundaries between the two. As Clarricoates suggests:

What is significant about these school routines is the inculcation of gender in a much more ritualistic and formal way than the students experience in the home. (Clarricoates,1980,p.191)

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Delamont (1983) concurs with this perception when she details evidence of parents being willing to accept gender atypical behaviour within the home while warning the child not to behave in such a way in a public situation. Again the school emerges as a critical site for the learning of gender appropriate behaviour and attitudes. There is evidence that girls and boys experience school differently. Llewellyn, working with British high school girls, argues from her research that there are inevitably distinct male and female experiences of schooling just as there are shared levels of meaning derived from belonging to the same social class or ability group (Llewellyn,1980).

The most widely cited work on gender construction in classroom interaction comes from Spender (1980,1982) who observed classes in British schools where, she claims, teachers typically spend two-thirds of their time with the boys and only one third with the girls. Furthermore Spender and colleagues who involved themselves in action research on differential time allocations discovered that both they as teachers and the male students felt they had been giving most of their time to the girls when in fact the time spent with the girls was less than 50 per cent. Since publication Spender's claims have attracted much support from feminist educators and certainly the insight which relates gender inequalities to time spent in classroom interaction provides more potential for identification and compensation than was afforded by earlier studies which accepted uncritically the boys' demonstration of a greater need for attention as part of the male psyche. There are, however, some limitations in Spender's work. She uses, for example, number of interactions and percentage of time spent virtually interchangeably. If a teacher spoke to four boys for each girl the claim would be that 80 per cent of teacher time was spent with the boys as compared with 20 per cent with the girls. The argument fails to take into account the amount of teacher time that is taken up with addressing the class as a whole, in the form of lesson introduction, detailing of assignments and administrative instructions. Naturally such a process will vary with subject matter, year level and particular teacher. Other educational researchers have commented with some chagrin, however, that despite the trend for teachers to value pupils as individuals, around 80 per cent of lesson time is

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taken up with declamatory whole class directed chalk and talk routines. On this point Lortie (1975) suggests, for example, that:

... a simple bit of arithmetic discloses that teachers can hardly spend more than a few minutes with each child during the course of a working day. Most of their teaching behaviour must therefore be addressed to groups of children.
(Lortie,1975,p.152)

Another criticism of Spender's work is that the claims rest on the quantitative measure of the number of interactions (which does not equate to the amount of time), while the qualitative nature of the interaction is not mentioned. Thus from Spender's work it is not possible to discover whether the greater number of interactions between teachers and male pupils were of a disciplinary or a work-oriented nature; nor is it known who initiated the interactions, teacher or pupil, all of which questions are important in analysis of power differentials in the classroom. Spender does claim that more teacher time equals more teaching, however without further detail this claim is not substantiated. In a summary of Spender's work, Delamont (1989) writes:

It is perfectly possible that Spender's claims are true, but it is definitely true that her data are inadequate, her methods left so unspecific that her work cannot be replicated, and sex-equality not advanced by such polemical and unsubstantiated claims.

(Delamont,1989,p.271)

Earlier American studies had revealed that teachers' more frequent contacts with boys had tended to be of a disciplinary nature, with the low achieving boys attracting the most teacher contact (Brophy and Good, 1970). A more subtle investigation carried out by Gore and Roumagoux (1983) concerned the amount of 'wait time' given by teachers, a variable already shown to be related to expectation (Rowe,1974). Gore and Roumagoux found that teachers gave significantly more wait time to boys than to girls in primary school mathematics classes. Given the Tobin (1987) finding that increases in wait time are associated with increase in achievement level, it seems there is evidence to support the claim that classroom processes are at least partly responsible for gender related differences in mathematics achievement.

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Stanworth's work (1983) examined gender and schooling in an English sixth form college. In this study the students showed that they were aware that the male students dominated the teaching time by asking more questions and generally attracting more teacher attention. However Stanworth's students were considerably older than those in the other studies and it seems reasonable to expect that questions of gender connect with understandings in different ways for this group than for younger children. There is evidence that boys receive more teacher contact even at the pre-school level (Serbin et al,1973) and also at primary school (Brophy and Good,1970) where boys were seen to have more work-related interactions and evaluative comment. Another American study (Dweck et al,1978) noted that whereas girls were more likely to be praised for good behaviour and criticised on the basis of academic work, boys were more likely to be criticised for behaviour and praised for academic achievement, a further indication of Spender's contention that sitting side by side in the classroom did not guarantee equality of treatment.

While Spender (1980) claims that female teachers are equally likely as males to dispense disproportionate amounts of time to male and female students, other researchers have found the time differential to vary with the subject being studied. Leinhardt et al (1979) made detailed observations of teacher-student interactions in primary classrooms where it was discovered that whereas boys received more attention from teachers in mathematics classes, girls received more teacher attention in reading. Their finding conflicted with that of Good,Sikes and Brophy (1973) who had found when working with junior high school classes that boys received more of all types of interaction than did girls in both mathematics and social studies classes. This study also noted that boys' greater proportion of teacher contact was brought about by their initiating proportionally more contacts than did the girls, by seeking teacher attention, by calling out questions and answers, a feature also registered in the work of Irvine (1986). However, Becker (1981), working with an older group of American high school girls, discovered that although teachers initiated more contacts with boys and these were of a work-related nature, the girls initiated more of all kinds of contacts with the teacher. Becker hypothesized that the effect of the women's movement in

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promoting assertiveness and encouragement of female achievement might have had an effect on interaction patterns. One could also hypothesize that it is more acceptable for a girl to request help in mathematics classes, as this is an area in which girls are not expected to excel.

The issue of gender discriminatory classroom treatments continued to attract comment and research attention. In particular researchers took up the issue in the context of science classrooms, most evidently in the Manchester based GIST project (Girls Into Science and Technology) and related writing (Kelly,1985,1988; Whyte,1984; Riddell, 1989; Jones and Wheatley,1989). By the late 1980's studies of classroom interaction in both British and American schools had produced a good deal of data with implications for gender construction but as yet there were no clear indications that the observed differences in teacher-student interactions were connected to student attitude and self perception. The summary position reached by Bossert (1981) appears to remain applicable:

These results leave us in a muddle. Teachers do treat boys and girls differently, but the extensiveness of this differential treatment, whether it is perceived by students and how it might affect their sex-role behaviour and attitudes is unknown.

(Bossert,1981,p.180)

There is clearly a need for more research in this area if the apparently plausible links between classroom experience and student perceptions of gender are to be properly made.

f. Student evaluation and assessment.

An area of research which has particular bearing on classroom interaction is the small but growing body of research which suggests that assessment practices are also permeated by gender-related understandings. If the evidence from the classroom interaction studies cited above can be said to reveal sex differences in teacher expectations it seems logical to expect that such differences may also be reflected in the subjective evaluation of pupil's classroom performance and work submitted for assessment. Bradley's study (1984) of sex bias in evaluation of students at tertiary level was carried out across five different (unnamed)

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discipline areas and showed a tendency for markers, especially for those who knew little about the student other than name (and hence sex) to be influenced by the sex of the students. In an examination of secondary school students and teachers, Spear (1984) found evidence of "a clear tendency on the part of the teachers to overrate the work of a boy compared to that of a girl" in science marking (Spear, 1984,p.58). In particular researchers have investigated the style of assessment item (i.e. multiple choice as opposed to free response) and found that males are advantaged by multiple choice approaches across the subject range (Murphy, 1982; Bolger and Kellaghan, 1990; Mazzeo, Schmitt and Bleistein, 1991). There is some suggestion from this work that the sex differences in achievement are simply a test artefact, however some writers also hypothesize that the greater verbal ability of females leads to their advantage on constructed responses whereas the male context of items accounts for male superiority on multiple choice. Such results are reflected in evidence of gender difference in reactions to success and failure at broader cultural levels too, for example in the work of Feather and Simon (1975) wherein males are evaluated more positively (and females more negatively) following success on high status tasks with the reverse being true for low status tasks. How such differences arise, and how they are interpreted by the students, remain topics for further investigation.

Two areas of particular interest which will be investigated in some detail in the present study are now introduced, noting that there is some overlap between these and the topics already covered. The first of these concerns girls and mathematics education, the second has to do with school organization and the debate between the relative merits of mixed or single sex schools.

g. Girls and mathematics.

As a particular curriculum area mathematics provides a site where many of the aforementioned gender differences emerge. Researchers in this area have noted that as soon as mathematics courses become optional, usually at some stage during the high school

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years, there is an immediate gender imbalance in enrolments which increases in subsequent years to the degree that boys are many times more likely than girls to remain in mathematics education until the end of secondary school (Schildkamp-Kundiger,1982). Such a finding holds true across different cultures, but there are intercultural variations, suggesting that persistence and achievement in mathematics education is related to attitudes to gender and valuation of mathematics within a particular culture. For example there is intercultural variation in the provision of core curriculum so that there are some schooling systems in which all students must do a general form of mathematics throughout high school whereas in others it is not compulsory beyond the early secondary years. In a cross cultural study of mathematics enrolments Finn, Dulberg and Reis (1979) found that as soon as mathematics became an optional enrolment girls in each case withdrew from mathematics courses in larger numbers than boys, and in particular the authors note:

During the last year of secondary school, sex differences are largest for mathematics specialists in countries where stringent selection procedures are at work.

(Finn,Dulberg and Reis,1979,p.495)

Evidence from such cross cultural work is valuable in that it supports the concept of gender as a social construct rather than reflecting innate cognitive differences. Because mathematics is popularly regarded as fundamentally a cognitive enterprise, persistent gender-related differences in enrolments and achievement serve to maintain the notion of innate gender differences (see for e.g. Benbow and Stanley,1983). Research reveals that both teachers and students regard mathematics as an area in which boys excel (Weiner,1980).

One line of research in mathematics education has been to identify particular areas in which consistent and significant gender differences occur. Stable gender differences do not emerge until late childhood when the differences in favour of males appear and increase from that time (Maccoby and Jacklin,1975). Wood (1976) proposed a 'comparison factor' to account for girls' lower achievement in problem solving, probability and space-time relationships. This 'comparison factor' related to concepts of proportionality

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and in Wood's tests this was the area in which consistent sex differences in favour of males were seen. While such a proposal is in keeping with neo-Piagetian psychological theory in which understandings of proportional interrelationships are seen as one avenue of formal operational thinking, it cannot, despite the theoretical refinement, explain the variance within the female population. There are and have always been a minority of women for whom mathematics poses little problem. Researchers in both the United States and Britain have frequently associated achievement in mathematics with time spent in studying the subject. In the work of Sharma and Meighan (1980) the sex differences in mathematics achievement at O levels largely disappeared when the variable 'other mathematics-related courses' (e.g. physics, mechanical drawing etc.) was controlled for, thus showing that girls who undertook mathematics related courses were equally likely as boys to be among the high achievers in mathematics. The striking feature of this study was the degree to which course enrolments were associated with gender. The authors conclude that "boys' superior performance on GCE O levels in mathematics seems to be attributable to boys' greater mathematics-related experience in other non-mathematics courses". This conclusion raises once again the question of why it is that boys are much more likely to enrol in mathematics related courses than are girls.

Keys and Ormerod (1977) investigated reasons for subject choice in secondary school and discovered that perceived easiness and preference were closely related for girls but not for boys. This latter study attempted to establish a 'gender' of subjects from sex difference in subject preference and showed that physics, chemistry and mathematics were the most masculine, a finding duly reflected in the imbalance in enrolments in these areas, with the 'male' subjects being perceived as difficult, 'female' subjects as easy. Although more recent studies suggest that sex-typing of mathematics is decreasing, it seems that male prejudice against girls involvement in mathematics still exists, at least in girls' minds (Schildkamp-Kundiger, 1980). While the majority of investigations of student subject perception with regard to gender stereotype have been carried out at secondary school level, studies of tertiary students continue to reveal that these people hold gender stereotypic

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perceptions of tertiary disciplines (Archer and Freedman,1989). To date there has been no systematic investigation of the development of mathematics being seen as male appropriate in the primary school years.

Psychological variables such as student attitude to and confidence in mathematics have been a focus of some of the American research into girls and mathematics. Fennema (1981) noted that confidence in mathematical tasks was related to mathematics achievement and that boys high in confidence received much more attention from their mathematics teachers than any girls, whether they were confident or not. Another feature of Fennema's research concerned attribution theory. It was discovered that boys attribute their success in mathematics to stable factors such as ability and their failures to unstable factors such as luck or lack of effort. Girls on the other hand tended to attribute their success to unstable factors such as luck or effort, and their failures to stable factors such as lack of ability. From these results the writers took up the concept of 'locus of control' as one way of describing these differences. Males tend towards an internal locus of control (taking responsibility for outcomes) whereas females tend towards an external locus of control (in which outcomes are explained in terms of forces beyond the control of the individual). This orientation has led into the work on learned helplessness (Dweck et al 1975,1976,1978,1980) and the gender difference appears to be most striking in the subject area of mathematics (see for example, Ryckman and Peckham,1987).

Fennema and Sherman (1977) had looked at gender-related differences on spatial tasks and had established the widely accepted finding of a difference in favour of males in this area from late childhood. They also pointed out, however, that the size of the difference between males and females in this area is not nearly large enough to account for the size of the variance in mathematics enrolments and achievements, a conclusion also reached by a recent study which investigated gender differences in science achievement:

Almost four decades of research with embedded figures tests ... have failed to show a sex difference in disembedding ability that is large enough to account for the sex difference in science achievement. The idea that girls do not do as well as boys in science because they are less analytical

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or more field dependent is not supported by evidence. An explanation of the science achievement difference must be sought elsewhere and at present awaits further study.

(Howe and Doody, 1989, p.708)

Fennema (1977) had also noted that spatial relations is only weakly related to mathematics achievement. Several American researchers argued strongly for gender differences in mathematics achievement to be explained by socialization practices which lead to 'math avoidance' in capable adolescent girls and women (Fennema,1977,1979; Sherman,1978; Fox,1977). There is also the problem of explaining why it is that girls, who as a group emerge as capable mathematics students in the primary school years, give way to the boys in secondary school.

Past research has shown that girls do as well as boys in mathematics classes through their formative years, yet they do not expect to do as well and are less likely to go on in mathematics.

(Eccles,1985,p.313)

Eccles offers a hypothetical explanation for this phenomenon in terms of

... the extent to which girls and boys differ in their interpretation of achievement outcomes because of different information they receive from their social environment. (Eccles,1985,p.314)

In an argument very similar to that put by Sharma and Meighan, Fennema also found that the gender difference in mathematics achievement was largely related to time spent studying mathematics, and that when this factor was controlled the difference disappeared. Such a contention has been disputed by Ridley and Novak (1983) who argued that differences in high school mathematics enrolments were not sufficient to explain the size of the gender difference in post school mathematics achievements. Instead Ridley and Novak propose gender differences in cognitive style, the details of which they do not specify, to explain differences in outcomes. While recognizing that cognitive style does not imply the necessity of innate differences in cognitive structure, the phrase has been increasingly used by cognitive researchers to explain gender based differences in educational outcomes. Ormerod (1975) had signalled such an approach by suggesting that:

A considerable number of findings ... indicate that, in science at any rate, boys and girls have different learning styles and respond differently to various teaching strategies and types of teacher behaviour. Thus the teaching of both sexes side by side can become a more difficult operation than the teaching of either sex alone. In the coeducational class the teacher

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may unwittingly adopt practices which encourage the boys, while reinforcing the girls' belief that physical science is a male preserve.
(Ormerod, 1975, p.265)

The issue of single sex schooling and the implications of gender contrast in learning and teaching practices will be discussed in the next section.

One aspect of mathematics education which is frequently seen as having important consequences for considerations of gender is the connection between mathematics achievement and post school education and career opportunities. In a survey of American research Fox (1977) found many studies which suggested that girls were less oriented towards careers outside the home than were boys , and that the usefulness of mathematics was less evident in the traditionally accepted careers for women than for men. Thus she argues that girls may be less motivated than boys to succeed in mathematics. The work of Horner (1972) on motivation had suggested, however, a complex interrelationship between motivation and achievement, especially in the case of female academic achievement in an area traditionally associated with male achievement such as mathematics. Horner proposed a construct that she labelled 'fear of success' which could work against achievement even though the subjects were highly motivated. Similarly Nash (1979) proposed that both sexes see achievement and success as male traits, and that such perceptions become particularly important during adolescence. Meanwhile Preece's work (1979) in the U.K. revealed that boys hold significantly more positive attitudes towards mathematics than girls at age 13, and that for both boys and girls the most common reason for liking mathematics was its perceived usefulness in getting 'a good job', a finding which would support the Fox hypothesis. Subsequently, Simpson and Olivia(1985) found that student motivation and positive attitudes towards mathematics and science declined steadily across the grades (6-10) with significant sex differences. This picture was confirmed in the work of Licht (1987) which showed that girls were likely to have decreasing mathematics confidence as they became older. Similarly Roberts et al (1987) reported that the relationship between self-image and achievement increased for boys and decreased for girls as they moved from the sixth to the seventh grade. In this study a series of repeated measures revealed a positive relationship between self-image and high mathematical

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achievement among boys and a negative relationship among girls. Such research does not begin to explain the development of the differences in attitudes towards mathematics except in fairly vague generalizations which usually involve the concept of gender stereotype. Without more specific formulations which describe the processes whereby stereotypes are generated and transmitted it seems unlikely that a solution to the problem of 'female underachievement' in mathematics will be reached.

The current period of high female youth unemployment has generated increased attention towards girls' mathematics education particularly as technological advances have eroded more traditional areas of female employment. Research in mathematics education for girls is increasingly canvassing a wider area than that of the mathematics classroom, and has increasingly been drawn to address what Saraga and Griffiths (1981) described as 'more macro political/ structural/ cultural explanations'. What does emerge clearly from the bulk of the research cited here is a turning away from theories of innate sex differences in cognition to a much more complex series of concepts which centre on the constructed nature of gender and of knowledge, within which framework mathematics education provides a useful site for investigation.

h. Coeducation or single sex schooling?

The debate between the relative merits of schools organized along the lines of coeducation as opposed to those for girls only has continued to attract attention from educationists concerned about girls' education. Many books and articles have addressed this topic (see for example: Byrne,1978; Deem,1978,1981,1984; Cowell,1981; Delamont,1980,1883; Spender,1980,1982; Bone,1983; Harvey, 1984; Stables,1990; Payne and Newton, 1990), but by and large the question leads only to tentative answers. Cross cultural studies reveal no clear relationship between the proportion of single sex schooling opportunity and mean educational achievement (Finn, Dulberg and Reis,1979,p.494). Although somewhat inconclusive, research in this area reveals a complex interaction of variables. Shafer

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(1976), for example, noted that in most countries some, if not all, of the single sex schools are more prestigious in that they serve students from higher socio-economic levels and are considered to provide an education superior to that offered in the coeducational schools. The question was studied in British schools and the results published in a three volume work by R.R.Dale (1969,1971,1974) which came out unequivocally in favour of coeducation as promoting 'optimal adjustment to life'. As it happened, such a finding was in keeping with governmental policy of the time which was promoting the move towards comprehensivization and for many the issue was thought to be closed. Data used in Dale's work consisted of enrolments and academic results in both types of school, coupled with extensive interviews with students, past students and teachers. While the interview material mainly supported Dale's conclusions, the academic profile of student achievement made the overall adoption of coeducation questionable. Here, as in other subsequent British research (Ormerod,1975; Finn,1980, Shaw,1980), it was seen that, with ability controlled, girls achieve more highly in a single sex environment, whereas boys do equally well or better in coeducation. Husen (1967) had earlier reported on the basis of cross cultural data that sex differences in attitude to mathematics were generally smaller between students attending single sex schools.

Attention has also been drawn to the somewhat paradoxical situation in which girls in single sex schools are more likely to enrol in and continue in mathematics and science education even though such schools are very often less well equipped in such areas than are the coeducational schools. To some degree this anomaly can be explained in terms of the social class origin of the pupils. As the inheritors of the old grammar school tradition in British education, many of the single sex schools are 'selective' which implies some combination of academic and/or social privilege, and are thus more likely to aspire to high academic achievement. Cowell (1981) also explains the differences associated with girls at single sex compared to coeducational schools along class lines, but she claims the differences are due to the working class attitude to gender appropriate behaviour being more rigidly defined than that of the more privileged. However in a Lancashire study which

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used students from similar class backgrounds, the achievement of academically able girls was associated with education in a single sex school whereas bright boys did equally well whether they attended single sex or coeducational schools. Chandler (1980) argues on the basis of long experience in educational counselling that girls are more influenced by the type of school and school atmosphere than are boys, a position also taken by Block (1984) in her investigation of American schools.

However, the comprehensive review of the evidence published in Bone (1983) does not support the contention that school gender context is of itself fundamentally significant in influencing girls' schooling outcomes. Bone concluded that the subject mixes taken by girls were influenced far more by the *type* of school they attended (comprehensive, modern, grammar or independent) and the *style* of school (traditional or not) than by whether or not the school was single sex. At the same time Bone reports a finding that the girls from single sex schools "tended to look more favourably" on "male" areas of study such as mathematics and the physical sciences, although this tendency did not result in continued enrolment. Subsequently Harvey's work on subject preferences of third year secondary school pupils showed that there were marked gender differences in subject preference and that single sex schools were seen to reduce the polarization of subject preferences found as typical in mixed schools (Harvey,1984). It seems there is evidence to suggest that single sex schooling for girls is connected to a less stereotyped attitude to subject areas, even if this does not bring about an increased incidence of choosing to continue in those subjects.

By comparing the educational encounter within differently structured institutions it seems some understanding may be reached about ways in which attitudes which affect educational outcomes are developed. Some educationists have hypothesized that girls' superior academic performance in a single sex environment is related to the opportunity to interact with female teachers and classmates across the whole curriculum range whereby female

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academic success and accomplishment does not appear deviant (Spender,1980; Finn,1980). It has also been argued that coeducational schools are essentially boys' schools in that they provide opportunities, at both staff and student level, for males to occupy or assume positions of power and authority over female colleagues and students (Shaw,1980; Spender,1980). Not all writers on this topic make the assumption that single sex girls' schools are in fact all female institutions, a fact which is rarely the case, unlike the all boys' schools where the staff are more commonly all male except for matron, cook and secretary. Girls' schools have to some degree fallen victim to the situation they would seek to improve, namely the problem of providing suitably qualified female teachers, especially in the areas of mathematics and science.

The high level of academic achievement connected with some British girls' schools is only part of the picture. These schools carry with them a certain amount of historical baggage identified by Delamont (1983) as a 'double bind' in which, in the very recent past, the students, while aspiring to high academic achievement, had also to ensure that their behaviour and appearance conformed to the bourgeois ideal of femininity. As such they are the inheritors of a dual tradition within girls' education in Britain. On the one hand the purpose of girls' schooling was to prepare the students for a narrowly circumscribed domestic role in later life, a role with different implications for different classes. Such a position informed all the official governmental reports on education with reference to the education of girls throughout the century, called by Wolpe (1976) an 'official ideology' of girls' education. On the other hand some leading educators were active in promoting education for women as part of a broader social concern, and as such led to pressure on the universities to admit women and sought to develop female academic expertise (Deem, 1978). The all girls' school has been seen to have the potential to achieve an appropriate domestic training or to support female academic endeavour, and has derived support from both radical and conservative educationists. As Finn, Dulberg and Reis note:

In general single-sex schools may be particularly powerful institutions for continuing or modifying achievements and attitudes considered appropriate to one sex or the other.

(Finn, Dulberg and Reis,1980,p.146)

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In the past decade the proponents of single sex schooling for girls have come from the more radical position that supports such institutions as a necessary protection against the entrenched gender inequality of the wider society which, they claim, influences processes of coeducation. Comprehensivization which was adopted to break down class based barriers in education is now in this view associated with promoting gender distinction. As Spender writes:

It is only when girls are educated in a context from which boys are absent and in which the girls are encouraged to grow and develop their human potential that they will be in a much stronger position to resist oppression in the wider society. (Spender,1980,p.65)

It is interesting to note that Spender, who has been the most vocal critic of coeducational schooling, is also aware that the simple provision of an environment 'from which boys are absent' is not of itself enough to ensure female intellectual development. While research has shown that single sex schooling is associated with academic success for girls there has not been an investigation into the processes which operate within these schools whereby more precise understanding of what a better education for girls might entail.

Within coeducational schools there have been initiatives to develop single-sex classrooms for girls, especially in mathematics and science. Smith (1984) cautiously claimed some measure of success with an experiment along these lines , but wisely insisted on a long term perspective being taken. The school in this report had been conducting single sex classes for girls in mathematics for four years. The decline in attitude to and achievement in the subject which had previously been characteristic of girl students at the school had been considerably arrested. No doubt some of this improvement could be attributed to a 'Hawthorn' effect induced by the changed conditions and attendant interest on the part of staff and students. It is noteworthy, however, that the girls involved professed great satisfaction with the arrangement while at the same time preferring their situation to an all girls' school. An earlier American experiment had found that one year of sex segregated mathematics classes did not bring about a change in pupils' attitude to the subject (Ellis and Peterson,1971). Another American study (Fox et al.,1979) described difficulties encountered in recruiting girl students for a mathematics summer school until an all girls

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class was set up at which time sufficient numbers were keen to enrol. Studies such as these have focussed on changes in group composition and associated effect. They have not necessarily involved female teachers or considerations of learning style. There are some suggestions from the research of a relationship between learning style and group composition. Fox, Tobin and Brody (1979) note that female achievement in mathematics is associated with being part of a female group, that is when the number of females in an adolescent mathematics class becomes low the drop out rate among the remaining girls increases markedly. For high female mathematics achievement, therefore, a sufficient number (here the authors suggest the notion of a 'critical mass') would appear as a necessary precondition. The suggestion is interesting in that it implies the presence of other girls contributes to female achievement. Such a finding relates to the British finding that the more successful programs for increasing girls' performance in mathematics and science were those which relied on older girls to counsel, encourage and tutor younger girls (Casserly,1980). The question of coeducation and its impact on girls' experience of schooling continues to attract research attention. Two recent studies reveal the complexity of the issues involved. Whereas Stables (1990) showed that there was a tendency towards greater polarization of attitudes in mixed schools, a feature that had been consistently identified in research on this area, Payne and Newton (1990) discovered that both groups in their study (i.e. teachers and students) favoured coeducation with most opposition coming from some women teachers in schools that had recently become coeducational.

It would appear from the overseas research that the case for single sex schooling promoting girls' academic achievement is not conclusive insofar as the gender context of the school has not been singled out as the main contributing variable to differences in achievement. The usefulness of such studies for the present work, however, lies in the fact that they add to understanding of particular aspects of the social construction of gender in terms of the educational process.

i. Re-phrasing the questions?

Much of the work cited here has added to the general understanding of the situation in schools with respect to gender difference. There has been a tendency in this literature, however, to rest on the demonstration of gender difference rather than to attempt to explain how these differences arise. Two researchers who have embarked on this project of explanation, and whose work operates at both the theoretical and empirical level, are now introduced. In the United Kingdom Valerie Walkerdine has analyzed the question of girls and mathematics learning in terms of schooling structures in the kindergarten and the transition from primary to secondary schooling (Walden and Walkerdine, 1982,1985). This work documents two detailed studies of children's learning of mathematical concepts and teachers' perceptions of and responses to that learning. In her analysis Walkerdine draws on her earlier theoretical work in which she identified the ways in which certain behaviours, associated in western culture with boys, have also become synonymous with the concept of the 'autonomous active learner' celebrated in contemporary psychology and educational theory (Walkerdine,1984). In Walkerdine's account the teachers and students are seen taking up and acting out the prescriptions of psychological theory, including those that detail what it means to learn and what it means to be male or female. The inaction of the girls becomes the product of their actively choosing to adopt a passive feminine role in the classroom, which is very different from seeing them as 'opting out'.

Meanwhile the work of Carol Gilligan in the United States has also continued to challenge the ways in which conventional psychology has produced understandings of human development, in this case moral development. Continuing from her demonstration of the gender different ways in which young people may at times process a 'moral question' (Gilligan, 1982), Gilligan has more recently completed a closely detailed examination of adolescent girls at school and has documented responses which are characterized by a 'relational' quality, the need to view issues as contextualised rather than reducible to abstract principles (Gilligan,1990). As with her earlier work Gilligan is careful not to

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suggest that there are clearly distinct male and female cognitive styles that operate across time and topic, but rather her argument is that young people are drawn to approach the world and their place in it in ways that are influenced by their socially ascribed gender. Both Gilligan and Walkerdine in their different ways offer complex theoretical accounts of the ways in which social practices, especially those commonly associated with schooling, contribute to the constitution of gendered subjectivity in students. The theoretical contribution of these researchers will be developed in the following chapter. The point for this entry is that they both also provide richly detailed accounts of schooling practice which highlight the gender related features identified in more standard research approaches.

(iv) Australian studies relating gender and schooling.

In Australia, given an education system which is still perceptibly a derivation from a British model (commonly held to be Scottish) and a popular culture which is heavily influenced by American and British media in the form of press, film and television, it is perhaps not surprising that local research into girls' education has mirrored the concerns raised elsewhere. After all many of the social scientists are, if no longer predominantly British born, British or American trained. Here too researchers have encountered the difficulty of trying to separate the interwoven constructs of gender and class, as noted in the national report on education

Being a girl is an educational disadvantage, except when it is associated with high socio-economic status. (Karmel Report,1973 :3.10)

The writers of the Schools Commission report into the education of girls (Girls, School and Society, 1975) were also aware of the double disadvantage of working class girls, and they wrote of the daughters of the semi-skilled and unskilled workers as being in 'the most educationally disadvantaged category'(p.38). And yet as Connell et al (1981) were to discover the educational path for the privileged girls in what they describe as a 'ruling-class school' was not without problems. This latter study revealed that the press for educational change which would facilitate the girls' entry to the selective university professional

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schools came from parental dissatisfaction with the teaching of certain areas, notably mathematics and science, although the group was in many respects educationally advantaged. The economically privileged girls in Connell's study reflect a position similar to that described by British educationist MacDonald who writes:

The weakening not only of the boundaries between the family and the economy but also of the domestic division of labour amongst the middle classes has to some extent heralded in attempts to break down sex segregation in the schools and to construct and transmit a new set of gender relations, more appropriate for corporate capitalism.

(Macdonald,1980a,p.33)

Despite the undoubted generalizability of some of the concepts utilized in an analysis of gender and education, so much of educational practice is constrained by structures which are specific to regional and cultural boundaries, and as such these are worthy of note. For instance, as in America and Britain, Australian schools in general adhere to the division between primary and secondary schooling (Some rural schools and some private schools operate as one all-inclusive institution but these are a very small minority). Some schools have a junior primary section (until recently 'infants') for beginners, others do not. Age-graded progression is the norm and this ensures that all children have some experience of secondary school before achieving the age at which compulsory schooling ends (currently 15). Primary schools are organized around classes, usually age-based, with one or two teachers; secondary schools organize students' curriculum experience in terms of subjects which usually means that students are exposed to a wider variety of teachers than at primary school, and this in concert with the age of the students, augurs for a different style of teacher-student relationship. In general there are no junior high schools as in the United States, nor are there sixth form colleges as in the United Kingdom (although such a system does exist in Canberra and parts of Tasmania). Unlike their American counterparts, Australian students undertake what is officially represented as a 'common core' curriculum up to and including year 10, with choices limited to modern languages, manual skills and technical subjects. The last two years which have been enjoying increasingly high retention rates, are not as specialised as in British schools, students typically study at least five

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subjects in the senior year for the assessment which will affect their future educational careers.

Of those who leave earlier the passage is largely unremarked. More of the males are likely to enrol in Technical and Further Education courses to obtain a job qualification (Praetz,1983). In general a much smaller proportion of the age group completes high school than in America although more young people do complete a less specialized secondary education than in Britain. These formal curriculum provisions have particular implications for a study of gender differences in education. O'Donnell (1984) frequently refers to the 'sex-specificity' of senior secondary school subjects. In particular the structures which produce students 'selecting' subjects at the upper levels appear to support an unwritten difficulty hierarchy with maths and science at the top in ways peculiar to Australia (Gill,1984; Fomin,1984). This point will be elucidated in a subsequent section.

In 1975 with the publication of the Schools Commission report 'Girls, School and Society' there was every indication of official intention to redress the 'disadvantage' of girls in education as demonstrated by earlier studies (Cooper,1969; Roper,1971; Martin,1972). While providing a competent and careful overview the authors noted the lack of Australian research into educational processes:

We need more careful studies of the ways in which teachers react to, reward and reinforce different behaviour in boys and girls.
(Girls,School and Society,1975,p.112)

Since 1975 there has been increased attention within Australian education to considerations of gender and gender-based inequality, and the following sections list the directions which the research has taken. There is still a lack of evidence of gender construction in relation to educational practice, particularly at the classroom level. Sampson (1982) asserts that in their daily activities schools are crucially involved in the social reproduction of gender inequality, and acknowledges the advances made in the overseas studies in this area:

As yet research into such processes of interaction within Australian

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classrooms and schools has not advanced very far, compared to overseas studies.

(Sampson,1982,p.310)

The subsequent Schools' Commission report, Girls and Tomorrow: the challenge for schools (1984), relied almost entirely on the British studies of Spender and Stanworth to substantiate its claims in this area. The National Policy for Education of Girls produced in 1987 similarly offered no carefully documented Australian based studies to substantiate its claims about girls' disadvantage in terms of schooling practice. The present work is directed towards this lack of knowledge of the ways in which Australian schools and teachers contribute to gender-based understandings and attendant limitations on pupil potential. The discussion now proceeds to a review of the evidence for the claim that there are gender differences in schooling outcomes in the Australian context.

a. Enrolments.

Roper (1971) had identified different school retention patterns between girls and boys. Many more girls than boys left school before completing their courses. Roper explained the difference in terms of community attitude, parents were apparently less willing to support a daughter through school than a son. This feature of Australian education was again encountered by Martin (1972) in her work on sex differences in educational qualifications. However the picture was to change quite rapidly in subsequent years and by the mid 70's more girls than boys completed secondary education, although fewer girls proceeded to university and girls typically aspired to a narrower range of careers and post-school educational courses than did boys (Praetz,1983). The following table provides a summary of national retention rates:

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TABLE 1

Nationwide schooling retention rates.

<u>Year</u>	<u>1st year to 2nd last year.</u>			<u>1st year to final year.</u>		
	<u>Males</u>	<u>Females</u>	<u>Persons</u>	<u>Males</u>	<u>Females</u>	<u>Personsq</u>
1976	51.4	52.6	52.0	34.6	35.3	34.9
1977	50.3	54.4	52.3	34.0	36.6	35.3
1978	51.1	55.8	53.4	33.1	37.3	35.1
1979	50.4	55.8	53.0	32.4	37.2	34.7
1980	50.8	57.3	54.0	31.9	37.3	34.5
1981	51.6	59.0	55.2	32.0	37.8	34.8
1982	54.2	60.8	57.4	32.9	39.9	36.3
1983	61.7	65.6	63.6	37.5	43.9	40.6
1984	63.6	67.5	65.5	42.1	48.0	45.0
1985	64.6	68.9	66.7	43.5	49.5	46.4
1986	65.7	70.9	68.3	45.6	52.1	48.7
1987	68.1	74.0	71.0	49.4	57.0	53.1
1988	72.4	78.7	75.5	53.4	61.8	57.6

Source: Retention and Participation in Australian Schools. Monograph No.2. Australian Government Printing Service. July, 1989.

The increased retention rate for girls was explained in terms of the shrinking range of openings for them in the job market, likewise the more recent rise in retention rates for boys. It is possible that other factors such as the increasing acceptance by girls and their parents of a future involving many years in the workforce may have caused them to seek further qualifications in order to gain a better job. Without further research it is not possible to conclude one way or the other. Certainly the general economic downturn which brought with it high female youth unemployment has refocused attention on schools as providers of job-related qualifications. Such a focus has revealed striking gender differences in enrolment patterns in senior years of schooling. The differences are nowhere more evident than in senior mathematics, chemistry and physics, subjects which have 'pre-requisite'

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status for entry to the majority of tertiary courses (O'Donnell,1984). Thus females who study at year 12 level tend to take a variety of humanities subjects. In contrast, males are concentrated in the narrower spectrum of mathematics and sciences, where they outnumber the girls by better than 2:1 across the different states (Atweh,1980; STEP,1981; Parker,1982; Osman,1981). The compulsory English requirement which operates in several states does not appear to affect the outcome. As noted in the official government report (Myers Report,1980):

More than 25% of boys satisfy tertiary entrance requirements with 2 mathematics, physics and chemistry, but only 6% of girls do so. About 45% of boys do so with at least general mathematics, compared with less than 20% of girls.

(Myers Report, 1980,p.90)

The degree to which the senior school subjects are seen as gender-related has been repeatedly noted (Parker,1982; O'Donnell,1984; Ainley et al, 1990). This situation has remained unchanged in South Australia in the second half of the decade, as revealed in the following table:

TABLE 2

Students presenting for external year 12 examinations in South Australia.
Numbers shown as percentage.

<u>Subject</u>	1984		1985		1986		1987		1988		1989		1990	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
English	36	64	37	63	38	62	36	64	38	62	39	61	39	61
Economics	55	45	56	44	57	43	55	45	57	43	57	43	57	43
Maths 1&2	67	33	67	33	68	32	68	32	68	32	69	31	69	31
Maths 1S	48	52	48	52	50	50	47	53	50	50	51	49	51	49
Physics	71	29	71	29	73	27	72	28	72	28	71	29	71	29
Chemistry	65	35	65	35	65	35	64	36	64	36	63	37	62	38

(Secondary Schools Assessment Bureau of South Australia, Annual Reports.)

The most striking feature of these figures is the constancy of the gender divisions, despite widespread publicised campaigns to encourage girls into mathematics and science. In one

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early study Humphreys (1968) had concluded that sex was the single factor which played a significant role in influencing subject choices. While more attention will be given in the following sections to the ways in which these gender differences in enrolments have been understood in the research, a further point is noteworthy at this stage.

Australian schools have generally accepted the principle of comprehensivization in the past decade, such that streaming which once used to be the norm is now rare, although 'setting' in some subject areas, notably mathematics, is not uncommon. There have been moves to ensure that male and female students have experience of what were previously the most gender specific areas of the secondary school curriculum, viz. technical skills and home economics. The one area in which students have some choice in the early high school years is modern languages. Maddock (1977) has noted that choices relating to the study of modern (but not ethnic) languages usher in a sort of unofficial streaming whereby better students are able to affirm their status as high achievers, and that this feature is understood by students parents and teachers. As Maddock (1977) says 'They stream themselves'. It seems that a similar position could be taken about senior enrolments in maths-science. Boys who take such subjects affirm their own masculine status, as well as reinforcing the 'male-appropriateness' of the subject. Several of the studies which have investigated gender differences in enrolment have taken account of modern language enrolment as well as maths-science enrolment (Osman,1981; STEP,1981). It seems that course structures which limit the number of subjects taken at senior levels cause the high achieving boys to drop modern languages in favour of maths-science subjects, although not so for the girls.

In general, then, an investigation of changes in enrolment patterns reveals:

1. Girls have been staying on at school in increasing numbers and more girls complete secondary education than do boys. However more boys continue in post-school education, so for the majority of females in our society schooling experience provides the last chance of formal education.
2. While girls are well represented in senior high school years, they study substantially

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different subject combinations than the boys. These differences are important in that they relate directly to post-school educational and career opportunity.

b. Staffing structures in Australian schools.

In Australia the majority of primary school teachers are female but they are poorly represented in administrative or promotional positions. By 1979 women made up 68% of all primary school teachers but only 10% of primary school principals (Keeves,1982). At the secondary school level women accounted for 43% of all teachers and only 9% of all principals (Keeves,1982). Unlike in the United States where the 'schoolmarm' has legendary folk figure status, it is only relatively recently that the majority of Australian teachers have been female. O'Donnell (1984) writes of the 'feminization' of teaching as concurrent with the post-war boom. There was official concern at the growing numbers of women teachers so much so that until 1973 the New South Wales Education Department admitted males to teacher training courses with a lower aggregate mark than that required of females, in some years up to 60 points difference (O'Donnell,1984). The underrepresentation of females in senior positions, however, has increased at the same time as the numbers of females in the teaching force have increased (Girls and Tomorrow,1984). Rimmer and Davies (1985) also register concern at the dwindling proportion of women in senior educational administrative roles and attempt an analysis of the ways in which the bureaucratic structure disadvantages women. Moves in South Australia to apply different criteria to male and female candidates for promotion so that the imbalance between males and females in senior positions might be redressed (Bradley,1979) have not been successful. As Sampson has suggested in her short paper "But the women don't apply ..." (Sampson, 1987), there are gender related differences in several significant aspects of professional development such that men's aspirations tend to be supported in ways that those of women are not.

At the unofficial level the predominance of females at junior levels in the teaching force and

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males at senior positions is found to be reflected in the deployment of staff within the school, with the junior primary section being almost exclusively female and, in the primary school, males being more likely to teach in the senior years. At the secondary level where teachers are associated with subjects as well as year levels, men predominate in the maths-science faculties and senior classes, women in the humanities and junior levels.

The implications that such structured gender-related divisions in staffing carry for the students are more frequently a matter for hypothesis and conjecture than investigation. The term 'role model' is frequently applied in the literature without attention to its precise definition or empirical verification. While there is little question that teachers provide models of sex-appropriate behaviour for their students, it is much more debatable to claim that students are generally influenced by teacher behaviour and that they take it as the model for their own. Sampson (1979) found that being in a school with a female principal was related to girls' greater acceptance of women's capabilities and potential, though not for boys. Such a finding raises interesting questions about the transmission of understandings of power in an institution. Were the boys somehow threatened by being in a school with a female principal which led them to take a position of unequivocal male superiority out of adolescent defiance? What implications did the differing perceptions of male and female potential have for everyday classroom life? Sadly such questions were beyond the terms of reference of the study. In a later paper Sampson (1982) writes:

There is virtually no Australian data on the influence of women as role models in schools, in fact the whole area of teacher practice and prejudice has not really been tackled at all.

(Sampson,1982,p.311)

Schofield's work (1982) in primary schools showed that boys and girls with same-sex teachers exhibited more favourable attitudes to mathematics than did those with opposite sex teachers, but once again the study took the form of a questionnaire based survey and as such there was no way of investigating the processes associated with the formation of attitude differences. Her subsequent retrospective study of tertiary students (Schofield,1983) revealed that students who were taking non-traditional courses (i.e.

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females in science or engineering, males in arts) claimed to have been strongly influenced by a same-sex teacher in related subjects while at school. Such results, although interesting, must be interpreted with some caution. Given higher male achievement in mathematics overall, and the predominance of female primary school teachers in whose classes boys' attitudes to mathematics are apparently less positive than those of the girls, it could be argued that the typical primary school experience inhibited boys' achievement in this area. (Such an argument has been mounted to explain boys' lack of success in reading in the early years). Further, Schofield's tertiary study was conducted in a university the majority of whose students are drawn from single-sex private schools where the likelihood of a same-sex teacher is much higher than in a government coeducational high school. Similarly Widdup (1981) described an interesting study carried out in Tasmanian senior mathematics classes. Three of the classes were taught by female teachers, the rest had male teachers. When male and female progress was compared for each of the 17 classes studied, males were generally superior in that in 13 of the classes boys achieved higher test results than the girls. Of the four cases in which the female group was more successful, three were taught by female teachers, the other by a male, leading to the overall suggestion that it may be teaching style rather than sex of teacher *per se* which is associated with gender differences in educational outcomes. A similar suggestion of female students' response to teacher style was obtained in a Victorian study of teacher influence with respect to the extra-curricular activities of physics students in which it was shown that girls in classes taught by female teachers were more likely to take up teachers' suggestions than girls in classes taught by male teachers (Lewis,1975). In neither of the cases reported here was there any investigation of classroom processes which may have led to the gender differences in educational outcomes. Instead the authors resorted to a rather bland and atheoretical notion of 'role models' and 'identification' to account for the observed differences.

In summary, the disproportion of males and females at particular levels within the education system in Australia mirrors that encountered elsewhere. Much has been made of

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this situation, especially in terms of the lack of effective 'role models' for female students in higher levels of mathematics and science. Research on the effect of unequal gender distribution on the students has given some interesting leads, but at present there is insufficient evidence to support change in departmental hierarchies on the basis of student learning and attitude. This is not to say that such a case may not have sound merit on the basis of industrial equity and professional competence, but such concerns are beyond the scope of the present study.

c. Curriculum materials.

As with research elsewhere, the analysis of curriculum materials, and in particular of early reading schemes, has revealed the underrepresentation of females in such texts. In the minority of cases in which they do appear, women are portrayed in domestic or nurturant roles as contrasted with males who take up positions across a much broader spectrum of opportunities (Bradley and Mortimer,1973; Healy and Ryan,1975; Wignell,1976). Such documentation has ushered in changes; new sets of early readers have been produced which include males in domestic nurturant roles and females in non-home-based careers and businesses. However the older reading systems are still in use in many schools that are either financially hard pressed or otherwise unwilling to replace them. Nor has it been shown that young children limit their behaviour and attitudes to understandings generated by school readers, although making these texts more appropriate to the child's world does seem desirable. At the secondary level science and mathematics texts are also slow to change, although one can discern an increased use of female pronouns and names in problems used. There have also been several encouraging initiatives by forward thinking educators to relate such subjects to broader cultural issues such as a mathematics lesson on graphing based on statistics of women in the workforce (Barnes, Plaister and Thomas,1984).

Another section of school resources which has been connected with gender discrimination

concerns allocation for sporting equipment. Researchers have uncovered great differences in school expenditure and support for sport and physical education in favour of males (Hawkes et al,1975; Coles,1979). Bryson (1983) has argued that such discrimination not only contravenes notions of equity, but also involves the schools directly in preparing all pupils to enter a world wherein the precedence given to male sports itself symbolizes male dominance. O'Brien's study which revealed significant sex differences in attitude to the importance of sport is further evidence of the gender discriminatory nature of sport in Australian society (O'Brien, 1987), a feature which appears to be exacerbated by schooling experience.

d. Teacher attitudes, student attitudes.

In 1971 a study by Rowell (1971) in South Australia investigated the relationship between teachers' expectations and gender differences in educational outcomes. In this work Rowell found that girls' success in the top year 10 physics classes in each of six high schools was significantly related to being in a class where the teacher did not see the subject as 'really for boys'. An attempted follow up study on a larger scale was to fail however, due to teachers' increased reluctance to acknowledge opinions which could be described as prejudicial. Subsequently little work has been done on Australian teachers' attitudes in this area. With increased publicity given to the promotion of equality of opportunity it seems unlikely that the fairly bald statements made by overseas teachers would be subscribed to by Australians. One study which did address teacher attitude was that of Evans (1982) in which he attempted to assess teacher expectations of pupil behaviour given the impact of the women's movement. The teachers in this sensitive study were asked to comment on their perceptions of changes in sex roles - equally revealing, if less threatening, than asking for their own gender-related attitudes. Evans' results demonstrated that there were differences between male and female teachers in their perceptions of sex role changes and that age of the teachers affected their interpretations of female teachers' behavior. This was a small scale work carried out in two country primary schools, but because the

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methodology involved detailed observations of teachers at work in the classrooms it was able to demonstrate the connection between teacher attitude and practice which had been hitherto missing.

Evans' results relate to another study of Australian teachers by Bernard (1979) who investigated whether teachers' evaluations of student work were affected by sex role behaviour or by sex of student. Bernard found that 'teachers apparently viewed students with cross sex role behaviour as being more intelligent and independent than students with traditional sex-linked sex role identity' (p.561), a finding which reflects the teachers' favourable attitude towards the 'modern' girls in the Evans' study. However Bernard's main finding was that, irrespective of the sex of the teacher or student, students who are perceived as 'masculine in role orientation' are likely to be evaluated more positively than those who are not. There are design problems with the Bernard study; it could be that 'masculine role orientation' was defined in terms appropriate to 'excellent student', a connection previously brought out in work by Winkler (1976). In this work it was shown that tertiary students' concept of 'excellent student' is very similar to their concept of 'ideal male' and negatively related to their concept of 'ideal female', providing further evidence of a cultural construction of the connection between academic ability and masculinity. The connection between assessment and gender bias has continued to attract research attention in Australia (Adams, 1984; Daley, 1986; Rennie and Parker, 1991). The general direction of this work has been to build on the effect of item characteristics, a feature previously identified in overseas work mentioned in the previous section, rather than to take up the more controversial and possibly less stable aspect of teachers' attitudes coming from Bernard's study.

There has been more research into student attitudes than into those of teachers. Gender differences in student self-esteem have been found consistently (Edgar, 1974; Connell, 1975; Smith and Marsh, 1981), and while such studies have generally reflected the

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higher self esteem of adolescent boys compared to adolescent girls, one study revealed boys rated themselves more favourably than girls from 10 years old (Smith,1975). The work of Blandy and Goldsworthy (1977) related girls' lower self esteem to their lower levels of academic aspirations. Connell et al.(1975) found that sex differences in self esteem increased through adolescence, thereby reinforcing that adolescence is a critical period for gender related development. In general, studies of self esteem and self concept are beset with a variety of interacting variables, not the least of which is the influence of social class. Phillips' study revealed that gender differences in self esteem were not as pronounced between boys and girls attending private single sex schools than between those attending government high schools (Phillips,1980). Taylor's work in this area is particularly relevant in that she was able to show that the decline in self esteem in adolescent girls increased with time spent in school whereas that of boys increased (Taylor,1981). Nor was self esteem particularly related to student achievement in that the most able girls thought less of themselves than did the middle level boys. Elsewhere Gurney (1981) has discovered that girls' self esteem rises when they leave school and enter the work force. Taken together these last two studies suggest that girls' self esteem is directly affected by schooling experience. More research at the ground level of schooling is needed to examine ways in which schooling experience might work to produce such an effect.

A further line of research on gender difference in student attitudes comes from work on motivation. The fear of success construct originally proposed in the American work of Horner (1972) has been found to apply to Australian high school students (Leder ,1980; Gill,1980). While Gill's study followed Feather and Simon's position (1975) in claiming that it was the success itself and not necessarily the field of endeavour which carried the negative implications for certain females, Leder's work focussed on a particular subject area, mathematics, which bright girls either avoided or else were constrained to perform at a less than optimum level. It is also interesting to note that in Gill's work, in which the

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subjects were free to choose a particular field in which the student excelled, a high proportion of both males and females nominated mathematics or science, symptomatic of the privileged position such subjects obtain in the minds of Australian secondary students. Leder (1982b) has also worked in the area of attribution theory, and has shown that, as in the United States, Australian female students account for their successes in terms of unstable factors (I was lucky) and their failures in terms of stable factors (I'm no good at it), while the reverse is generally true of male students. Given the Oren (1983) connection between functional attribution and classroom atmosphere, it seems that there is a need to investigate classroom processes for a possible causative effect. The results of Oren's work suggest that the feedback and evaluation system in the classroom affect students' causal explanation of their successes and failures. Reading these results on to claims of discriminatory classroom attention patterns it seems logical to suggest that if girls are getting less teacher attention and hence less evaluative comment than boys they may be less inclined to assess themselves correctly or to adopt remediating strategies. In other words the previously noted gender differences in locus of control may be understood as a direct result of classroom experience.

Studies of student attitudes have consistently revealed sex differences in learning preferences with the boys more oriented to competitive situations and the girls preferring an emphasis on cooperation (Owens, 1985) and that by year 10 there were clear differences between male and female students in motivational profiles which were related to school achievement (Hall, 1987). Sex differences in motivation which were associated with achievement also constituted a finding of a recent study of Australian schoolchildren in this area (Boyle and Start, 1990). While noting that motivation factors were associated with achievement to the same degree as ability factors, this report also showed that in the upper primary school girls emerge as a group as superior performers both in terms of achievement and motivation. The female superiority is accounted for in terms of dynamic motivational factors - curiosity, play, pugnacity and school orientation - in which the girls scored significantly higher than the boys.

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From the foregoing it can be seen that evidence from a variety of studies attests to a connection between schooling processes and gender differences, although it is not a simple case of girls' being automatically disadvantaged. Clearly more work on classroom interaction is needed in order to elucidate ways in which self esteem is fostered and functional attribution may be maintained.

e. Classroom interaction.

As noted earlier, there is little Australian work in this area. Evans' work(1982) has been mentioned in terms of teacher attitude. In an earlier study Evans (1979) investigated two pre-schools and two primary school classes in Victoria, and found evidence of the boys' greater salience in their teachers' perceptions. Teachers nominated two boys for every girl in both the most creative and the least creative categories. Evans also found a strong degree of sex difference in classroom interaction wherein teachers interacted twice as frequently with the most creative males as with the most creative females. Ebbeck (1985) working in kindergartens in South Australia also found that sex differentiated patterns of teacher attention formed part of children's initial encounter with formal education.

These studies are relatively small scale. Evans observed four teachers and adopted particular focus categories of six children per class (3 most creative, 3 least creative). Ebbeck observed 30 teachers without reducing the kindergarten groups to particular categories beyond male and female. It could be argued that the style of interaction in the pre-school is inevitably more sex-specific, just as the teaching style is bound to be more nurturant due to the age of the children. Kindergarten teachers' training stresses the importance of the pre-schooler knowing if it is a boy or a girl in order to promote successful adjustment in later life. Rather than pursue the issue into the convolutions of Freudian theory, suffice it to say that such a practice would appear neither necessary nor relevant by the time the child enters school. A further point concerns the fact that not all

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children attend kindergarten; primary schools do not require pre-school experience, although the role of the kindergarten is frequently understood as socializing the children into patterns of behaviour appropriate for formal schooling. All children must attend school however, for a minimum of nine years. If this legally required attendance is seen to involve socialization into a gender-based understanding which is restrictive and anti-educational, there is surely great need to identify such processes and work to change them.

While there have been many claims made concerning discriminatory attention-giving in Australian classrooms, Leder's study stands out as a carefully documented monitoring of interactions in primary school classrooms across two grade levels (year 3 and year 6) and subject areas (mathematics and language) (Leder, 1987, 1988). The results of this study support the picture of girls receiving less of all types of teacher interaction . The question remains as to what this imbalance of attention *means* in terms of student learning, whether or not learning is impaired, whether the students are aware of the imbalance and how the teachers account for it. Questions such as these will form part of the focus of the present study.

The remaining sections draw together Australian research under two specific headings, as was done at the end of the overseas section, namely girls and mathematics and the question of coeducation as opposed to single sex schooling.

f. Girls and mathematics.

Research attention to mathematics as an issue in the education of girls comes from two directions. Firstly the connection between mathematics achievement and career potential has been frequently noted (Byrne,1982; Earley,1981; Kennedy,1982). Surveys of enrolment patterns revealing the earlier mentioned disparities between male and female enrolments in senior mathematics are cited and strategies to encourage girls to stay in mathematics

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education have been increasingly used. Dekkers et al. (1983) note for example from their survey of senior mathematics enrolments from 1970 to 1979 that more girls than boys choose 'terminal' mathematics courses while in each state at least twice as many males as females are enrolled in mainstream mathematics classes. The authors also record a general increase in mathematics enrolments no doubt due to the perceived relevance of mathematics to careers for both males and females, coupled with the rise in unemployment. Leder (1984c) has noted that the rise in female mathematics enrolments tends to be in the general or terminal mathematics option. South Australian statistics reveal that the last seven years have seen a higher proportion of males entering for external examination in both the double mathematics option and the general mathematics(see Table 2, p.36).

The second line of research seeks to identify features which lead to female underrepresentation in senior mathematics classes. Some of the most interesting work in this area relates to different learning styles of boys and girls, which in turn are related to differences in mathematics achievement. Barnes (1983) cited data suggesting that girls tended to rely more on memory and on rule-orientation than boys. On the other hand Carss (1981,1982) interprets recorded classroom conversations to argue that girls are more preoccupied with understanding mathematical concepts, whereas boys are keener to get the right answer. Research in this area is still at a very early stage. Many more studies have sought to identify those areas in mathematics which produce gender differences in achievement (Clements and Wattanawaha,1977; Leder,1977; Kudilczak et al 1979; Wily,1984). In Australia as elsewhere spatial understanding frequently recurs as a specific area in which girls do not achieve as highly as boys, however , as noted by Howe and Doody (1989)(quoted p. 21), the size of this difference is not adequate to explain the magnitude of the gender differences in later mathematical achievement. Other areas do not identify themselves with great regularity, except perhaps for a tendency to male superiority in problem solving, and the researchers have generally turned to environmental rather than cognitive factors as a source of explanation. Rosier (1982) discovered achievement at early high school was most strongly related to student's year level and father's occupation. Even

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at the year 12 level, when school related gender differences in enrolment and achievement are most pronounced, these differences disappeared when variables such as time spent on mathematics and related curriculum areas were controlled, thereby picking up on insights from overseas studies.

Psychological variables such as learned helplessness, fear of success, dysfunctional attribution, have been associated with female underachievement in mathematics (Leder,1977,1982,1984a &b). Attitudinal measures, including achievement motivation and test anxiety, have also revealed gender differences (Fraser,1980; Keeves and Mason,1981; Schofield,1981; Simkin,1979). The predominance of females in primary teaching has led to their attitudes being tested with respect to mathematics. Although it has been suggested that such teachers have been 'selected for mathematical incompetence'(Merga,1981) attitude measures reveal female student teachers to be more positively disposed towards mathematics than their male counterparts. (Donaldson,1979; Schleiger and Doig,1980). Once again measures of self esteem (noted by Fennema to be positively related to mathematics achievement) have also been used to account for the observed gender differences in this area (Taylor,1981; Smith and Marsh,1981).

Intervention strategies which have sought to alert teachers and students to the consequences of dropping mathematics usually use a combination of stressing the connection between mathematics and careers and urging teacher awareness of the particular potential problems of girls in this area. All such work claims that the students' everyday school experience is crucially involved in the development of attitudes and learning strategies which relate to mathematics achievement. On this note Leder (1982) quotes Fennema with approval:

Within school lies the causation of sex-related differences in mathematics.

These and other Australian articles make claims about schooling processes which are to date not substantiated by Australian classroom research,e.g.:

..schools tend to reinforce Australian society's narrow stereotyped views of "normal" male and female behaviour.

(Hutchinson ,1983, cited in Merga Review, p.79)

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Many well meaning teachers do not appreciate the extent to which careful observational studies have shown that there are very significant but largely unrecognized differences in the way in which female and male students receive attention in class.

(Firkin,1982, p. 7)

The assertions of discriminatory practice have become so frequent as to make the idea somewhat of a truism in terms of Australian girls' student experience. Unfortunately the details of such practices are not sufficiently documented, doubtless due to a lack of substantive research in the area. It is unclear, therefore, how they are to be modified.

In a recent summary of the situation with regard to girls and mathematics learning in Australian schools, Leder, herself a leader in this research, writes:

Boys are typically found to have more interactions than girls with their teachers, both teacher and student initiated. Boys often receive more direct questions, more discipline, and are praised more often than girls for correct answers. Furthermore, high achieving boys have been reported as having more teacher interactions than high achieving girls.

(Leder, 1989a, p.85)

Having noted that the evidence for the above mentioned claims comes almost entirely from overseas research, Leder asserts

...Australian studies in this area are rare.

(Leder, 1989a, p.85)

Elsewhere in the same year Leder reiterated

It is commonly asserted that these findings (of gender discriminatory classroom practice) apply to Australian classrooms as well... Yet Australian evidence is typically anecdotal and based on small scale studies carried out by individual teachers.

(Leder, 1989b,p.163)

Similarly, Sampson (1983) noted that intervention strategies are doomed to failure unless they take account of the schooling processes which contribute to males and females acquiring different understanding of themselves and their potential. As noted earlier Sampson has also written of the urgent need for research so that such processes might be identified.

The overall conclusion that can be drawn from the body of work in this area is that gender

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inequality in mathematics education is but one feature, albeit a particularly important one, of school-related gender differences in general. Any investigation of schooling processes involved in mathematics achievement would reveal the processes of gender construction overall. Parker (1982) proposed that a symbolic interactionist model is particularly appropriate for explaining the influence of the classroom and school-based variables in the development of 'sex-related differences in science and mathematics participation and achievement'. It seems that such an approach if successful could well tap the structured gender relations of the schooling process in ways which transcend particular subject areas.

A further note is relevant here. Many of the studies of girls and mathematics appear to unwittingly foster a 'blaming the victim' approach, in which girls are too easily seen as burdened by gender. At the same time as focussing on practices which may disadvantage girls in this area it would seem to be important to examine processes and attitudes which are connected with male achievement. Only by this type of constant comparison can schooling processes involved in gender construction be identified.

g. Single-sex schooling or coeducation?

Australian education systems have incorporated three styles of single sex schooling. First the private schools which are fee-structured and thus socially selective. Although there are some coeducational private schools the majority (with the exception of the Roman Catholic systemic primary schools) are single sex, and often consciously describe themselves as adhering to the traditions of British public schools. Second, within the government school system there have been a few academically selective single sex schools, many of which have been phased out within the past decade as selecting by academic merit or streaming lost favour as sound educational ideology. Thus in South Australia Adelaide Girls' High

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School has been incorporated into a coeducational school within the last decade, although it had ceased being academically selective some years before. In Melbourne, MacRobertson Girls High still exists with a zoned as well as a selective component. In Queensland, State High is selective and coeducational although unofficially its classes are organized along single sex lines. The third style of single sex education, also being phased out in recent years, is the all girls or all boys technical high schools which, in particular in some of the girls' schools, appeared to embody the worst features of the British tripartite system, all the worse for being a small proportion of schools generally. While the boys' technical schools did offer a range of applied and trade related studies, the girls' schools in this bracket offered only a modified general curriculum with an emphasis on domestic science or commercial studies, not notably dissimilar from the 'commercial' classes in the coeducational schools. In addition the girls' schools tended to be located in industrial working class areas ascertaining a particular social selectivity in their students. They have been identified as being poorly equipped and as having underqualified staff. Not surprisingly the Victorian Committee into Equality of Opportunity in Schools (1977) recommended their hasty disestablishment.

Studies which compare student achievement in terms of single sex or coeducational background tend to be based on results from the socially or academically selective schools. (Few students from the technical division present for examination at the senior school level, so they are not included in such surveys.) Given the selective nature of the single sex sample it is difficult to draw firm conclusions. For instance from a survey in New South Wales Mack (1982) writes:

Boys and girls at single sex schools tended to perform better at both English and Mathematics in the HSC examination in 1980 than did boys and girls respectively at coeducational schools.

However one cannot conclude from this statement that the reported differences in student achievement are directly related to the school gender context. Other significant variables such as class background, educational level of parents, experience and qualification of

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teachers, school resources must be taken into account. Similarly Phillips' work (1980) in Sydney revealed that girls from single sex schools had a stronger and more positive self concept than those from coeducational schools. But Phillips' work also showed that boys in single sex schools were more sexist in their attitudes and more derisive of female capabilities than those at coeducational schools. As Connell et al.(1982) have pointed out, the structures of class and gender are continually mediating one another in ways which can have different implications for specific groups.

While the proponents of single sex education for girls draw support from overseas studies (and particularly those of Spender) which describe the negative aspects of gender typing for girls occurring in a coeducational situation, there is no evidence that the single sex environment is of itself sufficient to ensure a less gender typed educational outcome (Gill,1988). In the past girls' schools have provided for the maintenance of a narrowly defined gender based range of skills. Nor is there uniformity among the present private girls' schools as to their educational role, as seen in the work of Connell et al (1982). Some of the principals of private girls' schools are committed to developing student potential across a wide range of curriculum offerings. At the same time as some of the arguments in favour of all girls schooling concentrate on the advantages of students interacting with women in powerful leadership positions, there has been a recent trend in the church-based private girls' schools to return to the tradition of appointing male principals (Girls and Tomorrow,1984; Rimmer and Davies, 1985).

There has been some experimentation with single sex classes within coeducational schools, especially for mathematics, in various states. These tend to be staffed by teachers committed to raising the general level of female achievement in the area and it is likely that such a commitment, and the sense of 'special' treatment, would generate a Hawthorn effect. Many of these initiatives have been set up by interested teachers committed to the improvement of education for girls and to the idea that girls are typically disadvantaged by coeducation (Hawker College Report,1984; S.A. Education Department 1984). The reports

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make interesting reading, but they are not adequate to provide a basis for generalizable conclusions about the question of single sex education. From a study conducted in Western Australia, Rennie and Parker (1987) showed that single sex classes for girls in science were beneficial when the teachers' levels of awareness and science teaching skills were not high. In contrast those students whose teachers had undergone preparation in science and who had been alerted to the issue of girls as learners of science did not give evidence of gender related responses to science. In these groups the girls spoke up equally with the boys and were similarly actively involved in the lesson activities. The work of a team at Ballarat high school (Rowe et al,1988) also addresses the issue of single sex classes and girls' learning of mathematics and science. In many respects this project is a replication of the English experiment noted in the earlier section (Smith,1984), in that it monitors the setting up of single sex mathematics classes from the first year of high school. The claim is made that there has been a marked improvement in girls' achievement in mathematics as a result of this strategy and the study is ongoing. Meanwhile a team from Sydney university have been monitoring the move to coeducation by two previously single sex high schools. This study is noteworthy in that the adoption of coeducation was not accompanied by negative affects in terms of the achievement and confidence levels of female students *even though many of the teachers anticipated that this would be the case* (Marsh et al, 1988). Much of the writing on the question of single sex education for girls appears to rest on an assumption of difference, difference in school environment, in staffing structures, in curriculum content, in pedagogical style, differences that are yet to be identified.

Two major problems arise in a consideration of the benefits of single sex education for girls. The first concerns the question of long-term benefits - does such a sheltered environment assist young women in coping with 'the reality of the world outside?'(Sobski,1980). Studies which show the preponderance of girls from single sex schools at the established universities and in the professions may simply reflect the class background of these women. The other problem centers on logistics: setting up single sex schools or classes for girls requires that there will be such schools or classes for boys in

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which environment gender construction of a very traditional type has been seen to thrive (Phillips,1980).

Despite these problems the desirability of investigating the environmental effect of single sex schooling appears high, as does the difficulty of controlling for other pertinent variables such as ability, class, previous schooling experience, parents' educational level, to name a few of the more relevant ones in this area. The major question that the research has not addressed concerns whether or not the processes involved in education in a single sex school are in fact different from those involved in an otherwise similar coeducational situation. Such a question would seem ultimately more productive than surveys of student achievement at the senior level or questionnaires of student attitude, all of which, while revealing, fall short of revealing how such things come about.

(v) Overview and summary.

As is evidenced by the preceding there is a large amount of research that associates gender difference and schooling outcomes such that the differences between male and female students have come to be expected as normal features of schooling. For the most part Australian research on gender related educational outcomes has followed the lines already charted in the overseas work. As Leder (1984c) noted, Australian research in this area tends to be reactive rather than proactive. Empirical studies in Australia have continued to demonstrate over the last decade

- * gender differences in academic motivation and achievement, although the direction of these differences is not constant across subjects and year levels;
- * an 'underrepresentation' of girls in senior science and mathematics classes;
- * gender-related differences in teacher perceptions and student-teacher interactions;
- * a contradictory but widely-held perception that while coeducation is more 'natural', and hence desirable, girls are probably better off in single sex learning environments.

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Now that a good deal of evidence has been accumulated from large scale surveys of enrolments and results of attitude questionnaires, there have been increasing calls for attention to educational processes which involve both the formal and informal aspects of school knowledge produced within and beyond the classroom (see for example, Sampson,1982). To date very little Australian research has been carried out in this area. A notable exception is provided by the work of Bronwyn Davies whose initial research presents the schoolchildren as actively constructing their world of school and whose more recent work has revealed the gender-related understandings embedded in students' responses to schooling and to their early reading experiences (Davies, 1982;1987;1989a,1989b). Davies' work resonates with that of Walkerdine and Gilligan in that she too proposes a new way of looking at the question of gender and its relationship to schooling, one in which the concept of process is ever-present and thus the task becomes not so much one of registering differences but of analysing how they are produced and of suggesting what can be done about it.

The present study will take up this focus on schooling processes in an attempt to chart the ways in which students come to understand the world of school as having pronounced gender codes and to recognize themselves as members of a gender group within this world. Insofar as school is frequently understood to afford preparation for life the research will also investigate the students' perception of their life chances for evidence of gender construction. In addition the analysis will involve a discussion of the theoretical accounts of schooling and its functions whereby the process of schooling is scrutinized in the light of sociological theories of social process and social division. The following chapter will introduce a theoretical basis for a qualitative investigation of the educational process and its relation to gender construction.

CHAPTER 2

Towards a theoretical framework for an analysis of gender relations in schooling.

Argument: Psychological theories of gender and sociological accounts of the school's role in the reproduction of social inequality are reviewed. This chapter then proposes to form a framework for an analysis of gender relations in education by combining aspects of psychological and sociological theory and then situating the analysis by means of post-structuralist theory in which the discursive practices of the school are examined.

Theories of gender, with hardly an exception, focus either on one-to-one relationships between people or on the society as a whole. (Connell,1987,p.119)

(i) Lack of a theoretical framework.

Much of the evidence listed in the previous chapter of gender difference in educational experience and outcomes arises from studies which are predominantly atheoretical. Many of the writers work from a (frequently unstated) commitment to a liberal/humanist notion of equity and a methodology which derives from logical positivism. In this framework the demonstration of difference is seen as sufficient grounds for the claim that schools are not fulfilling equity requirements. The internal logic of such a position suggests that if schooling were to proceed differently then equitable outcomes may well be achieved, for example if the girls spoke up more in class, or if there were more female principals or senior mathematics teachers, or if girls' access to the large playing areas was increased then the inequity would be eradicated. In this spirit policy statements have been written, curriculum documents drawn up and teachers required to demonstrate a commitment to the need to promote equitable outcomes between male and female pupils. To date there has not been a spectacular success gained by school based initiatives directed at promoting gender

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equity. It is the contention of this thesis that the absence of an adequate theoretical base from which an analysis of gender relations in schooling can be carried out means that any measures for reform are unlikely to be more than superficial. It is the task of theory to lay bare the underlying structural cause of inequality, whereas atheoretical reforms address only the symptoms and thus their effect is limited. This chapter will attempt to establish a theoretical framework for the analysis of gender relations in educational practice.

(ii) The role of psychology.

The academic study of education has been traditionally linked more closely with psychology than other tertiary disciplines. Questions about the meaning and process of human development and how children learn have been undertaken as central to education courses and required units of study in teacher training. Because teachers are likely to have been influenced by the way in which psychology has explained sex differences it seems proper to begin the search for an adequate theory of gender relations in education with an investigation of psychological theory. There are three themes within psychology from which the question of sex differences is addressed, namely biological determinism, social learning theory and cognitive development theory. Each will be discussed briefly, and will be demonstrated as inadequate as an explanatory base.

a. biological determinism.

Within this approach there are varying degrees to which it is argued that biological sex dictates certain features of the individual's mental capacities and operations, personality attributes and affective variables. While this orientation was dominant in the early days of psychology, it has been roundly criticised insofar as all too often there was an assumption of difference rather than a demonstration of it. Vestigial traces of this approach exist within recent psychology in the repeatedly demonstrated tendency for research that reveals no difference between the sexes to neglect to report the sameness finding whereas difference is

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always worthy of mention (Maccoby and Jacklin,1975). To some degree this effect is a logical outcome of the methodology and statistical procedures of quantitative psychology, in which the rejection of the null hypothesis constitutes a result. In sex/gender research however, where the differences within groups have been continually shown to be greater than those between groups , the categorization of subjects by sex is hardly appropriate, even on the terms of the methodology itself. Psychology has in effect constructed sex as a category and then proceeded to publish in favour of this construction. The effect of this approach has been to severely limit the potential of empiricist psychology to contribute to a theory of gender.

The essentialist base of biological determinism forms part of the basis of psychoanalytic theory with its emphasis on identification with the same sex parent as the condition for proper psychological development. It is beyond the scope of the present work to enter into a full discussion of the ways in which the classic formulations of psychoanalysis have been deconstructed by feminist scholars who argue that the responsibility for engendering individuals is best understood in terms of social practices and the values embedded therein rather than through innate biological givens (Mitchell,1975; Chodorow,1978). Although strict adherence to biological determinism is by now a relatively rare and intellectually tenuous phenomenon, there are indications of its longevity in popular understandings of the reasons for gender appropriate behaviour and responses to schooling. The influence of the child's social world and the people in it have become increasingly accepted as important in the formation of gender, and these form the basis for the next theoretical orientation.

b. social learning theory.

This is the most frequently given theoretical account of the way in which children learn gender appropriate behaviour and attitudes. In this view children are rewarded for behaviour which conforms to a gender identity considered appropriate and punished for behaviour which does not fit in. Although this orientation has very perceptible roots in the

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behaviorist theory of learning which has been roundly criticised in mainstream psychology for its determinist view of the environment and its downplaying of the individual cognition, it does not place the main weight of explanation on the sex of the individual per se. In this approach it is the social world, the cultural environment that produces sex-typed or gendered behaviour. The fact that there is an almost limitless amount of empirical evidence to support the main themes of social learning theory has no doubt added to its popularity as a theory. Children *are* rewarded for sex appropriate behaviour and punished for its opposite. The value of this orientation as a theory is, however, highly questionable. Couched as it is within a very loose conception of *sex role theory*, using concepts of *role* and *stereotype* and *role model*, it is simply not capable of explaining why people act that way in the first place (a similar criticism has been made against behaviourist theory generally!). Nor does social learning theory explain why one role model is taken up and another rejected, for which a theory of power and dominance is needed. Neither, even more importantly, can it account for change (Connell,1983,1987; Davies,1982, 1989a; Franzway and Lowe,1978). It is interesting that these criticisms of social learning theory have come from sociologists whose task it is to explain the social, rather than from psychologists who focus on the individual as the object of analysis. Social learning theory is essentially a descriptor of a static state, but it really leaves unchallenged its roots in biological determinism to which it reverts when challenged to provide answers to the questions raised above. Much is made by social learning theorists of the role of imitation in the learning of sex appropriate behaviour, as against the identification put forward by the psychoanalytic theorists. It would appear that the difference is largely semantic reflecting the different labelling of the broader orientation but without substantive disagreement in terms of the behaviour described. In a consideration of psychological accounts of the learning of gender appropriate behaviour, social learning theory presents as the soft face of an essentialist determinism. As Davies writes :

People who think in terms of role theory often fall back on biology to explain the bits that do not quite seem to fit learning theory.
(Davies,1989a,p.4)

c. cognitive development theory.

In this view the individual's learning is explained in terms of her or his development of cognitive structures or schema through which the world is analysed and interpreted. The most widely known proponent of this approach is Piaget whose work has had an enormous impact on education in most Western countries. By placing the child at the active centre of the educational experience Piaget has been responsible for reshaping pedagogical practice to encourage and foster the role of curiosity and discovery in learning. The contribution of this theoretical orientation for the present work lies in its formulation of a link between individual and environment insofar as it allows for the influence of both the developing individual and of the world in which she or he exists. For Piaget neither the individual nor the social world exists independently of the other. Development is seen as essentially an interactive process, neither the person nor the environment are determining features. In terms of gender the cognitive development approach has recently encountered substantial critique and been the starting point of some interesting developments. Walkerdine has shown that the Piagetian emphasis on the child being curious and active, the backbone of currently accepted progressive pedagogy, operates in classrooms in ways that are consistent with and complementary to behaviours that are sanctioned for males but not for females and that therefore the adoption of the principles of progressive pedagogy is far from gender neutral (Walkerdine,1984a). It may be that this effect derives more from classroom applications than from the original theory, but it is indisputable that classroom environments have changed markedly during the second half of this century, that the general direction of this change is towards progressivism, and that the chief theoretical justification offered for this change is grounded in Piagetian theory.

The concept of moral development that grew out of the work of Piaget and Kohlberg has been challenged by Gilligan (1982,1990) who argues that the model that had been put forward as universal was in reality a more accurate description of the typical pattern of moral development in males than in females. It is important to note that Gilligan does not contest the concept of a stage ordered development accomplished in steps of qualitative

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difference, nor does she espouse a new essentialism in proposing an "ethic of care" as a descriptor of female moral development, but rather her thesis centres on the ways in which moral development occurs in females as a product of their societal experiences which are different from those of their male peers. This position is clearly consistent within the tenets of cognitive development theory and avoids the determinism of the first two approaches mentioned. While Gilligan's work has attracted criticism it is evidence that there are researchers working within mainstream psychology who question the methodology associated with the generation of theory.

Some feminist work within psychology has taken issue with the basic question of what it means to know and have challenged the basis of cognitive psychology from this perspective. Belenky et al (1986) argue that women approach learning and come to know in ways that are different from those of men, and that for women knowing is often a separated out aspect of personality in ways that it is not for men. While this work has also attracted criticism at the conceptual and the methodological level, it is here presented as evidence that there are researchers working within psychology who take up the feminist challenge to question the bases upon which theory is built.

One clearly identifiable perspective coming from several psychologists whose work addresses the question of gender is the need to theorize not only about the individual but also about the world in which she or he lives. Deaux, the author of several reviews of American psychological work on gender has titled one of her publications in this area 'From individual differences to social categories' (Deaux,1984). This position is echoed by Unger, who writes:

Perhaps the greatest danger of a cognitive perspective is that psychologists will come to believe that all the questions about sex and gender can be answered within that paradigm, and we will forget that there are real societal forces that impact on the individual's ability to influence his or her own reality. The major social fact that has been ignored has been the differential nature of social power.

(Unger,1989, p.24)

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The work of Sandra Bem makes an interesting case study of this point. Bem's early work was in role theory. She was the originator of the BSRI, the Bem Sex Role Inventory, which in the mid 70's was used widely to classify people according to the degree of masculinity or femininity they displayed (Bem,1974). This orientation is remembered chiefly because of its enthusiastic formulation of the concept of androgyny which was used to describe individuals who did not fall clearly within the totally masculine or feminine descriptions. By the early 80's Bem was reinterpreting her position in line with cognitive theory and writing of gender schema, very much in the tradition of language acquisition theorists (Bem, 1981). Gender was here a basic structure which governed one's perceptions of the world and one's place in it and operated as a constant mediator of experience and intellectual activity. Most recently Bem has sought to reclaim her theory from the restraint of cognitive theory and writes instead of a gender schema being a cultural lens and thus opening the theory to include aspects of the social world and the surrounding culture (Bem,1987). In this work Bem shows that she too is stretching the boundaries of the parent discipline as she attempts to develop new ways of theorizing gender.

To some degree the trend within psychology to broaden its theoretical focus in attempting to generate an adequate basis for theorizing gender is reflected in the language used, in fact its own discourse. The past decade has seen a definite shift in the psychological literature from the use of the term *sex*, a distinctly biological variable, to the term *gender* which, by definition, invokes the concept of the social. Within mainstream psychology attempts to explain the effect of gender on individual behaviour and attitudes have revealed a need to involve the cultural environment in which the person is located. The discussion now turns to an examination of theories which address social formulations and the function of schooling.

(iii) Sociology of education : theoretical trends.

The tensions that have been briefly noted to occur in psychology as it attempts to come to

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grips with social constructs may be reflected in theories of social division which need also to account for the ways in which members are recruited to differing positions. Thus it seems appropriate at this stage to turn to an examination of social theory in terms of the treatment of gender as a factor in social division and in socialization.

The sociology of education has consistently stressed the role of the school in accommodating individuals to their socially ascribed positions and makes a logical starting point for looking at the role of the school in the social construction of gender. At the outset it must be noted that questions of gender as a structured social division had been largely neglected in the sociology of education before the last decade, and recent surveys have shown that gender remains as a marginal status topic. Delamont (1989) examined the impact of feminism on the sociology of education as revealed in recently published work and concluded

Despite the serious nature of the criticisms of the male bias in the sociology of education ... the mainstream of the research area has flowed on largely indifferent and unimpressed. Work on women has been 'ghettoised' - given a separate chapter which is isolated from the rest of the contents. (Delamont,1989,p.270)

The following section provides a brief account of the broad theoretical trends that have shaped the direction of educational sociology, with particular reference to the positioning (or possible positioning) of gender.

The functionalism that had dominated the sociology of education in the earlier part of the century was nowhere better evidenced than in the official reports on the education of girls. Schools in general were understood to carry out the task of fitting individuals for their social roles and the role of females was widely understood to be encompassed by that of wife and mother (see for example, Newsom Report (U.K.)1948; Miller,1987). There were some differences between education seen as necessary for working class women and that deemed appropriate for their bourgeois peers, but it was a clearly gender defined enterprise. Even the few schools designed to cater to academically elite girls sought avidly to conform to the appropriate standards of female decorum (Delamont,1983,1989). As a

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case study the history of women's education could be read as primary evidence of functionalist theory, although analyses showing this relationship are only currently appearing in some feminist historical accounts.

The functionalist stance in sociology lost favour in the face of the widespread disillusion with the liberal ideal that state provided general education would work to break down social divisions, and the past three decades have seen increasingly sophisticated accounts from Marxist inspired educational sociologists which describe the ways in which schools work to confirm class based social division rather than challenge it. In such accounts the school's role is seen as particularly important. Schools have become, in Althusser's memorable phrase, 'ideological state apparatuses', working to ensure that the set of understandings necessary for social maintenance are reproduced in succeeding generations (Althusser,1971). Such a claim rendered problematic the processes of schooling, rather than resting claims on the level achieved and the qualifications gained. The concepts of ideology and relatedly, hegemony were highlighted by this approach (see for example, Apple,1979,1982). British and American theorists used the term 'ideology' to describe the set of ideas, values and practices shared by certain groups which to varying degrees masked the real conditions of their existence. Feminist theorists have subsequently taken a similar position in demonstrating ways in which popular culture contributes to the maintenance of gender inequality - perhaps most clearly seen in Walkerdine's title *Someday my prince will come*. (Walkerdine,1984b). Hegemony, a concept originating in the writing of Gramsci (Gramsci,1971), is used to describe the process whereby dominant groups win ideological consent of the dominated to their unequal position. Schools were seen as having a particularly powerful role in this process. Attention was turned to the classroom encounter where it was maintained the form of relations between teacher and taught prepared the students for their position in the workforce (Bowles and Gintis,1976). In this way classroom processes were said to correspond to social processes in the workforce and the theory was described as 'social reproduction'. An Australian study by Branson and Miller (1979) was carried out in a fairly literal application of the theory to Australian schooling,

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and is also vulnerable to the criticisms of over determinism that had been levelled at the American work. However Branson and Miller were among the first to see the potential application of the theory of social reproduction to the question of gender and their work included 'sex' in its title and as a category in its tables. This work did not examine the constitution of individuals as gendered identities and despite the radical nature at the time of including 'sex' as a category it did not raise the issue of gender as problematic. The analysis was carried out along class lines and gender was included only as a subset of class at the theoretical level.

The critics of social reproduction theory were quick to note that this theory was flawed with the same element of determinism that had characterized the earlier functionalist accounts, leaving no room for change, for human agency, for breaks in the cycle (Connell,1983,1987). A counter theoretical perspective was urged, namely theories of 'resistance' in which attention was directed to students whose actions were seen as oppositional to the educational press of the school (Giroux,1983). Although resistance theories were set up in opposition to the unidirectional mechanistic version of reproduction theory, it is important to note that they essentially rest on a vision of the school working to produce social division which is the main tenet of reproduction theory. Resistance theorists appeared to celebrate the oppositional stance taken by some students (identified by Walker in the title 'Rebels with our applause?'(Walker,1984)) in ways which both rested on a liberal/humanist notion of the individual struggling against the 'system' and were to be identified by feminist writers as consistent with a patriarchal notion of agency from which females were excluded. Two Australian studies of school resistance emerging in the early eighties were not marked by the lionizing of school resistance in the British studies (most notably in Willis,1978) but neither did they offer a counterpoint to the way in which school experience for the focus group of girls reproduced class and gender relations (Thomas,1980; Moran,1983).

By 1980 Bowles and Gintis had retreated from an overly rigid application of the

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'correspondence principle' but were still arguing for attention to be focused on the classroom encounter as one of the major achievements of their approach (Gintis and Bowles, 1980). By focussing on the experience of schooling the correspondence principle provided a consistent theoretical framework for investigating the school as an arena of social interaction. From this orientation comes a school of education research which focuses on the school as a social system. Such research tends to be carried out using ethnography or participant observation as a data gathering methodology and the subsequent analyses relate such experience to structured social outcomes. In the United Kingdom the work of Hargreaves (1967), Lacey (1970), Ball (1981), Woods (1983), Sharp and Green (1975) fits into this tradition although it is worth noting that there was a tendency in the analyses to treat the school as an end in itself rather than relating it to social structures. In Australian educational research there has not been as yet such a strong trend, Davies (1982) and Macpherson (1983) being relatively unique.

Subsequently some British feminist analyses of classroom interaction have taken a similar, if less theoretically elaborated, perspective (Delamont, 1976, 1980; Clarricoates, 1980, 1981; Stanworth, 1983; Spender, 1980, 1982). In these case studies the classroom processes are seen to be directly related to the setting up of gender relations in the future generation. An interesting and somewhat parallel theoretical development is visible in the American work of Anyon (1981a, 1981b, 1983). The first reports of this research were grounded in a theoretical position which related the features of the educational encounter to the class location of the participants, whereas the later report from the same data base concentrated on gender-typed features of classroom processes in interaction with those based on social class.

(iv) Class and gender.

The problem for feminist theorists working within the theory of social reproduction concerned the relative importance of class and gender. While not wanting to disavow the

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degree to which social institutions were caught up in the maintenance of class based social division some theorists sought to place much more emphasis on the structured relationships of gender. In this instance education theorists mirror a debate within feminism as the marxist/socialist feminists take up a different position from radical feminists or indeed liberal feminists (Eisenstein,1984). The tension between the theoretical location and the positioning of gender within it is seen clearly in the writing of Macdonald who, in 1980, wrote :

They (definitions of masculinity and femininity) are socially constructed categories and power relations which are contained within , and defined by, the structure of class relations.

(Macdonald,1980a,p.35)

Elsewhere, in the same year, Macdonald wrote:

Any theory of education which seeks to account for the form of schooling in terms of the mode of reproduction of the workforce, I would argue, must recognize the structure of male-female dominance as an integral and not subsidiary principle of the work process.

(Macdonald,1980b,p.15)

Macdonald finally reaches the view that the structures of class and gender operate both separately and in interaction, a perspective that appears most theoretically useful at this stage. This is, in fact, the 'dual systems' theory noted by Connell (1987) to offer a potential compromise to the dilemma of positioning class and gender in social theory. A most telling account of the ways in which schooling practice interacts with class and gender is given in the work of Connell and his colleagues (Connell et al.,1982,1985) who analysed schooling experience in contrasting class and gender locations. Interestingly for the present work, the design of this study was clearly originally constructed so as to highlight the effects of class on schooling, and in a later seminar the senior author admitted that the team were initially unprepared for all the information they gathered about gender relations in schooling. Such was the gap in social theory a decade ago that gender had not been viewed as a serious and consistent structured social division.

Much of the theoretical work described in this section took up the issue of social division, built on an economic base, as its focus. Another aspect of a socially divisive process that is

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pertinent to the present work falls under the heading cultural division whereby certain areas of knowledge, as well as certain attitudes and practices are seen as the prerogative of one group rather than another. Because one of the issues to be dealt with in this thesis concerns the processes whereby certain knowledge areas become seen as gender appropriate, it seems useful to deal with this orientation in some depth.

(v) Bourdieu and cultural reproduction.

The most carefully elaborated theory of reproduction comes from the work of Bourdieu and his colleagues (Bourdieu 1977a, Bourdieu and Passeron, 1977). Bourdieu's focus is on cultural reproduction and his theory forges a link between the work of schools in initiating students into an understanding of cultural forms and the maintenance of cultural division as a subset of and support for social division. Bourdieu does not deny the fundamental economic base of societal division but he does represent culture as having a dimension for stratification of a similar order, if not a prerequisite for, enduring social division. This theory would appear to provide a potential framework for the argument that schooling practice works to place males and females in different relation to culture, here viewed as the accumulated body of attitudes, values and skills officially imparted even-handedly by the schools. It is noteworthy that his work has not been taken up by many English background sociologists of education apart from dutiful mentions in introductory texts despite the fact that Bourdieu places educational sociology at the centre of its parent discipline (Delamont,1989). This may be partly explained by the frequently noted obscure writing style, and also by the fact that the approach has received strong criticism (Giroux,1983;Connell,1983). (The criticism will be discussed in a later section.) However he is one of the theorists whose work is seen as central by Delamont in her recent book addressing theories of gender in education (Delamont,1989). The following paragraphs will identify the main ideas from Bourdieu which relate to the concerns of the thesis.

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a. cultural capital. Bourdieu formalized the notion of schools working to maintain differences between groups of students in the concept of cultural capital, in which the focus is on the banking and inherited aspects of capital, not the market exchange. According to Bourdieu cultural capital refers to a set of attitudes, vocabulary and value orientations which is inherited by (in the bequeathed not the genetic sense) and typical of children of the dominant classes in ways which ensure exclusivity. Cultural capital is also essentially the truck of schools which do not operate in a free market economy (such as that assumed by theories of meritocracy) but rather provide the cultural goods for those already endowed with the means for their assimilation. As he explains it :

The inheritance of cultural wealth which has been accumulated and bequeathed by previous generations only really belongs (although it is *theoretically* offered to everyone) to those endowed with the means of appropriating it for themselves.

(Bourdieu,1977a,p.488)

This view seems to offer potential for addressing the educational processes wherein, as has been shown in the previous chapter, sitting in the same classroom, being offered the same educational courses is associated with group differences in educational outcomes.

Bourdieu's theory of cultural reproduction differs importantly from that of Bowles and Gintis in that in this view the school is seen as enjoying relative autonomy from the economic determinants of the state. This autonomy is important in that it enables schools to operate in a guise of impartiality and neutrality. In this way, according to Bourdieu, schools are able to promote inequality in the name of fairness and objectivity. As the argument goes :

It is precisely its relative autonomy that enables the traditional education system to make a specific contribution towards reproducing the structure of class relations, since it need only obey its own rules in order to obey, additionally, the external imperatives defining its function of legitimating the social order ...

(Bourdieu et al.,1977,p.199)

The impression of fairness and objectivity can be seen to be crucially related to the school's construction of gender wherein gender related practices are seen by pupils and teachers as properties of individuals rather than as results of institutional practice (see for e.g. Clarricoates,1980).

b. symbolic violence. In Bourdieu's writing the concept of symbolic violence refers to the ways in which many of the unwritten aspects of the negotiated understandings between teacher and taught are the result of the imposition of an authority structure which may or may not be based upon legitimate pedagogic authority. Such a concept proves to be a powerful analytical tool in the current post-progressive stage of education. In Bourdieu's words:

The absence of a genuine law ... must not lead us to forget that any socially recognized formulation contains within it an intrinsic power to reinforce dispositions symbolically.

(Bourdieu,1977b,p.21)

Through symbolic violence, Bourdieu claims that whole systems of significations are transmitted in such conventional phrases as 'sit up straight' or 'that's not the way to hold your knife'. It can be seen that the construct of symbolic violence is also appropriate to understanding the force of gender relevant dicta such as 'big boys don't cry' or 'young ladies should speak softly' and similar comments that have been recorded in classrooms (Delamont,1980;Clarricoates,1981). In many ways Bourdieu's symbolic violence is similar to the concept of 'hidden curriculum' (see, for example, Apple,1979) or 'invisible pedagogy' (Bernstein,1974), however it may be seen that the concept is operationalized in Bourdieu, whereas in other theorists it is simply identified.

c. habitus. Bourdieu's theory of pedagogic action is grounded in a theory of the relations between objective structures, practice and the habitus. The concept of the habitus is both elusive and crucial to the theory. The habitus is to be interpreted in this thesis as a cultural logic whereby members of a group are held together and new members are inducted into group membership. Because Bourdieu's theory centers on cultural reproduction the habitus refers to shared cultural attitudes, taste and understandings. The theory of the habitus focusses attention on the practice of social relations - what is said, and not said, styles of speaking and behaving, modes of thinking and so on. To the habitus falls the essential task of dialectic interaction between social structures and individual

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membership, engendering a process of assimilation to the group and integration within the group. Bourdieu describes this work as 'the dialectic of objectification and embodiment' wherein the habitus operates as a 'system of dispositions', 'a system of durably acquired schemes of perceptions of thought and action engendered by objective conditions but tending to persist even after alteration to those conditions'(Bourdieu,1977b: 87). For example in the case of a migrant family it is frequently observed that the attitudes and traditions of the parent country tend to persist even though they may not be necessary for or congenial to the adopted country.

In subsequent writing Bourdieu has continued to develop and refine the concept of habitus. By 1980 there is a linguistic habitus (reminiscent of Bernstein's notion of codes) but also habitus has been developed to include concepts from Bourdieu's early work such as body hexis which refers to the learning of appropriate physical behaviour and recognition of such behaviour within cultural locations.

There are two aspects of habitus that will be taken up by this thesis. The first is that habitus with its essential involvement of embodiment has a particular application to a theory of gender construction, an application noted by Bourdieu in

... the habitus makes coherence and necessity out of accident and contingency : for example the equivalences it establishes between positions in the division of labour and the division between the sexes coincides almost perfectly.

(Bourdieu,1977b,p.87)

Davies (1989a) writes of the way in which each person's body takes on the knowledge of its maleness or femaleness through its practices in ways that are not limited to the cognitive domain. Grosz (1986) has written of the way in which gender is inscribed onto our bodies not just in terms of dress codes and hair styles but also in the way of moving and the ways in which movement is interpreted. Both these writers describe the inscription of gender onto physical selves . For Bourdieu, the habitus signals the process of such inscription.

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The other aspect of habitus relevant to this work is that it forges a necessary conceptual link between individual and society, and as such it is the medium whereby, in Berger and Luckman's phrase, 'the social construction of reality' is accomplished (Berger and Luckman, 1966). (It is important to note at this point, however, that Bourdieu accords much more importance to the objective structures than as mere reifications of subjective awareness.) The habitus provides an integrating mechanism whereby individuals are drawn into a shared system of understandings within their social group as part of a socially divided world. The theory of habitus focusses attention on the processes whereby membership is achieved. Some theorists have interpreted the habitus as a term describing the process loosely known as socialization (Nash,1990) which seems a crude simplification of the complex recruitment into and development within the socio-cultural conditions Bourdieu describes. And, in Bourdieu, schooling is crucially involved in providing both the means of integration within groups and the maintenance of distinction between groups. Just as such a process formed the focus of Willis' study of working class male youth sub-culture, as seen in its subtitle *How middle class kids get middle class jobs - and why working class kids let them*, so will a similar question underlie the present examination , viz. "How and why boys and girls are recruited into different sets of understanding and attitudes in schooling?" The concept of habitus appears to offer significant explanatory potential and will be interrogated in the subsequent analysis.

(vi) Critique of reproduction theory.

Bourdieu's theory of cultural reproduction has been criticised on the same lines as the previously discussed criticism of social reproduction, namely that it is overly determinist and presents an essentially mechanistic view in which individuals are governed by overbearing structures and have no potential for acting on their own (Giroux,1983). In his formulation of habitus, however, Bourdieu is careful to invoke the concept of 'individual social trajectory' which must be seen as a 'structural variant' of all the other group or class habitus, and which can allow for change or challenge at the individual level. However

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allowing for change is not quite the same thing as explaining it, and this does seem to be a theoretical weakness in Bourdieu's theory. The concept does appear more useful, however, in its initial formulation as an integrative mechanism. Harker(1984) has sought to defend Bourdieu's theory against the charge of theoretical overdetermination and accuses Bourdieu's critics of misreading the theory, particularly with respect to habitus. While it is true that habitus does allow for individual variation, there is less scope for change at the group level. For example when some aspects of group habitus are successfully challenged in such a way as to bring about structural change (as, for example, in the curriculum provisions for ruling class girls in Connell et al.(1982)) the effect of such a change will not be revealed in 'experiences statistically common' (Bourdieu 1977b,p.36) for quite some time. In other words it would appear that the theory can describe change some time after it has occurred rather than account for change at the time of its happening. This is clearly a problem for the present project insofar as schools have been a site of fairly rapid changes in the provision for and treatment of female students in the past decade and the precise delineation of the meanings of these changes for the people involved may be beyond the scope of the theory of habitus.

Connell (1983) has also criticised Bourdieu's theory of cultural reproduction in that it does not account for conflict, contradiction and discontinuities in both individual and group structures in society. The value of such a criticism is best seen in terms of an investigation of schooling effects. Consider the contradictions evident in the 'lads' in Willis' work (1978). Although some of the group had to develop into the anti-school position they all held by the end of the book, the process of this development is told in such a way as to adduce the function of something very like that which Bourdieu describes as habitus. In this example the class habitus into which the lads are assimilated represents a set of dispositions, a system of values within which manual labour and aggressive masculinity are valued highly. Happily in this example the reproduction effect is seen to work in a relatively unproblematic way. It would however be more difficult to explain the case of the 'ear-holes' in the study in terms of the theory of cultural reproduction for these are

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enmeshed in the same class understandings and yet have chosen to value mental work above manual and even to risk their masculine status in so doing. It is tempting to suggest that the 'ear-holes' may have provided a more fascinating topic upon which to base the study than the 'lads', at least in terms of usefulness to the present project. But here too there is evidence that the structure of gender relations is not totally comprised in that of class. Willis does appear to accept the aggressive macho stance of the lads as masculinity and in doing so avoids the problem of charting the challenge to this narrow definition emerging from the 'ear-holes' whose behaviour could be interpreted as reconstituting the class based concept of masculinity for their particular group. This criticism of Willis is further developed by McRobbie and Garber (1976). Ultimately, however, Willis' study does not explain why the 'lads' took one path and the 'ear-holes' another, although both paths are recognizable and fairly frequently confronted in studies of schooling. It would appear then that the theory of habitus represents a partial answer to the question of how it is that individuals come to belong to groups with whom there is a shared cultural understanding - which is one of the central issues in generating a theory of gender.

A more initially satisfying theoretical basis for analysis of similar questions is provided in the work of Walker (1988) who uses a theory of material pragmatism to account for educational choices. In this approach young people are seen to be making the best choices possible on the basis of the information available to them. Thus students like the 'lads' who opt out of the academic project of the school are considered to have made a realistic assessment of their chances of positive outcomes from schooling and therefore make a rational decision to maximise their enjoyment of a bleak and unrewarding situation. While material pragmatism is intellectually attractive it does depend on a liberal-humanist concept of rational individual action, a perspective that has been shown to be unsatisfactory when applied to girls and women (Smith, 1987). The studies of Willis and Walker do not account for changes within shared understandings of education and the reader is left with the problem of change in habitus which would appear to be a potential weakness in Bourdieu's theoretical framework.

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The concept of habitus appears to be the most controversial aspect of Bourdieu's theory. Nash (1990) while arguing for the overall value to be gained from reading Bourdieu in terms of his contribution to the understanding of schooling as a social system, regards the habitus as an 'inherently ambiguous and over-loaded central concept' which may potentially limit the usefulness of the theory as a whole. No doubt the concept is least problematic when applied to steady state reproduction, but its explanatory powers are limited when contestation is involved, that is when the accepted mores of a particular group or class are undergoing change or challenge. Because such is precisely the case in terms of current views of gender appropriate behaviour it seems unlikely that the theory of habitus can totally account for gender related educational experience and outcomes. At times Bourdieu does note that the reproduction of which he writes is not necessarily a uniformly achieved result. He writes of experiences 'more or less' common to the group, or of structures 'partially' reproducing themselves, but the point is here that the theory depends upon there being more similarities than departures. Connell (1983) also notes the inapplicability of the model of 'total reproduction' in:

The 'reproduction of social relations' is a chimera. In all strictness it never occurs; it cannot occur.

(Connell,1983,p.149)

Connell's point is that what is being produced in social relations is not a cloned identity, but rather an intelligible succession. But this too is in keeping with the stance of many of the reproduction theorists. After all these theorists, and especially Bourdieu, have focused on the essential tension between forces of change and the perpetuation of privilege, and on the school's role in respect to this tension. The criticisms noted here are important in that they produce a more careful reading of the theory and a more complex understanding of just what is being proposed and not proposed. From the perspective of this thesis it seems that the theory of habitus offers a theoretical explanation of how it is that young people take up aspects of group membership, in this case that of gender conformity, but it may be that the theory is more powerful as explanation in a steady state situation than in the current climate in which understandings related to gender are undergoing considerable debate and

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revision. Habitus, for the present work, will be interpreted as a mechanism for producing understandings held in common by groups. The focus will be on the processes through which group membership is achieved, involving attention to language and also the acting out of rules about physical activity and behaviour - where one sits, how fast one runs, what clothes are worn and whether or not one speaks in class, to name but a few.

The present project will follow Delamont (1989) in that the analysis will utilize some central concepts from Bourdieu, notably cultural capital, symbolic violence and habitus; at the same time it is important to register the need to describe social relations in terms of process, dynamic and change and thus avoid falling into the problems that have been identified in taking the concept of reproduction as a simple and straightforward recreation of socio-cultural division. At the same time, and again following Delamont, it seems that the theoretical approaches canvassed thus far are not without significant problems when attempting to develop a theory of gender relations in education.

(vii) The possibility of combining approaches.

In the attempt to draw out a suitable basis for establishing a framework for a theory of gender relations in schooling it is necessary to recognize the input from both psychology and sociology. At one level the psychological emphasis on the individual and the concept of socialization as a process offer potential to answer the criticisms raised against reproduction theory in its failure to account for human agency (Giroux,1983). At the same time the way in which psychology has typically treated the sex/gender construct leaves the explanations at the level of the individual, and as has been seen, lurches dangerously towards essentialist explanations of human behaviour. The ambit of sociological explanation appears initially more promising in its formulation of the social world and rendering as problematic the divisions within that world, but as has been identified in the previous sections, the actual process of recruitment to and development of membership groups in which as Bourdieu has suggested the school plays a crucial role, is as yet lacking

clear definition. At this stage the question is not a methodological one (such will be addressed in the following chapter) but rather one of how to theorize the process and the school's function within it. The question of gender clearly draws on understandings from both disciplines and the search for an adequate theoretical framework appears to lodge in the middle ground, neither one nor the other. The situation appears to be a clear example of Bernstein's concept of classification (or Bourdieu's symbolic violence) which focuses on the arbitrary assignation of labels and boundaries to particular areas of knowledge. Coward(1983) has described the ways in which traditional knowledge areas are designed to shed light on their particular foci and, in so doing, work to hide other topics which do not easily fit within the chosen field. An interesting and relatively recent approach to this issue is to be found in post-structuralist analysis, which does challenge the boundedness and givenness of traditional disciplines. In this approach the socially constructed nature of knowledge is made evident, as are the connections between knowledge and power and thus the political function of knowledge, as seen in the writing of Michel Foucault. While again a full discussion of the theoretical ambit of post-structuralist theory is beyond the scope of the present work, the following section seeks to identify key themes in post-structuralist approaches which go some distance towards resolving the theoretical problem identified above.

(viii) Post-structuralist theory , discourse analysis.

Post-structuralist theory derives from the linguistic analysis of Saussure and Derrida and the relationship between knowledge and power identified by Foucault in his project of writing a 'history of the present' using the 'genealogical method'(Weedon,1987). Unlike the traditional disciplines within social science which attempt to provide a total picture of their subject, whether it be individual or society, in the post-structuralist approach the picture is always partial and always dynamic. This theoretical approach does not 'capture' the social flow so much as identify the directions in which it moves, its inherent contradictions and inbuilt tensions. Meaning is never set or limited and 'subjectivities' are

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continually being constituted and reconstituted in terms of the discourses available. Davies (1989b) writes that post-structuralist theory "provides a radical framework for understanding the relation between persons and their social world and for conceptualising social change" (p.xi). As such it has a clear relation to the central concern of the present work.

In attempting to investigate educational practice from a post-structuralist perspective attention is immediately directed at the language used, at the discourse of teachers and students. Discourse analysis and the study of text is not limited to the normal use of language, although language written and spoken does form a central focus. Attention in educational research within this approach is also given to the conformation of groups, the setting of the school, playground and classroom, the images used to describe certain events and the ways in which individuals relate to their physical bodies and how they are constrained. In many respects post-structuralist theory offers a partial solution to the problem encountered with the elusive concept of habitus, by explaining through the medium of discursive practices, just how the cultural logic of any particular group operates.

Post-structuralist analysis then is preoccupied with identifying the discursive practices inherent in any social situation and demonstrating the range of meanings and individual positionings made possible within such practices. Davies (1989b) working within this approach has redefined the notion of agency and shown how it is related to and contained within the available discourses, in this particular case those of a primary school classroom.

As she explains :

... the person is a person by virtue of the fact that they use the discursive practices of the collectives of which they are a member. Such collectives might include children, boys, students, a particular classroom, one's family, etc. Each person can only speak from the positions made available within these collectives through the recognized discursive practices used by each collective. Their desires are formulated in the terms that make sense in each of the discourses available to them.
(Davies,1989b,p.343)

In this approach agency, rather than being seen as a capacity of the unified knowable

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essential subject, is seen as a product of the discourse while at the same time allowing for different positionings to be taken up. Following the line of argument in Davies' earlier work (Davies,1987) gender here becomes a process rather than a static attribute, constituted and re-constituted by individuals taking up different positions within the available discourses. Meanings are being continually negotiated in social interaction. Davies (1989b) shows in her analysis of stories for young children and their response to these stories that they are engaged in a process of working out what it means to be male and female (often as not to be masculine and feminine), continually refining their positions and, importantly in this instance, rejecting positions they see as inappropriate. And discourse analysis provides a theoretical account of the reasoning behind this process, by demonstrating the multiplicity of available locations and the limitations beyond which the participants may not proceed.

Post-structuralist theory can be read as a further refinement of the structuralism of the sociological theories already discussed - it takes account of the structural bases of social division, but in addition it offers a theoretical explanation of the ways in which the divisions are produced and sustained by social interaction. Althusser had written that ideology "calls" to the person, post-structuralist theory with its focus on discourse shows how this calling works. Because of the range of discourses available in terms of the multiplicity of possible memberships as evidenced in the Davies' quotation above, post-structuralist analysis is always open to the possibility of contradiction and challenge as individuals are continually faced with competing discourses. Thus the 'ear-holes' in the Willis study (Willis,1978) can be seen to be responding to the official message of the school viz. "study hard and you will achieve", whereas the 'lads' take up positions within a competing discourse characterized by an aggressive masculinity, having fun and building a reputation for themselves which places them in an oppositional position to their teachers and the school. What is important, from a post-structuralist perspective, is that both discourses were available (and others as well) within the particular school and class location of the group, and so it can be seen that this approach affords a flexibility not

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present in the more literal applications of the previously discussed theories from psychology and sociology. Post-structuralist theory with its emphasis on language and text also contains implications for methodology which will be developed in the following chapter. At this stage it is worthy of note that this theoretical approach provides a new dimension to methodologies like participant observation which attempt to capture the 'lived experience' of any social interaction from the points of view of the participants. It also has the potential for linking the meanings made available within schooling with the possible positionings in the world beyond school. Schooling then fulfils the crucial role of inducting young people into educational discourses at the same time as providing opportunities for them to develop and refine the discursive practices they already know in terms of their positioning within the collectives of family, class, gender, ethnicity, peers among others.

It is argued in this study that post-structuralist theory provides an essential dynamic, a theoretical tool previously lacking from theories of gender. The focus on discursive practices allows for the examination of theory from the traditional disciplines of psychology and sociology insofar as such theories have become embedded in the language and practices of schooling, and indeed of the wider society. Theories from psychology and sociology have, in the way of all theories, themselves operated as discursive practices by defining particular topics as focal and then operating in ways such that the language and ways of thinking define and delimit what is possible to be addressed. Post-structuralist theory allows the researcher to look beyond the traditional boundaries, within the interstices of social theory. Such a place, as has been argued above, appears to be an appropriate starting point from which to generate a theory of gender.

(ix) Post-structuralism and education.

A further note on the advantages of taking up a post-structuralist perspective for a theory which relates to educational practice is warranted. Education has held a somewhat marginal

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position within the discourse of tertiary institutions as a serious topic of study, much less a basis for theory building. Comprised as it is of a fairly loose amalgam of traditional disciplines of psychology, sociology, philosophy and history it has not developed a theoretical base of its own, except for a pragmatic attention to schooling effects based more or less in logical positivism. Education students absorb psychology's emphasis on the individual and its reflection in the liberal-humanist ideal individualism of progressive pedagogy. History and sociology may be read as accounts of previous schooling systems which sacrificed individual interest to that of the group or in which individuals of exceptional brilliance were able to shine. By and large educational research has itself been carried out within the tenets and confines of the traditional disciplines. And thus it is not surprising that the question of gender relations in education has been addressed only recently - due no doubt to the rise in acceptance of feminist scholarship and women's studies as a tertiary 'discipline', and that it has not proceeded to be theorized in ways that are convincing and that have the potential upon which to base liberatory policy and transformative practice. Currently feminist educators, who incidentally reflect different orientations within feminism but share a commitment, in Lather's words, 'to foreground women' (Lather,1988,p.571), draw on popularly accepted liberal notions of equity (Byrne,1978), sociological theories of schooling and its effects (Deem,1978) and philosophical deconstructions of educational theory (Martin,1982). Others take up questions of essential difference from a psychological perspective in debates on the adequacy of the evidence (Sherman,1978) or contrariwise the claim of socially produced generalizable difference (Gilligan,1982, Belenky et al, 1986). Within the maze of scholarship that currently surrounds the question of gender and education it seems particularly necessary to adopt a theoretical perspective which recognizes these different and sometimes contradictory approaches and allows for some interconnectedness. And the project of post-structuralism is to provide such a reading.

(x) Gender and power.

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Ultimately any analysis of gender relations must involve a focus on power differentials in social interaction, following the connections made by Connell (1987). The dimension of power and differently located positioning vis-a-vis access to power is the central reason for looking at gender in the first place and it is the basis for investigating gender as a site of structured social division. The gender based differences in educational outcomes noted in the previous chapter take their meaning and importance not from simple difference per se, but rather from the fact that males and females are not being similarly empowered by schooling. Males emerge from school typically with a broader range of life choices, access to higher paid work and with understandings of their own potential significantly in advance of their female peers. At the same time the picture is not simply that of some students (males) being advantaged by schooling in ways that others (females) are not. Binary oppositions do affect the ways in which gendered subjectivities are produced such that to be good at football has the effect of confirming one's masculinity for a boy and to be inept and ignorant of the sport works to confirm femininity in a girl (Davies,1989a). But post-structuralist theory enables the analysis to demonstrate the dynamic and contested nature of gender constitution, and thus disallows the picture of girls as powerless victims of educational practice. Walkerdine recognizes this complexity in:

(girls) ... are not unitary subjects uniquely positioned, but produced as a nexus of subjectivities, in relations of power which are constantly shifting, rendering them at one moment powerful and at another powerless.

(Walkerdine, 1981,p.14)

Such a perspective is much more appropriate for an examination of gender effects of schooling than straightforward assertions of disadvantage which not only render an injustice to the young people so described but also come dangerously close to blaming the victim.

(xi) Summary.

This chapter has sought to provide a framework for a theory of gender relations in

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schooling, and in so doing to provide a theoretical basis for this thesis. In brief the argument has proceeded as follows:

- (i) the lack of a coherent basis for a theory of gender was demonstrated;
- (ii) psychological accounts of the sex/gender question were reviewed;
- (iii) the discussion turned to structural accounts of the relationship between schooling and social division and the criticism of such theory;
- (iv) it then moved to Bourdieu's theory of cultural reproduction and attended to the concepts of symbolic violence, habitus and cultural capital;
- (v) criticisms of both approaches to reproduction theory were registered, with the recognition that these criticisms rested heavily on the question of human agency as seen in the lived experience of schooling;
- (vi) feminist criticisms of the patriarchal notion of agency were noted;
- (vii) the theoretical debate was then carried into post-structuralist accounts which focus on discursive practices, paradox and contradiction and which allow for the adoption of differing positions within the multiplicity of discourses made available within the social situation;
- (viii) a post-structuralist approach was claimed to be particularly appropriate to an analysis of educational practice as it allowed for a theoretical range across a variety of disciplines and at the same time provided the necessary conceptual link between the micro-reality of the classroom and the broader social structure.
- (ix) the final point related to the need to address the issue of power in a theory of gender relations in schooling.

The project of this chapter has been to review existing theories of gender in order to provide a theoretical framework for the investigation of schooling practice. At this stage it is not the writer's intention to lay claim to a particular theory, or set of theories, but rather to indicate the theoretical approaches that have addressed the issue of gender and the school's role in the perpetuation of social inequality. The adequacy of the framework

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proposed here will be interrogated in the following chapters in terms of the explanations it provides for understanding the lived experience of schooling from the point of view of teachers and students. Ultimately the writer is committed to the position that theory must flow out of the data rather than be imposed upon it. A grounded theory approach (Glaser and Strauss,1967) seems most appropriate in that none of the theoretical approaches discussed above appears sufficient in itself to account for the construction of gender in schooling. Even the last mentioned, post-structuralist theory, must needs be seen to rest on pre-given assumptions of the structural nature of gender division and its social and psychological concomitants. Hence the analysis of schooling practice to be presented here will be carried out in terms of the range of theoretical approaches introduced in this chapter and ultimately the thesis will attempt to comment on the usefulness of each of them.

Any investigation of schooling must involve particular theoretical positions, not simply in the analysis of the data but also in the ways in which the data are gathered. There will of course be some association between key constructs in the analytical theory and the methodology adopted. The following chapter will outline the manner in which the investigation of schooling practice will proceed.

CHAPTER 3. METHODOLOGY

Methodology : Ethnography discussed and defined, looking at meaning making, the function of the group, thick description, the research design laid out.

Argument. That ethnography is the best way to establish a data base from which to analyze the group generated understandings and meanings that constitute the target of this research. That the use of a mixed methods approach will further enhance the richness of the data and the durability of theory to be derived from it.

(i) Introduction.

The research literature reviewed in the opening chapter connected schooling outcomes in Australia and overseas, and to some degree schooling processes, mainly overseas, to the production of gender differences in attitudes, abilities and aspirations. In the second chapter theories were discussed which related the function of schooling to the production and maintenance of social inequality and particularly to gender. The central question at the basis of the present study still remains:

In what ways do schooling processes contribute to students understanding themselves as members of a gender distinct group in a gender divided world?

This question is seen as a first order construct aimed at explicating the school's involvement in the formation of the gender group rather than demonstrating differences between the two. As such the question pre-dates the demonstration of difference at the psychological level of personality attributes or at the achievement level of ability tests or other schooling outcomes. Rather than working from an established difference and inferring some contributing feature of the schooling experience the present study with its

focus on process seeks to identify particular aspects of schooling experience which can be seen to build up to the sorts of differences in schooling outcomes already established. Insofar as the basic question focusses attention on the 'taking on' of membership of a gender group, rather than accepting it as given (as in static measures of self perception) there is evidence of research interest in the actor's definition of the situation, a feature frequently overlooked in social science research, and yet crucial in generating an understanding of the educational implications. To paraphrase Willis, perhaps the problem here is not so much why the boys as a group manage to secure for themselves more places in the high status male-dominated subjects in the senior school, but rather why the girls let them. Such a perspective, namely that of deconstructing the processes and revealing the embedded meanings, is precisely that adopted by interpretive sociology which consists of a variety of analytic schools at times loosely grouped under the title 'interactionism'. Blumer has given the classic statement of the interactionist position with respect to methodology:

... the interactionist focuses upon emergence and negotiation - the processes by which social action (in groups, organizations or societies) is constantly being constructed, modified, selected, checked, suspended, terminated and recommenced in everyday life.
(Hammersley and Woods,1976,p.3).

Elsewhere the interactionists are seen to stress "the need to get at people's meanings, and their definitions of the situation and at changes in these over time" (Cuff and Payne,1979,p.170). The current study adopts this orientation coupled with the attention to discursive practices coming from post-structuralist theory in its endeavour to reveal the ways in which the students' understandings of the world of school and their place in it reflect gender distinctions.

(ii) Focus questions/ sensitizing concepts.

The general issue of schooling and gender construction subsumes an extremely broad area

of research. Evidence from the previous chapters has been used to generate focus questions or 'sensitizing concepts'(Schwartz and Jacobs,1979), which attempt to capture essential features of gender construction in schooling or to cast the general problem into a specific area which lends itself to being examined. These questions are presented here to describe the initial stage of entry into the research, and as such they inform the original research design. It is also perhaps significant to note that the formulations underwent considerable change during the process of data gathering and analysis. Nor can it be presumed that the questions led to discrete answers. Rather than working to effect closure, they serve to identify topics around which clusters of constructs emerge from the research literature. Thus the research was initially guided by Malinowski's distinction between 'foreshadowed problems' and 'preconceived solutions' (Smith,1979,p.331). In this mode the following headings represent 'initial and partial analyses of the problem, the tenor of thinking of people who are working in related and relevant areas, and provisional modes of thinking'(Smith,1979,p.331). Such questions as initially formulated are as follows:

1. What is the relevance of age or developmental level in the development of gender distinction?

There is some evidence to suggest that the period of secondary schooling is a particularly sensitive time for the development of gender-related attitudes and awareness (Davies and Meighan,1975; Cowell,1981). At this time the physiological changes associated with puberty become evident, often associated with an increase in 'sex-role awareness'. At the same time the majority of Australian students move from primary to secondary school, a move which involves a change in student awareness of how schools work and the individual's place within them. The manner in which the change in school interacts with other changes due to physiological, psychological and cultural factors is obviously highly problematic. In the research on transition from primary to secondary school there is the puzzling problem of explaining why it is that girls, who as a group appear to be good students at the end of primary school, give way to the boys during the high school years

(e.g. see Moss,1982). It was therefore decided to focus on the transition from primary to secondary school as a critical period in the development of a group of students with particular implications for gender differences in development and treatment. More explicitly it was proposed to investigate whether classroom processes produced different gender implications at different levels of schooling, and whether these were registered as such by teachers and students.

2. What are the implications of schooling process and gender construction in terms of the class background of the students?

It was apparent from some of the overseas work that gender distinct practices were more typical of a working class background neighbourhood and school (Clarricoates,1980; Anyon,1983). The degree to which this particular attribute of class background is mediated by the school is unclear. Certainly the practices of the teachers in the studies cited would appear to confirm rather than challenge the accepted stereotypes. In Australia the interaction of class and gender has been noted (Roper,1971; Karmel 1973; Branson and Miller,1979; Connell et al 1981,1982). However in these studies the effects of class appear to be accepted as dominant in respect to educational outcomes insofar as the middle class girls are seen as advantaged by class in ways which countered the somewhat shadowy history of gender discrimination. Also very interesting in this respect was Hartley's study with English schoolteachers in which the teachers explained working class girls' disadvantage in terms of class and at the same time explained the differential outcomes of middle class children in terms of a rather vague 'theory' of sex difference (Hartley, 1983). In response to these concerns, the present work focussed on the schooling experience of a group of middle class children. The position taken here does not imply that the middle class environment of the school and pupils will present gender construction per se unrelated to class. Rather a careful reading of the above work suggests that the dimensions of class and gender are played out along different planes, and that the processes intrinsic to each are continually structuring, refracting , modifying, supporting or contradicting one another. By

selecting a site which could be clearly identified as privileged in class terms the researcher sought to minimise the influence of social class as a source of educational disadvantage and to highlight the effects of gender implications for boys and girls in the educational experience. At the same time, following Macdonald's suggestion (Macdonald,1980, quoted p.61) the theory that middle class girls (and their parents) would be in the vanguard of educational change and development could also be investigated. Thus the middle class environment while perhaps less likely to provide instances of overt gender construction such as were found in the working class schools of the English studies, is more likely to provide an arena of resistance to pressures of gender conformity, given class pressures for academic achievement.

3.What influence do official school structures have on the students' adherence to gender-bounded behaviour?

There are several implications in the literature which suggest that the formal organization of the school is particularly important for the student's developing awareness of a gender-divided world. The typical authority distribution in a school with a male principal and female teachers, male teachers in the senior years and in particular subject areas have been frequently cited as promoting notions of a gender division of labour (Girls and tomorrow: Schools Commission Report,1984). The current reworking of the continuing debate between the merits of coeducation as opposed to single sex schooling applies here too. For the present investigation it was therefore proposed to study a group of children at a typically ordered primary school (i.e. male principal, male deputy principal, majority of the teachers female) and to continue to monitor their schooling experience as they moved from primary school into two neighbouring secondary schools, one a typical coeducational high school with a male principal and a male dominated hierarchically ordered staff and the other a girls' school with a female principal and mixed staff. In this way there was opportunity to monitor interactions within different classroom settings (all female as against mixed groupings) and also to investigate student perceptions of power within the institution in

terms of staffing structure. It is noteworthy that the single sex school was not anticipated to be a gender neutral environment, although such an assumption appears frequently in some of the current critiques of coeducation for girls. Such a position ignores the historical context in which schooling developed with particular structures of gender segregation. Thus in the present study the different environments of single sex and coeducational schools were examined in terms of the different understandings arising out of their differing structures.

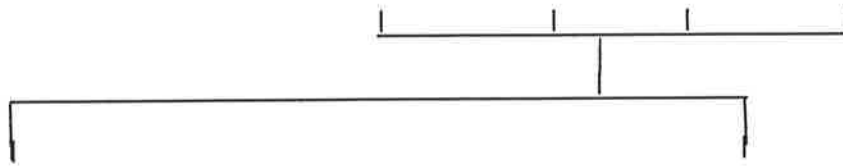
One aspect of this research was to investigate the possible interrelationship between schooling structures and processes and developmental level of the students (see questions 1,2 and 3 above). Hence it was decided to observe and interview the year 10 classes at the high schools as well as the year 8 target group. The groups were deemed comparable in that many of the year 10s had come from the same primary school as the target group, and had been taught by the same teachers. In this manner the design attempted to minimise the newcomer 'bottom of the heap' effect that was seen as a dominant feature of year 8/first year high school experience. Interviews and observations with these older students also provided a check on the researcher's developing account of the student habitus within each school. Although in this respect the design is not as tight as the classic longitudinal study in which the original group would have been re-visited two years later, this procedure did permit the investigation of the same event - e.g. sports day, assembly, choir night - from the perspective of year 8s and year 10s, thereby providing some indications of likely development.

Schematically the research design sample may be represented as follows:

YEAR 7

PRIMARY SCHOOL

XXX XXX XXX XXX



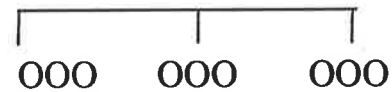
COED

ALL GIRLS HIGH

HIGH SCHOOL

SCHOOL YEAR 8

YEAR 8



YEAR 10

YEAR 10

XXX XXX

OOO OOO

Mixed classes XXX

All girls' classes OOO

4. Girls and mathematics.

To some degree this research was made possible by one of the questions it sought to address, namely the popular understanding that for large numbers of girls mathematics education constitutes a particular problem. The researcher was first introduced to the target schools by letter describing the project as having 'particular bearing on girls and

mathematics'. Coincidentally in the local press some publicity was devoted to the 'underachievement' of girls in mathematics at senior school and some fairly crude relationship was drawn between this outcome and children's typical preschool play preferences (Adelaide Advertiser, June 14, 1986).

All three principals responded favourably to the request for access, and whereas both secondary schools readily acknowledged a problem in their schools of girls dropping mathematics at the senior level, the primary principal believed that 'the problem' only existed at higher levels - in his school girls were not disadvantaged and he believed research would support his contention. Despite this difference in orientation, all three principals showed awareness and support for the proposal. The primary school staff were in agreement with their principal in that the girls were generally high achievers in mathematics tests and were in fact keen to demonstrate that there was no question of female underachievement in their classes. Both high school mathematics seniors voiced concern over the numbers of girls who dropped mathematics as soon as it became possible for them to do so. In other words expectations from the research literature were readily confirmed on initial contact with the schools.

After the initial discussion with the school principals concerning classroom processes, gender differences and mathematics, the request to monitor classroom interaction in areas other than mathematics followed naturally and was just as readily granted. It is of course only plausible to claim that one must investigate whether or not processes connected with the learning of mathematics are specific to that subject area by comparison with other learning experiences.

It is also relevant to note that classroom interaction studies are in their infancy in Australia. The Schools Commission Report (Girls and Tomorrow, 1984) cites Spender (1980, 1982) and Stanworth (1983) in relation to gender discrimination in classroom treatment and generalises from these British studies (and in Stanworth's case that of a sixth form college) to Australian classrooms. Other 'ethnographers' (Thomas, 1980; Moran, 1983) have based their analysis on interview rather than observation. Classroom observation was carried out by Evans (1979, 1982) and Ebbeck (1985) but these studies were of interactions in the preschool and junior primary, where the style of interaction is somewhat different from that which obtains higher up in the school. Leder (1987) carried out a carefully monitored investigation of student-teacher interaction but the value of this work rests on its demonstration of Australian primary classrooms revealing the male domination of classroom talk which had been found overseas, rather than in analysis of socio-cultural processes. While there exists a widespread assumption that boys in Australian schools receive a larger share of teacher attention than do girls, there is not an established basis in research to sustain this belief.

(iv) Style of investigation/ data collection.

Having chosen a particular site to commence the investigation which fulfilled the requirements of the focus questions, and having established access to the classes to be observed, the question of investigative style arises.

a. Ethnography.

The methodology chosen as that most appropriate for this investigation was that of ethnography. Because this label has been applied rather generously of late to a wide variety of research styles, there is a need to be specific about what was involved. The initial research technique used was that of participant observation, defined by Becker as 'that method in which the observer participates in the daily life of the people under study, either openly in the role of researcher, or covertly in some disguised role, observing things that

happen, listening to what is said, and questioning people over some length of time' (Becker and Geer, 1978, p.102). Although the schools involved were not 'total institutions' in the manner of Goffman's asylums (Goffman, 1961), and thus participating in their daily life involved being there for the same amount of time as the students, it can be said that insofar as the institutions effectively governed the lives of all who worked there they shared many of the aspects of total institutions. As Stanworth argues (quoted ch.1 p.3) schools represent for the vast majority of young people the first formalized encounter with the adult world. In choosing the ethnographic approach the researcher was following in a rich tradition of research into schools. The work of Smith (1979), Jackson (1966) and Spindler (1982) in the United States attest to the validity of participant observation as a method of data collection, while the British studies of Hargreaves (1967), Lacey (1970) and more recently those of Willis (1977), Corrigan (1979) Cohen (1977) and Ball (1981) reveal its power in unmasking ways in which class relations permeate schooling practice.

b. Classroom observation.

Being mindful of Rist's caveat about the errors generated by 'blitzkrieg ethnographies' (Rist, 1977), the researcher spent considerable time at each school (20 to 24 weeks) in classroom observation, sitting mostly at the back of the room recording interactions. As all three schools were established educational institutions, the classes were frequented regularly by a variety of visitors such as student teachers, curriculum advisors and, in the case of the primary school, parent helpers. Thus the students were not unused to the presence of another adult in the classroom. The researcher was initially introduced as a 'visitor', and later as 'N. who is writing a book about a school'.

Although the students were apparently relaxed about the presence of the researcher, there is always the problem of teacher self-consciousness or awareness of being under scrutiny (Blease, 1983). It was therefore stressed that the researcher was focussing on the students and their responses - once again the somewhat unfortunate popular understanding that

mathematics education is a girls' problem contributed to the legitimacy of this position. In addition while all the teachers involved were volunteers, an effort was made to observe teachers of proven experience and effectiveness by prior consultation with the principals. This strategy was thought to be particularly important in the primary school when the class (and hence the researcher) were with the same teacher for the most part of every day. In fact, as the research target group were in the senior years at the school (in South Australia year 7, age 11-12 years), they were taught by senior teachers with considerable teaching experience (average 11 years), who appeared most willing to engage in discussion about their students and their teaching practices. Rather than appearing nervous in the presence of an outsider these teachers seemed to enjoy the 'putting on a performance' aspect made possible by the presence of the researcher. Once again it was important to spend considerable time with each class (at least five weeks with each group) in an effort to cancel the novelty effect. Many of the teachers involved at all levels during the study volunteered remarks such as 'I'd forgotten you were still here' after the researcher had been in their classroom for some time, revealing either that they felt the need to claim that they were unperturbed by the researcher's presence or that this was genuinely the case. In addition, of the four homeroom groups in the primary school containing the senior students (two were organized vertically), two were taught by male teachers and two by female, reflecting the earlier noted typical gender distribution of males occurring more frequently in the senior years. (Of the other 4 males in the school staff of 28, one was the principal, one the deputy principal, one the sports teacher and only one a regular classroom teacher.) In the secondary schools the constant presence of the researcher was thought to be less intrusive, particularly as the teachers were on average present with the class for forty minute sessions, but once again the observation focussed on the classroom interaction of experienced teachers.

c. Interaction monitoring.

During the classroom observation the researcher was aware of critics of the ethnographic

method who accuse the ethnographer of partiality and who call for 'the development of unambiguous criteria for assigning the various events into categories' (Galton,1981). However observation systems such as FIAC (Flanders,1970) have been widely criticised as overly rigid and inappropriate in all but the most traditional of classrooms (Hamilton and Delamont,1974). In the present work there is undoubted partiality to notice processes which are connected with behaviour differences between boys and girls, and such a partiality gives some structure to the observations recorded and further selected for analysis. At the same time attention was given to the technique of triangulation (Denzin,1978) whereby a particular observation or set of conditions is checked against the perceptions of other participants or against the results of more formalized testing. Here there is what Cohen and Manion (1980) have termed within-method triangulation and between-method triangulation. When observer's records were compared in interview with the perceptions of students and teachers, the consensus of opinion thus obtained lends validity to the observations. This is an example of within method triangulation. (At the same time it should be noted that interesting data derived from the different sets of understandings brought to the same event by people differently located within the institutional power structure at both the formal and informal levels.) On the other hand correspondence between observation and aspects revealed by more formal testing produced between-method triangulation.

Time sampling (noted in Galton (1981) to derive from Olson (1929)) was also used to monitor student-teacher interaction. This was carried out over five minute periods during the discussion parts of the lessons. Times such as roll call, home work check or other rote treatments were deliberately avoided as, following Brophy (1979), such processes were structured to preclude the 'normal ebb and flow' of classroom life. Interactions were therefore monitored using a 2x2 table, identifying where initiated (i.e. by the teacher or by the student) and using male and female student categories thus:

	MALE	FEMALE
TEACHER INITIATED		
STUDENT INITIATED		

Rather than attempt to code the style of interaction (praise, blame, reprimand, on subject query, off subject comment) careful notes were taken wherein whole sequences were recorded. In this way the limitations of coding systems with the reliance on individual judgement were avoided, but there was still a quantitative base which would support the analysis of interactions.

As well as in classroom observation, the researcher became a familiar figure in the schoolyard and corridors, observing students' behaviour when they were within the institution and not under formal supervision. In addition the researcher attended assemblies, sports meetings, concerts, fetes, parent nights as well as engaging in the collection of all printed material - newsletters, special letters home, school magazine, daily bulletin, notice boards - which pertained to the daily experience of the students being observed. Recorded discussions with teachers, most of which took the form of unstructured interview, provided information about the ways in which teachers viewed their work, the particular school, staff and student relationships, particular students and questions relating to gender difference.

d. Additional testing and interviews.

Some pen and paper tests were also used which were designed in line with Garfinkel's notion of deliberately disrupting the taken-for-granted world of the students in order to

more clearly get at their understandings of it (Garfinkel,1967). The tests also provided what has been elsewhere described as 'participant constructs to structure the research' (Lecompte and Goertz,1982).

After each of the extended observation periods - lasting for a minimum of five weeks with each class - in the primary school, the researcher had each class participate in a written exercise in which the students were asked to provide names for characters in the 'book about a school' which the researcher was purportedly writing. After a variety of nameless 'typical' students and teachers, there were questions about particular subject areas and individual perceptions of subject relevance and career aspirations (see Appendix D). This work took about thirty minutes with each class. The results formed the basis of the small group interviews which constituted the next stage of the research. With teacher cooperation the researcher was able to withdraw small groups of three to five students, selected by the teacher from a forest of volunteer hands, to participate in tape recorded discussions. These discussions were not tightly structured, although the results from the written work provided leads to the focus questions about gender,e.g.

Nearly everyone gave me a boy's name for the one in my story who's always in trouble. Why do you think that happened?

Thus the students were led into a discussion of abstractions - centering on their understanding of gender limitations - which they entered readily and happily, and the non-productive potentially threatening approach of asking individuals to state their position was avoided. Because these discussions took place in small groups, attention was focussed on the group interaction, which was to provide the basis for later analysis. Particular attention was given to the notion of 'member validation', as in Garfinkel's concept of membership whereby

Members routinely furnish the seen but unnoticed features of interaction in recognizing what is 'obviously going on'. Competent membership is continuously displayed in recognising and making the world what everyone knows it to be.

(Cuff and Payne,1979,p.134)

The language used by the students in their 'explanation' of the world of school, together with their facial expressions, body language and especially their use of laughter were carefully noted in line with the researcher's intent to explicate the discursive practices used by the students revealing their positioning in the world of school.

In the primary school the group composition varied, some mixed, some all girls, some all boys. At the high school level the groups were all single sex, not by design (except in the all girls school), but rather by some unspoken understanding that emerged when teachers called for volunteers. Depending on who was first selected, opposite sex volunteers withdrew their candidature. The interviews involved all the members of the classes under observation and in this way it was designed to avoid dominant members' meanings determining the outcomes.

At the end of the observation period in the high schools each class participated in a writing exercise (Appendix 2) in which the students were asked about their perceptions and plans about their schooling and their self ranking within the mathematics class. The interviews with the high school students were structured around their answers to these questions.

The final part of the research design took the form of an attitude measure, previously generated and validated by Power and Cotterell (1979) with a similar aged group of Australian students. This measure uses three and seven point scales between bipolar coordinates to investigate the broad area of school satisfaction and attitudes to individual subjects and subject attributes. The results of this measure were statistically analysed with reference to gender differences in attitude and attitude change between the primary and secondary school years.

Schematically the research design may be represented as follows:



1. Intensive observation.
 - a. maths classes.
 - b. all classes.
 - c. beyond the classroom with the students.
 - d. beyond the classroom with the teachers.

2. Primary school only. 'Write a story' exercise.

High school only "General impressions of school and my place within it."

3. Small group interviews.

4. Attitude measure.

e. The method of constant comparison.

It can be seen from the design that a variety of comparisons are built in so that what Glaser and Strauss (1967) have termed the 'method of constant comparison' can be utilized. Firstly there is the basic comparison of girls' actions and understanding with those of boys running through the research. At the primary school comparison between classroom processes associated with different subject areas but with the same teacher is immediately possible. The use of specialist teachers in some subject areas, e.g. music, drama, craft, at the primary level provided another site for comparison. More generally comparison between groups at a similar year level with different teachers was allowed for. Once again the design which involved following the same group of students from primary to high school was a strong feature of comparison. (They did not move as a group however and thus the group composition changed.) Within the high schools comparison was immediately possible across different subject areas and different teachers. Contrasting

experience of the coeducational with the single sex high school, and of the implications of coeducational primary schooling for both types of secondary schooling became another focus. A somewhat weaker (in terms of current research involvement) but still important comparison was provided by the interviews with the year 10s for whom the high school experience dominates in terms of understanding how schools work. Although these students were not from the initial group, in many cases they had attended the same primary school, and so their initial encounter with schooling was not dissimilar from that of the target group. The use of comparison has great methodological importance for qualitative research in that it enhances the strength of the observational data, and can be used to provide a basis for interview material. However there is a danger in that comparison tends to promote the understanding of bipolar dimensions by imposing categories rather than letting them emerge, a situation which has plagued research on gender. In this study the researcher endeavoured to adhere to low inference approaches wherein differences between groups were not assumed. Even so, the students revealed a tendency to define themselves in opposition, e.g. "If the girls do that, then we(boys) do something else." The point will be expanded in later discussion.

While this approach seems to attempt to unite two incontrovertibly opposed research paradigms, namely that of the qualitative research which generates the 'thick description' typical of good ethnography, and that of the one shot measure of particular attitudes, it is noteworthy that just such a blending is increasingly called for by education researchers who have become increasingly aware of the limitations of both the large scale sample survey approach and the single in depth case study. On this Brophy (1979) writes:

I am arguing for a middle course between what I see as unprofitable extremes. One is the ethnographic study of the single case ... The other extreme is the large study that includes a great number and variety of classrooms but involves little or no systematic observation of classroom processes.
(Brophy, 1979, p.743)

The present study is directed towards claiming some of that middle ground. In a similar

vein, Galton (1981) hails 'the beginnings of a rapprochement' between different research methodologies, which he sees as an important development in classroom research.

(iv) Analytical framework.

Having discussed the particular methodologies used for the gathering of data, it is now appropriate to introduce another, and perhaps more important, methodological consideration, namely that of analysis. To a large degree the approach which informs the analysis of the data has implications for its collection. Such an overlap is not in dispute here. Reflexivity is commonly accepted as a continuing feature of qualitative research. Thus the issues discussed in this section did not arise after the completion of the data collection but rather were an ongoing concern throughout the process. The separation apparent in the sections of this chapter was adopted solely for clarity of organization and is not meant to imply the processes were discrete.

While a focus on 'lived experience' in order to describe the shaping and adoption of particular ideologies within the school would seem to constitute an appropriate starting place from which to examine the explanatory power of the macro theoretical structures discussed in the previous chapter, such an approach does not of itself describe particular ways of analysing data in order to more precisely define that 'lived experience'. To do this one must enter the somewhat contested area of the analytical tools of symbolic interactionism and phenomenology, both of which relate in varying degrees to systems of analysis described as ethnomethodology or again ethogeny. For current purposes it seems there is little to be gained by furthering the debate about the advantages and limitations of the various schools of approach. Rather it seems proper to note that while various protagonists have attempted to define themselves in opposition to one another, there are important commonalities (such as their united opposition to what they describe as 'positivist empiricism'), as well as considerable overlap between the approaches. The issue here is to use qualitative data in ways that permit association between this material and the

broader theoretical structures introduced earlier. While it has been suggested in the previous chapter that post-structuralist theory with its focus on discursive practices can be used to make that link, it seems appropriate at this point to look a little more closely at the methods of analysis more traditionally associated with interpreting ethnographies of schooling.

a. Interactionism.

The overall position of the current analysis can be described as interactionist in Woods' sense, in that it "concentrates on the small scale detail of interpersonal relationships, what people do, and how they react to each other, the patterning of behaviours, the ebb and flow of everyday life" (Woods, 1983,p.xi). At the same time the research has not been carried out according to the tenets of some symbolic interactionists who insist that the researcher be 'theory blind' in commencing the investigation (e.g. Erickson,1973). The present work also seeks to avoid the trap of imputing motives, seen by some as the theoretical black hole of symbolic interaction research. Rather than inferring motive from observed action and speech, the analysis focusses on the intersubjective meanings which are built up, both shaped by and shaping the process of interaction. Such a perspective is more closely aligned with phenomenologists such as Schutz, whose concern is with 'the knowledge and assumptions which must be possessed and acted on by people in order for the social world to exist (Schutz,1972). Their project (the phenomenologists) is to explicate this knowledge which is not given in consciousness but rather is taken for granted by all of us in our everyday lives'(Hammersley and Woods,1976,p.8). This field of analysis would seem particularly appropriate to the attempt to unpack much of the taken-for-granted world of school and to facilitate analysis of the underlying processes such as may pertain to gender. Perhaps equally useful, however, is the interactionist concept of negotiation. As described by Woods (1983) negotiations are often subtly implicit and recognized by sophisticated and abbreviated symbols. As such they represent the 'hidden mechanics that hold a community together'(Woods,1983,p.12). Woods goes on to describe the interactionist's concern as

that of discovering the informal rules that underwrite the negotiation, a focus that is similar to that of Schutz' question 'How is society possible?'. On the other hand, ethnomethodology, which focusses on the methods by which people interpret and display the social world as having the recognizable features that it appears obviously to have, would also appear to have some analytical merit in demonstrating and explaining the development of gender differences, as well as having some common ground with symbolic interactionism and phenomenology.

Having established some degree of overlap between these analytic approaches it is relevant to note that several writers comment on the importance of drawing theoretical insight from a variety of theoretical positions, which is exactly the point made by post-structuralist theorists. Hammersley notes the need to be eclectic in working towards an adequate theoretical framework within which to investigate schooling processes, given that any one approach was seen to be overly restrictive. Davies further writes of the mistaken assumption "that there is *a* symbolic interactionism or *an* ethnomethodology", and claims "there are many of each" (Davies,1982,p.180). Davies' own adoption of the analytical method ethogeny (Davies,1982, Harre and Secord,1972), while being in her view radical in that it takes account of the participants' definition of the situation and 'views human consciousness as a critical but neglected element in social science research'(Davies,1982,p.16) would seem to support the general interactionist perspective. Here too there is the focus on the construction of meanings within the group, on 'the way individuals struggle to present themselves coherently as worthwhile people and in the power of social contexts which facilitate or detract from each individual's attempt'(Davies,op.cit.p.16). In taking this position Davies seeks to incorporate the various interactionist modes of interpretive sociology. However by including the notion of social context Davies seeks to avoid the problem identified by some critics of interpretive sociology which is to suggest that the knowledge and awareness of participant constructs is the sum total of that which is worth knowing about the situation. To adopt such a perspective is to ignore the historical and structural bases of the particular understanding

and awareness in which thinking and communication take place. Sharp and Green had earlier identified the limitations of the interpretive paradigm thus:

We need to supplement our analyses of subjective meaning with some conception of the actual structure within which the individual is embedded. (Sharp and Green,1976,p.26)

To achieve this end Sharp and Green noted the need to distinguish between the meaning of a situation from the viewpoint of the actor and the meaning of the situation to the observer (and, one could add, that of other observers). This distinction was referred to earlier in the section on triangulation. An incident recorded during the coeducational high school section of the study is relevant here. The field notes read as follows:

July. Thursday lunchtime. 825(the class being observed) have been organized by the prefects to play baseball against 834. 825 have been referring to themselves as 'the best year 8' all morning and in the class directly before lunch there were many derogatory comments about the abilities of 834, emanating chiefly from Calvin and his mates.

I am sitting on a bench by the field watching the game when the male deputy principal who is in charge of this section of the school comes up. When I comment that the boys of both classes appear to have placed themselves as a group at the head of the batting line and to have monopolized key field positions and bases, he replies: "Aren't you just seeing what you're looking for? Isn't that the trouble with this kind of research?" (There follows some discussion about research methodology, where was the control group? etc) On the field the girl prefect organizer is insisting that the batting line be changed to incorporate more girls, but there is still a long tail of all girls. The field positions are left unchallenged. The match proceeds, each side/class barracking vociferously. End of lunchtime bell brings an abrupt end to the game although the boys seem to want to go on playing after all the girls have left the field.

Later interviews revealed that the girls had protested against their relegation as tail-enders,

but they had given in as the boys had claimed much greater expertise at the game. Thus in the interests of class loyalty and the shared understanding of the importance of winning the girls had backed down. In other words the perceived need to generate class cohesion (not a strong element in the formal structure of this school) was strong in these first years and worked to preclude more equitable participation by generating and adhering to a group loyalty that both boys and girls saw as more important than fairness on an individual or gender group basis.

Other observers may have recorded this incident as evidence of the girls' lack of physical skills, unwillingness to take risks or adherence to gender stereotype. Similarly the boys could have been seen as demonstrating their aggressive physicality, risk-taking and adherence to gender stereotype. Only through interviews with the participants, coupled with observations of the boys' resistance to the senior's efforts to gain a more equitable distribution of players, and the girls' acquiescence and acceptance of the definition of the situation as competitive, does one become able to sift through the layers of 'multiple realities' and appreciate the consensus of the participants. This consensus was achieved through some degree of negotiation, but it also depended on the historical and cultural understandings which the players brought to the situation. These understandings are not necessarily revealed by interpretive analysis, but are implicit in the outcomes.

In this instance it was important to know details of the way in which competitive sports were structured within the school curriculum and prior school experience, how this game operated within the popularity ladder of student preference for participant sports, and why class loyalty was a particularly powerful force for this group. This incident also serves as an example of the ways in which the discursive practices of particular collectives operate. For the girls in the observation the membership of a particular school group - in this case their classroom - was seen as more pressing than their need to challenge the gender bounded location of the boys as sports heroes, because of the competitive situation and atmosphere that had been generated in the context of the baseball game. Both discourses

were operating in the scene as described and the girls emerge as making choices - in this case choices that involved their accepting a lower group status on the sports field - not simply being 'pushed out'.

b. Limitations of the interpretive school.

As Sharp and Green argue, there are limitations to the explanations that can be derived from the interpretive or interactionist approach:

The phenomenological framework does not enable us to pose the question of why it is that certain stable institutionalized meanings emerge from practice rather than others, or the extent to which the channelling of interpreted meanings is socially structured and related to other significant aspects of the social structure.

(Sharp and Green, 1976, p.24)

In other words to explain fully the incident of the baseball game one would need to invoke structures of sport and leisure in the beyond school world as well as to examine physical provisions for sport at school and the history of that sport in the school, much of which would have been beyond the conscious knowledge of the players. Post-structuralist analysis proposes that the discourses surrounding particular events contain within them structural understandings and are themselves important sources of the transmission of such understandings to those who seek to place themselves as participants.

The emphasis in this thesis is on gender as a social construct. However this must not be taken to imply that gender only exists in people's minds. Although it has been demonstrated that conceptions of gender inform and delimit popular understandings of schooling practice to an extent that is largely unrecognized, there also exist gender-related structures in schools such as playing areas and equipment, cloakroom provisions, uniform specifications to name but a few. The current work will seek to identify the ways in which such provisions are recognized as having gender-based restrictions or privileges as legitimate parts of schooling practice.

In their critique of the phenomenological approach on the basis of its ahistorical reified concepts of human 'freedom' and 'creativity', Sharp and Green argue:

An adequate theoretical framework should aim to explain why in certain kinds of contexts there are limitations on men's(sic) freedom and creativity and why the constraints of the given are so powerful; thus rendering the view of society as continually in process, open to reconstruction and continual modification, as an ideological illusion.
(Sharp and Green,1976, p.27)

Elsewhere Karabel and Halsey (1977) note that emphasis on the person fails to take adequate account of the social constraint on human actors in everyday life. Noting that 'the question of whose definition (of the situation) will ultimately prevail is preeminently one of power', they write that teachers, by virtue of their powerful institutional positions, have a crucial advantage, and that there are limits to which the definition of the situation may be negotiated. The present work would retain the concept of power differential as a significant force in negotiation, but would seek to reveal how considerations of gender become enmeshed with power differentials. In this way other considerations such as subject matter, type of task, teaching style and student gender all interrelate, and are not necessarily subsumed under the teacher-taught distinction. The focus of this investigation has to do with the connection between gender and power, and attention will be focussed on whose 'definition of the situation' prevails in groups which comprise not only teacher and taught, but also males and females, older and younger students, students who are seen as able and others who are not, to name some of the more common classroom divisions.

(v) Summary.

The chief research methodology adopted in this work is that of ethnography, 'thick description' generated from participant observation within and outside classrooms, recorded interviews with teachers and students, scrutiny of all school-based literature, bulletins, handbooks, newsletters combined with questionnaire responses to be statistically

analysed. The qualitative data thus accumulated were analysed from a standpoint that is basically that of the interactionist, best set out in Woods (1983). The more recent developments in post-structuralist theory in terms of its application to educational research and analysis bring added power to the conclusions to be drawn. In addition insights from phenomenology, ethnomethodology and the Straussian concept of negotiation are used in keeping with the post-structuralist position which encourages the researcher to 'borrow' from a variety of approaches to a particular problem given that all such approaches are to be found in the discursive practices within which the focus topic is addressed. Central to the analysis therefore is the concept of people actively engaged as constructors of their own actions within the available discourses, and at the same time there is attention to the historical, cultural and psychological factors which influence human action and which are revealed in institutional structure and accepted practice. The position of the researcher is essentially akin to Schutz' stranger for whom nothing is taken for granted and thus commonsense understandings have to be raised to the conscious level and made explicit. While undoubtedly such a method is arduous in the oftentimes exotic sites chosen for anthropological research, it is probably also, albeit differently, arduous, and highly appropriate in an investigation of the exceedingly commonplace institution, the local school, precisely because it is so much a part of everyday taken-for-granted experience.

While ethnographic analyses of classrooms and schools have become increasingly popular in educational research, few have focussed on gender relations. Some of the more successful work already mentioned (Hargreaves,1967; Lacey,1970; Nash,1972; Willis,1977; Corrigan,1977; Anyon,1981) showed the schools perpetuating social divisions of the wider society along class lines. Using the school or the classroom as the unit of analysis tends to assume some sort of homogeneity therein. Teacher treatments are thus typically seen to vary according to school or class level or set. An analysis of gender has perhaps more to offer in that it can show how the taken-for-granted assumptions divide the classroom and inform teaching practices and student responses within one location.

Classroom studies which have attended to gender differences have provided a rich source of evidence of the embedded nature of gender-related understandings in the daily practice of schools. Such work has been less than successful, however, in relating the findings back to the theoretical domain. Some feminist researchers have been careful to set up the theoretical origins of the link between schooling practice and social inequality (e.g. Macdonald,1980a,1980b; Stanworth,1983; Clarricoates,1980) whereas others define all existing theory as man-made and therefore partial and inappropriate to a feminist analysis (Spender,1982). In Australia the writings of Taylor (1982) and Yates (1983,1988) and Davies (1987,1989) have begun to address the theoretical connection between schooling and gender-based social inequality, but to date there has not been a detailed empirical study of educational processes. It is here proposed that an ethnographic investigation of gender construction in schooling will contribute to an understanding of the school's role in the production and maintenance of gender-based social inequality, and also to an understanding of the contributions and limitations of qualitative research in education.

CHAPTER 4

Midstone Primary School.

The primary school : an account of life in the primary school from the points of view of the observer, the students and the teachers.

Argument. That typical primary school experience plays a crucial role in the shaping of children as gendered subjects. Dimensions along which this shaping is structured include

(a) the induction into aspects of institutional life as in the public/private distinction, evidenced in school-wide as contrasted to classroom-based area of influence;

(b) power differentials in access to attention: teacher/class, student/class and student/student;

(c) the learner as a class member and the learner as autonomous individual;

(d) the compartmentalization of knowledge which provides the basis for differentiated and hierarchised knowledges, each associated with different styles of learning and knowing.

The account of schooling experience at Midstone Primary School will begin with a detailed description of the school in terms of its physical setting. (Its name, and the names given to all teachers and students appearing in this work, are fictitious in order to preserve anonymity of the participants. At the same time the choice of the name, Midst-one, was deliberate in that it sought to invoke the concept of school as an accepted and central feature in the lives of all the individuals involved, as well as implying the innocuous taken-for-granted presence of the school and its functions in the wider community. All other names used in this work are restricted to nominal usage and are not decreed to have any symbolic value.) Following the description of the physical setting, the staff are described as, in broad terms, are the student population. Behaviours associated with teachers and students in their positional capacities within the school are then discussed.

Informal aspects of the school experience are introduced. There follows a description of playground practice and then of the four classrooms which contained all the students in their final year at the school. The next section deals with particular aspects within these classrooms which were seen to have gender implications for students in their behaviour or their understanding of how schools work. A section which deals with the teachers' perspectives on the question of gender is followed by a discussion of curricular knowledge with reference to gender division. Sport at Midstone school was seen to have great importance in the area of gender construction and a separate section is devoted to this topic. The results of the children's participation in writing a story about a school are discussed, and these form the basis of the interviews with the students which are dealt with in the section on pupil perspectives. The last section summarizes those features of the primary school experience which emerge as relevant to the children's developing understanding of gender and of the world of school, which forms the basis for following the investigation into the high school setting.

Ethnographic research is often seen as lacking the conclusive power of more measurement oriented research due to what are termed 'problems of reliability and validity' (Lecompte and Goertz,1982). The descriptions used in this chapter will contain careful attention to detail, in keeping with the injunction of Wolcott:

'Comparability requires that the ethnographer delineate the characteristics of the group studied or constructs generated so clearly that they can serve as a basis for comparison with other like or unlike groups.'

(Wolcott,1973)

Thus while the descriptions that follow necessarily take account of features of a particular place and people, it is contended that the behaviours and attitudes here typified have a larger dimension in that they are recognizably located within a general understanding of what teachers do and what being at school is all about. Of course such understandings are often

as not mediated by factors such as school size and year level of the students, as well as by considerations of the class, ethnic and gender composition of the school, and the historical specificity of the description. What follows then is a description of a school which, as it was chosen to embody some concept of 'ideal-type', is therefore fairly free of the 'problems' which have so exercised education researchers in recent years relating to the school's class location or ethnic composition. Consequently this study cannot claim to present practices relating to gender which are generalizably true for schools with significantly different structural compositions. However it is the attention to process by which gender emerges as a part of the structured schooling experience at this school that the work claims its broadest purchase.

A. Setting the scene.

Midstone Primary School is a long established government primary school which is situated in a solidly middle-class area. The surrounding neighbourhood is remarkable for its homogeneity, with a high number of local home owners having professional status, a high level of home ownership, low unemployment, the majority of the population is Australian born of English speaking parents and only a minimum amount of movement in and out of the area (Forster,1984). The physical setting of the school immediately illustrates the privatised nature of the educational enterprise : to a large degree the school is its own world, the classroom even more so. In Midstone's case the school is literally tucked away in the centre of a house-bounded suburban block. Little can be seen from the quiet suburban street, except for a fairly unimaginative facade set well back which proclaims itself to be Midstone Primary School. Except for the children's crossing sign passing drivers could well be unaware of the school's existence, unless they were there

around 8.30 in the morning or 3.30 in the afternoon when the numbers of bag-laden children emerging from the narrow entrance would indicate the school's presence. As one enters the schoolground the outlook changes. The play areas are inviting and spacious, a combination of grass and trees, oval and play equipment in a variety of areas around the school buildings. Behind the elderly facade there is the 'old building' with its high windows and peaked roof in the style of Australian schools of a past generation. It has been recently refurbished with paint and carpeting, heaters and coolers and proves rather more inviting inside than out. To the right there is the 'new building' (such typifications are common school parlance) which houses the Junior Primary School, the staff lounge, the Resource Centre, some withdrawal rooms and two primary classrooms. It is a modern brick and glass construction, and inside is warm, bright and busy. The atmosphere is lively and friendly. At the front of the old building an open office area abounds with examples of student art. At the initial interview the principal was in the office as the receptionist was at lunch. Directly above him was a student-produced collage entitled 'The Boss' liberally decorated with verbs and pictures indicative of boss-type action. Here the atmosphere is informal, relaxed and yet busy. The place hums.

In many respects Midstone is a typical school in a representative middle-class area. However there are some special features of this school which are worth noting:

(i) its district includes a number of private schools which comprise a fundamentalist Christian school, a Catholic school, a 'free' school (in the style of the latter day progressives), a Lutheran school as well as several established colleges. All of these are fee-paying and in varying degrees lay claim to status above that of the government schools in the Australian system (see for e.g. schools discussed in Connell et al.1982). There is a small but continual movement of children into and out of Midstone to and from these other

schools which gives the impression of a high degree of parental caring and exercising choice in their children's education. In fact the parents at Midstone are very active within the school.

(ii) the district has electoral significance, a 'swinging' seat which has recently changed hands.

(iii) at the end of the previous year the Junior Primary school, which had been located on a different campus several blocks away, merged with the Primary school and the school now caters for children in the 5-7 year age group in terms of space and play equipment. With declining enrolment there is no doubt the merger was warranted; however there is still a Junior Primary principal and the battle for recognition of separate spheres, while maintaining official incorporation, has been resolved amicably.

(iv) the current principal is in his first year at the school. He is working hard to establish and maintain solidarity with the staff, who have all been at the school for several years, while in no way relinquishing positional power.

(v) a computer firm recently made available to the South Australian Education Department a gift of 16 micro computers and a master console and Midstone school was selected as the appropriate venue. The donation produced a mixed reaction among the staff, some of whom appear to resent the intrusion into their lesson time and planning and suspect that the choice of Midstone was a deliberate political manoeuvre.

(vi) there is a composite class (children from years 5,6 and 7) which is known to the staff as the 'special class' for gifted children, even though the principal is keen to stress that

there is a wide range of abilities within this grouping. The class was founded at the instigation of a particular teacher who has recently enjoyed wide media publicity relating to her contention that gifted children may be educationally disadvantaged in normal settings.

(vii) the school has a well developed commitment to areas such as physical education, drama, music, swimming, pottery and first aid, and has specialist staff in these areas. It also has a new well equipped resource centre.

While it may be that all of the above make the day to day life at Midstone a rather unique experience for those involved, it is here contended that there are features of the school as institution which are shared by all schools albeit to greater and lesser degrees. To investigate the schooling experience of the teachers and students involved at a particular site necessitates the recognition of those features that make the site unique, at the same time as creating the possibilities for broader application. In so far as Midstone appears in this early description as having many of the features which are connected with privileged schools it provides an interesting and perhaps especially appropriate site to carry out research on gender. (see chapter 2, with reference to the work of Macdonald (1980), Hartley (1980) and Connell et al (1981)).

B. The school as organization: the staff.

Of the 28 professional staff, only 6 are men. They are the principal, the deputy principal, the physical education teacher (who incidentally has quite a following in the school) and three classroom teachers who take senior classes, i.e. years 6 and 7. All Junior Primary staff are female. All ancillary staff are female, except for the groundsman. Staffing at Midstone school reflects the typical gender divisions found in primary schools all over the

country, with men in the minority and yet much more likely to be in senior and principals' positions. (In 1982 males constituted 32% of the primary school teachers in South Australia, and yet 85% of primary school principals are male. Commonwealth Schools Commission Statistics, 1984.) The staff at Midstone are all teachers of considerable experience, with the most junior member having been teaching for seven years. Several of the older women teachers have been at Midstone for over ten years and are well known in the school and parent community. The male teachers as a group appear somewhat younger than the female teachers and are mostly more recent arrivals to Midstone school. Newest of all is the principal who was in his first year at Midstone at the time of the observations.

The staffroom atmosphere is relaxed and friendly; at the same time there are informal groups who usually sit together, the Junior Primary staff, the visiting students, the male teachers. The principal makes use of recess to make brief announcements, sometimes pep talks accompany a shift in school policy as when he encourages the closer contact between teachers and parents. The deputy principal and the sports teacher also contribute at these times more often than other staff members. The school routine includes two whole school assemblies per week, others are added when special occasions warrant. The general assembly is managed by the principal and takes place in the central paved courtyard. The house assembly which, unlike the general assembly the teachers do not regularly attend, takes place in the gymnasium and is managed by the deputy principal with the sports master assisting. The children at Midstone are therefore used to seeing men in control of school organization, with the ritual of school assembly both introducing and reinforcing the notion of male governorship. In the taped interviews the children frequently alluded to the task of running assembly as being the job of the principal and made effective performance in this task the criterion for being a principal.

The style of the principal in addressing the school or the staff merits a comment. He is at once open, friendly and firm - he frequently uses a team analogy, a team of which he is to some degree captain, coach and selector as in :

"We're all pulling together to make Midstone school better than ever."

"I want you all to get involved in this new computer installation so that our school is seen as really up to date."

Instances of gender stereotype interacting with perceptions of authority in the school.

1. At the weekly assembly the principal speaks first, then the deputy principal, followed by the physical education teacher and then a boy football captain. After this a female teacher, the librarian, was called on to make an announcement about library books. The children had been becoming restive for some time. As the female teacher began to speak the principal quickly broke in to quiet them and in so doing publicly asserted his positional power in the school. However insofar as he had not done this in the case of the earlier speakers (and it had been noisy when the footballer spoke) he also contributed unwittingly to the stereotype of male dominance. Later in interviews the children reported that one reason for having males as school principals was that "You have to have a loud voice to run a school".

2. Another assembly. The weekly citizenship award was given to the year 7 boys for helping to carry the sets for the school production. The year 7 girls later complained that they were never asked to do such jobs, even though they were obviously able to do so, many of them being bigger than their male peers.

3. When a teacher was leaving the school rather unexpectedly, the principal insisted on

breaking the news to her class, against her expressed wish that she do so herself, thereby demonstrating his sense of responsibility to the school community. The manner in which this teacher set about undermining this display of positional power by calling on her students' strongly developed sense of personal allegiance to her will be detailed in a later section.

4. The principal and the deputy principal both commented favourably when a junior member of staff, a male teacher, became the self-appointed monitor of the computer room, keeping a record book of whose turn it was to use the machines. Though new to computers himself he was soon able to assist other teachers in familiarizing them with basic programs. Both principal and deputy applauded this display of leadership potential in ways reminiscent of the 'mentoring' which is seen in Sampson's research to be more typical of the experience of male teachers than of females (Sampson, 1986). For the children it meant seeing another male in a position of authority throughout the school, and this time in association with computers. The 'visiting experts' whom the children have also met in connection with the use of computers and calculators in the school have all been male.

Informal aspects of school ritual.

In general the atmosphere at Midstone school would be described as informal. There is no set uniform, although one is currently being proposed. Some children, mainly boys, wear school sweatshirts. For assemblies the children seat themselves in loose friendship groups by class, although they are not restricted to a particular space for each class. Assemblies are held in the open courtyard where there is attractive paving and a semi-sculpted rostrum - the children sit on the ground or around the walled edges. Friendship groups for seating at assemblies are almost invariably sex specific, and while they wait children interact with

same sex peers. Not all teachers come to assemblies, some seem to feel a responsibility to accompany their classes, many do not.

For the house assembly, involving a weekly award of a shield for the highest total of house points, the children are once again not strongly directed and sit in self chosen sex specific groups. The deputy principal is in charge and few teachers are present. Pairs of children, usually a boy and a girl, from each class go forward with house points and there is much inculcation of team spirit for the respective houses.

In terms of organized sports teams the footballers, all male, have clear prominence as revealed by time devoted to them in assemblies and space in newsletters. Numbers of scheduled practices, matches , fundraisers and parties reveal an active parent involvement.

Chess is another extra-curricular area which occupies boys only. In reporting a win for the school team in a newsletter the principal underlined this fact with the comment "Well done boys!" Apparently the school used to have a girl pupil who was very good at chess, but the teachers explained this in terms of a European background, and now *"It's the boys' parents who have taken over arranging chess, so naturally only the boys are involved"*.

It appears that extra curricular activities were seen by the teachers as requiring parent involvement of time and energy and consequently the teachers seemed to accept that such activities reflected interests attitudes and inequalities of the wider world.

C. Playground Practice.

The playground at Midstone school, according to the Parents' Information Handbook,

includes:

- 10 acre site scattered with enormous red river gums;
- sweat track;
- massed plantings of native shrubs;
- adventure play area;
- full sized oval;
- basketball and netball courts.

Once one is inside the school grounds the impression is one of spaciousness and separateness in that there is a paved courtyard, the oval with climbing equipment to one side, and beyond the school building to the other side there are landscaped grassed areas as well as an asphalt expanse. The research was carried out over a particularly dry season and the grounds were in full use every day. The principal said during an interview that the prime concern was to keep the children out of the sun rather than coping with the dreaded 'wet lunchtimes'.

On any day during the free play before school, at recess and lunchtime the observer noted different play areas and behaviour patterns associated with different stages of development and different gender. At the first interview the principal had declared his preference for an 'open' school with no restricted areas. However in response to pressure from the Junior Primary staff a playground area had been assigned for their use - not without incurring some resistance from the older children.

The most striking aspect of playground usage concerned the boys' virtual monopoly of the oval, usually oriented around a game of football. Not all the boys played on the oval every day, but all the children playing on the oval were boys. They tended to operate in large fluid groups and it seemed that newcomers were welcome to join in (as long as they were boys that is). On just two occasions during the observations a group of four year seven girls attempted to join in the football game on the oval and the boys delighted in repelling the challenge. Elsewhere in the playground girls were normally seen in small groups

chatting or, as was very much the fashion at the time of the observation, playing a version of hopscotch with a long loop of elastic, known as 'elastics'. The girls' groups of usually between four to six members were much more stable than the roaming pack of boys and the same groups of girls were seen day after day to occupy the same places in the schoolyard.

In the junior primary section there was much less rigidity of group boundaries and the boys and girls were frequently seen playing together in the sand or on the climbing equipment. It would seem that the learning of gender appropriate playground groupings developed through the primary school years. The school made no pronouncements about girls' areas or boys' areas - in keeping with the principal's policy of openness - but unofficially the oval was regarded and maintained as the boys' province, with the few girls in groups who chose to play on that side of the school relegated to the spectator sidelines or else the climbing frames by the edges.

The implication for the construction of gender-related sets of interpersonal relationships which emerges from playground practice is important. The boys, moving over a large area in large fluid groups, become known across age and class boundaries in ways that girls do not. Their interpersonal relationships may not be as intense as those of the girls - not much communication except as serves the game - but they operate from a broader base of acquaintance. Thus the boys are produced as school-wide personalities, they were more likely than girls in the later interviews to refer to friends from different classes. There was also a repeated tendency for boys to refer to 'most of us' or 'all the kids' or 'everybody' and mean *only boys*. Playground practice can be seen to produce boys as public figures in ways that do not typically happen for girls. This situation is reminiscent of Bourdieu's observations of the child rearing practices of the Kabyle tribespeople in which the males are raised centrifugally and oriented to the world at large, whereas for the females the

orientation is centripetal or inwardly turned on issues of hearth and home. (Bourdieu, 1977). There was also a degree of self-containment about the children's playground behaviour which became increasingly evident as they progressed through the school. Whereas in the junior primary section the presence of a teacher would usually attract a small crowd of hangers-on, the only time the duty teacher's attention was sought by the older children was at times of crisis such as physical injury. The cost of this school-wise maturity would appear to lie with the adoption of gender codes of behaviour by boys and girls alike which, as noted above, carry certain restrictions as to what may be done by the incumbents.

D. In the classrooms.

The four classrooms observed represented very different teaching styles and the differences were immediately evident in terms of the physical organization of the classrooms.

AH's room was filled with displays of student writing and illustration, mobiles of rockets and the solar system, an old television set with the back removed so its insides could be seen, various mice cages (several of which escaped during the observations causing general class diversion). The seats and tables were grouped in fives and sixes, creating five work islands in a somewhat chaotic but definitely busy classroom. The teacher's table was to one side and not a particularly focal point - nor was it used much by AH in her teaching. There was also a large open area nearest the blackboard and much of the class organization, roll call, money collection etc. was carried out with the children seated on the floor in this area, 'on the mat' they called it.

MB's classroom was much less cluttered - if anything this room was characterised by an

almost total absence of displays, which MB regarded as more appropriate for dealing with younger children. In this room the chairs and tables were arranged close together in four parallel rows of eight or nine. Children sat with same sex friends in general, but were moved according to measured achievement for different subjects, wherein those identified as 'having difficulty' were in the lines closest to the teacher's table which was centre front. Because of the long rows movement around the classroom was rather restricted and groups appeared more set in this room than in some of the others.

HD's classroom was even more traditionally organized with the tables and chairs paired and grouped one behind the other. The overall impression was exactly like the twin desks organized in lines running the length of the classroom. The teacher's table was at the front to one side and there were several displays listing class members as having completed various assignments, read a certain number of books, or rostered for particular tasks. In all such posters there were the subheadings 'Boys' and 'Girls' and the children were identified accordingly.

The fourth classroom observed was not in the same part of the school as the three already described which were all in the 'old building', the oldest part of the school which housed most of the senior pupils. This class, taught by CL, was in the newer section, sandwiched between the resource centre and the staff lounge. It was special in others ways too in that this was the class in which children who had been identified as 'gifted and talented' were members (see p.109). In this room there were a variety of educational displays and games available for borrowing. On parent/teacher night the blackboard carried the message

"In the past week we have been looking at the abstract ideas of philosophy and mathematics".

The seating in this room was arranged in table groupings with five or six pupils at each table. Tables were a feature of the teacher's classroom management in that children were

moved from a particular table if they were misbehaving, or in order to stimulate competition the teacher would say "First table ready can lead the way...".

(a) Teacher strategies.

Midstone is a relatively small school (527 pupils at this time) with a stable teacher population and most of the staff are known to all the children, especially by the senior years. However there is an insider/outsider dimension to this knowledge and the children within a particular class saw their teacher differently, and generally more positively, than those from other classes. Teachers too expected a different sort of allegiance from children who are or have been in their classes, a closer bond. AH said that she hated 'losing' children at the end of the year and would ask where possible to retain 'her kids' (possible as she had a vertical group). MB noted rather bitterly that four of her last year's class had been so influenced by their new teacher that *"they won't speak to me any more and that really hurts"*. The teachers themselves to varying degrees engaged in strategies designed to promote a strong group bond. These primary teachers tended to feel a strong sense of responsibility to their class as a group, which was often explicitly revealed to the children, e.g.

AH, speaking of a school-wide offer of a special excursion for 8 children: *"I'll put 8 of your names up and we won't tell anyone else ..."*, and later, after discussion with the principal this teacher lamented in interview *"He made the offer known to the whole school and I'm sure noone else is interested and now my 8 won't get to go!"*

Another teacher saw the children's successes as very much her own production e.g. *"I always get two or three bursaries."*

In the fortnightly newsletter there was a section devoted to class activities and classes were usually identified by the name of a particular teacher, thus making public the connection

between the teacher and the group. Some teachers later told the researcher that this practice created pressures to enter into activities not of their own choosing, e.g. to go on a camp with children, and sometimes parents arguing that so-and-so's class did it - why not us? One teacher who had engaged in a good deal of class bonding, to the extent of referring to herself as ...y and the class asy's class to the class members, was suddenly leaving the school. In announcing this to the group in which emotions were running high and several girls were in tears, she sought to enable the group bond to survive without her presence by saying

"You are and always will be a very special group ... because each one of you is special ... yes I'm special too, but remember this is a special class because it's got all of you special people in it."

The women teachers observed were seen to indulge in a different style of group bonding strategies than the men, who were more ready to call on a school-wide allegiance. Male teachers invoked class spirit by involving the group in a public display beyond the classroom, rather than interpersonal strategies within it. To this end one male teacher successfully taught a folk dancing routine which his class performed for school-wide audiences at the School Fair. The other male teacher sent children to the staff lounge with bread they had made for a cooking project, a collage picture went to the principal's office and all the staff were invited to view his class's video production during one morning tea. There are interesting parallels here between this difference in teaching style and the differences previously noted in the section on playground practice, with the boys emerging as public figures within the school while the girls are developing close friendship bonds with small groups.

One teacher (AH) explained her deliberate use of such strategies as having the children gather around her on the mat for the daily business and chat before retreating to their desks

and 'work' in terms of her training for the junior primary area where the basic task for the teacher is, she claimed, to get the children to accept the notion of being part of a group. Conversations with the children revealed a warm response to such teaching techniques at the personal level, which they interpreted as showing that their teacher cared about them. There was no indication that either boys or girls resented such an approach as overly nurturant - although AH deliberately invoked such a notion at times, as in:

"You are too noisy this morning. I'm going to have you do something that's really baby. Put your finger on your lips ... there ... that's really baby and I don't like making you do it, but it's the only way to stop the noise!"

In general the group bonding enhanced teacher control over the class without incurring resentment.

To some degree the discussion of class bonding highlights a tension between the professional autonomy of the classroom teacher and the position of the teacher as a worker in the whole school institution, a tension which has been seen to give rise to gender differences in teacher behaviour and related pupil experiences. This tension is further exemplified in an examination of the use of house points. As is common practice in South Australian schools there were four houses known by name and colour, and members from each class were represented fairly evenly with boys and girls in each house. Houses originated in connection with sports day, however at Midstone the notion of houses had developed beyond the association with sporting prowess to include all aspects of school life. The use of house points and the house system provided to varying degrees a vehicle for child-initiated contestation of the teacher's authority. All classes were asked to tally house points won or lost for classroom behaviour or performance, and class representatives would announce these scores at the weekly house assembly. It is perhaps significant that teachers did not routinely attend the house assembly - in fact some classes were repeatedly late which served to emphasize some downplaying of interest on the part of

the teacher. Schlechty (1976) noting problems of the assumed 'structural congruence' of the classroom and the school, writes:

"Teachers are vaguely aware that the school is somewhere out there, but basically they perceive it as a threat to the autonomy of the classroom and an imposition on their freedom of action". (Schlechty,1976,p.188)

In AH's class children sometimes asked for house points to reward particular achievement, although the teacher clearly resented the divisiveness and competition created by this intrusion of the school world beyond the classroom. She did sometimes use the system to effect discipline - by deducting points from talkers during a work assignment, however, and during the observation the question of house points provided an interesting example of confrontation between teacher and pupils. Assignments were being returned and several children had achieved full marks, next a boy who had 9/10 was told "*Well done! You can have 3 house points for that!*" At this stage those who had full marks protested that they had not been thus rewarded, however the teacher was adamant: "*No. I told he could have house points for 9 or 10 and he's done it so that's that.*" The protesters gave up and the lesson proceeded with the teacher having publicly asserted her control over the reward system.

In a different class HD, a male teacher, used the house points system continually:

"Everyone not sitting down will lose 20."

"The best work will have 50 house points."

"There are some boys talking. Toby lose 5, Ben lose 5 ..."

He justified this liberal use of house points in terms of providing addition practice for the children at the end of each session. However at times the numbers were so high the class would call out "Let Mr. D. do it!" as the numbers were seen to be beyond the competence of the classmates. In this class children exerted much more influence over outcomes via the

house point system than when such rewards were used less extensively. The main point here is that the competitiveness and divisiveness occasioned by the house point system interacts with the children's development of gender specific attitudes. As with other areas of officially sanctioned competition, from sports games, maths quizzes, chess, maths competitions etc. boys were more vocal, more obviously motivated to engage in public performance for individual reward, contested more fiercely and in this case won or lost more, whereas girls gave in more graciously, competed less vociferously and generally became spectators rather than contestants.

The gender distinction in competitive orientation with its inherent individual-group tension was particularly evident in CL's class, a male teacher new to the school during the observation period, who seemed unaware of the house points system (the class had previously had a female teacher who refused to use it). The students were seated around tables in groups of 5 or 6 and CL frequently used competition between tables to establish control and order, e.g.:

"Right. First table neatly packed away can have five early minutes..."

or competition for its own sake as in:

"I'll count to 5 and then we'll have first table ready ..."

There was one all boys table, one all girls and the other three were mixed. On such occasions the all boys table strove furiously to win the reward, although at other times this group was distinguishable as the most noisy and disorderly.

(b) Talking in the classroom.

Before the arrival of the teacher in the classroom the children interacted in same sex groups,

much as they were observed to do in the playground with the girls chatting or comparing projects and the boys moving about much more, often engaged in loud boisterous behaviour. When the teacher entered and, in getting the class ready for the day's work provided a structure or order to the events, there was more boy-girl interaction, which tended to be of a cooperative or work oriented nature. A voluntary seating pattern emerged on many occasions both within classrooms when the children were invited to come out and sit around the teacher for some particular explanation and also when they attended assemblies. On these occasions the girls formed two groups, one of which was up front very close to the teacher, and the other at the back, whereas the boys took up a position to the side and back and usually contributed more in noise and movement than either of the girls' groups. This seating pattern was even more pronounced when classes were withdrawn to special classrooms for subjects such as drama or music when the girls routinely formed a group right in front of the teacher and the boys ranged around the back and sides. The girls sat more closely together, which meant that the boys took up much more physical space, even though many of them were considerably smaller than the girls.

This picture is somewhat in contrast with that gained from Dunkin and Biddle's characterization of the 'action zone' (i.e. site of most teacher-pupil interactions) of the classroom as straight down the middle with its effect declining with distance from the teacher (Dunkin and Biddle, 1974). Perhaps the Dunkin and Biddle finding holds for teacher prescribed seating patterns - in several of the normal classrooms observed boys occupied centre front positions. However the variation in seating arrangements such as round table clusters, disallowed the prescriptiveness of the Dunkin and Biddle 'action zone'. Meanwhile the consistency with which the girls grouped themselves centre front when there were no seating allocations - or even chairs - across teachers, groups and subject areas, is suggestive of an effort to secure teacher attention and may explain why

some of the boys saw such areas as drama and music as girls' subjects.

In all the classes observed girls were commended for their good behaviour and their teachers frequently held up girls' behaviour as exemplary, as in:

"There's Catherine sitting up all ready!"

"I see Jane's reading a book ...that's good ...that's a quiet activity."

Another teacher, busy explaining the work to the slower ones, said to a boy who wanted his 'all done' achievement recognized:

"Look what Anna does when she's finished! She makes up her own problems and gets on with it... I really like that!"

Boys, on the other hand, were singled out either for bad behaviour:

"Adam, I see you jumping around again!"

or else for achievement:

"A very good speech Neil ... well done!"

While it was true that girls were also commended for good work there was no instance of a boy being held up as an example of good behaviour. The situation is similar to that described by Dweck in American classrooms where boys were frequently praised for achievement and criticised for behaviour while girls were frequently praised for behaviour and criticised for low achievement (Dweck et al, 1978).

Following Spender's claims that boys take up much more teacher time than girls (Spender 1980) one research strategy consisted of monitoring the number of interactions between teacher and individual pupils. These interactions were noted in terms of whether initiated by the teacher or by the pupil and whether the pupil involved was male or female.

Monitoring took place over ten minute periods during the observations, using at least six such sessions with each class. Care was taken not to include routine round the class interactions in the monitoring - so roll call or routine homework checks were avoided. The results of this monitoring are set out in table 4.1.

Taken overall there was a clear tendency for teachers to interact far more frequently with boys than with girls in keeping with Spender's claims, and in the more recent Australian study by Leder (Leder,1987). However, and importantly for this project, the difference in interactions was in large part produced by the fact that the boys initiated interactions many more times than did the girls. Girls tended to ask one another for clarification of directions, task etc. whereas boys asked the teacher. Thus a teacher who rigorously pursued a policy of asking boys and girls questions alternately and similarly issuing comments, praise and criticism, is still in responding to student initiated questions or comments interacting more with the boys than the girls.

TABLE 4. 1 : Results of Interaction Monitoring.

		Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl		
Class 1. (AH)	Pupil Initiated	18	2	10	7	8	6	12	7		
	Teacher Initiated	8	4	5	2	3	4	5	3		
Class 2. (MB)	Pupil Initiated	4	3	5	2	10	6	4	6		
	Teacher Initiated	5	4	7	8	5	3	3	4		
Class 3. (HD)	Pupil Initiated	6	4	10	6	4	2	4	6		
	Teacher Initiated	7	3	5	6	3	5	6	5		
Class 4. (CL)	Pupil Initiated	7	2	7	1	14	9	10	5		
	Teacher Initiated	5	2	4	2	1	3	3	4		
<u>TOTALS</u>											
		Class 1		Class 2		Class 3		Class 4		All classes	
		Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl	Boy	Girl
Pupil Initiated		48	22	23	17	24	18	38	17	133	74
Teacher Initiated		21	13	20	19	21	19	13	11	75	62

Germane to this point was the observation that the difference between boys and girls interactions with the teacher varied with the degree to which the classroom environment emerged as progressive. In the more traditional atmosphere where procedures are strictly enforced the number of pupil initiated interactions is considerably less and there is consequently less difference between girls and boys engaging in this behaviour. Girls appeared to be more comfortable with the procedure of raising a hand, or coming to the teacher and speaking one to one rather than in the situation where calling out in a loud attention-getting public manner was the way to gain teacher attention. Of a similar situation American sociologist Derber writes:

"Men and women learn to pursue attention differently and expect and accept it in different amounts. In all patriarchal societies, women are typically assigned the attention-giving roles and men the attention-getting ones. Accordingly attention-giving becomes defined as a 'feminine' skill and responsibility, with men gaining attention as a privilege of their gender."
(Derber,1979, p.43-44)

Different frequencies of pupil initiated interactions were observed in connection with differences in the four classroom environments under scrutiny. MB's and HD's classrooms emerged as more traditional than the others. In HD's room children were lined up, listed and seated in gender-specific groups - as well as being continually referred to as "Girls" and "Boys". Although MB always referred to her students by name (and insisted that she saw them all as individuals, rather than as girls and boys) she too adopted a traditional pedagogic style in which there were clearly defined rules and procedures which governed where one sat and who was allowed to speak. In both these classrooms there was only a slight difference in favour of the boys in terms of number of pupil-teacher interactions and there was much less difference between the number of pupil initiated interactions and the number of teacher initiated interactions than in the more progressive environments of AH's and CL's classrooms. Other teachers varied their teaching styles in

terms of different methodologies being deemed to be appropriate to the subject. Thus a teacher might engage in informal classroom behaviour for a story session and then revert to a more traditional approach for a different task, and different interaction styles would accompany the shift. The object of this research in identifying aspects of schooling practice which give rise to gender difference should not be taken to imply there is a need to return to the more distant forms of pedagogy. Rather this instances yet another example of the way in which current pedagogical practice with its emphasis on "the individual" may incorporate processes which produce gendered individuals or in other words may constitute gender in the learners.

(c) Teachers and classrooms

a. In AH's classroom the atmosphere is bright, busy and fairly chaotic. An old TV with the back off is the first thing you notice on entering. The guinea pig's cage is balanced somewhat precariously next to it, and every available space is filled with not particularly recent looking posters, letters, pictures of the class, news clippings, diagrams, geometrical puzzles and masses of other school-related paraphernalia. From the ceiling several differently designed rockets are hanging and from the display it is evident that rocketry is a particular focus of this group. The teacher is a warm vital personality who dresses casually - usually in pants and a shirt - who spends much time and energy developing a group bond within the class. To this end there are several group enterprises e.g. the TV coverage of their rockets, letter writing from each member to the US space station, and to the school story teller. She describes herself as very committed to a non-sexist approach to education and clearly transmits the image of a busy, happy autonomous woman with a wide range of interests. She tells the class of her daughter's school experiences and is aware of the family background of class members.

While both boys and girls have produced excellent work in projects on space and rocketry,

the observer is immediately aware of a different orientation to the task. The girls take great care with presentation, writing and drawing as they would do, one senses, regardless of the topic. The boys, on the other hand, are much more driven to find out more about their chosen topic and cluster around the teacher discussing the origin of planetary names, length of orbit, etc. The teacher is aware of and concerned about the lower level of interest shown by the girls (although this is not evident from the finished work) and says that she "hopes it will go away". The topic, rocketry, was deliberately chosen by AH to promote an interest in technology and the hope is that the girls will pick up some interest "despite themselves". The immediate educational outcome would appear to be that the boys are being rewarded for their active involvement in the topic while the girls learn to get by without making a fuss, albeit learning a little on the side, especially about writing letters and being interviewed for television and newspaper reports. In general it seems that the degree of latitude and self determination tolerated in this class highlights the qualitative gender differences in attention seeking style mentioned in the general section above.

b. In MB's classroom the atmosphere is much more traditional. The tables are arranged in long lines and there are no displays, flowers or hanging objects. This is a teacher who has been in the school for many years, proud of her reputation as a good teacher, a believer in standards of behaviour for teachers as well as for students. Early in the year she makes a point of visiting each of her pupils at home. She says repeatedly that she values them all as individuals, and thus the more she knows about each individual in terms of family and home background the better. MB stresses her belief that she treats boys and girls even handedly and yet she has noticed certain personality differences. For example, in the recent national maths competition several of the boys from her class, and one girl, won awards. Entrance was voluntary and MB feels the results do not reflect sex differences in ability but rather "Several of the girls are just as bright, but they wouldn't put themselves forward to go in for it.". MB uses test results to support her contention of the girls' ability and indeed as a group the girls emerge as more able in both mathematics and reading than the boys.

There were several interesting gender differences in interaction style that showed up in the observation records of this classroom. Firstly it seemed that MB's knowledge of the children and her own understanding of a gender divided world caused her to vary questions in terms of her knowledge of the gender and background of the pupil. For example, in a maths lesson on ratio, the following exchange was recorded:

MB (to a girl): *"Did you go to Mary's party? No? Well who did?"*

Several girls raise their hands.

MB(to another girl) *"Was there a cake? What sort?"*

MB(to another girl)*"How many guests were there?"*

Then, to a boy:

MB :*"Into what ratio was the cake divided?"*

This sequence in which girls were asked scene-setting questions and boys were asked procedural questions involving number operations was repeated several times during the observations, the girls thereby being produced as social beings and the boys as instrumental agents in terms of the specific area of knowledge being addressed.

Gender differences in content items were clearly observable in language classes also. Firstly in the types of materials selected for reading, where the boys chose Asterix, science fiction, adventure stories or non-fiction resource materials, and the girls went for teenage romance, magazines of the 'Oh, Boy!' and 'Seventeen' type. This is of course quite typical of commonly found gender differences in reading material. What was noteworthy in this instance was that the teacher seemed quite unaware of the generalizable nature of the differences and choices were explained in terms of individuals. For example, one girl's choice of a teeny-bopper magazine was explained in terms of a very strict fundamentalist parents who disapproved of such things at home but did not mind her reading them in a

school context. In another case a boy had a book on travel "*because he was doing a project on a related topic*" and another boy's choice of *Marine Life in the River Murray* was "*because that's where his family holidayed last Christmas*". It seemed as though MB's knowledge of the individual backgrounds of her pupils, coupled with her repeated commitment to seeing them as individuals, precluded to some degree the possibility of seeing gender differences.

Similarly a selection of their writing books revealed that stories - and in this case it was a book writing project - were written on topics revealing fairly predictable gender differences, and once again the teacher seemed unaware of this difference, but rather more preoccupied by features of the individual authors, e.g.

- of a boy's story liberally decorated with cartoon style drawings of gangsters - a cops and robbers adventure: "*He has a real artistic talent - wouldn't write a thing when he first came into my class, but now look at this!*"
- of a girl's story, beautifully written on the topic of *The Wedding*: "*She always writes well ... the father's a journalist ... a bit self important though ...*"

Another incident which is indicative of gender related differences being reproduced in this classroom occurred during a maths quiz. MB is keen on maths and uses a variety of techniques to improve number skills. On this occasion the routine involved mental quiz questions going around the class. First round those who gave the wrong answer had to stand, after this they reversed and those who were still 'in' were left standing and if they made a mistake they had to sit down. It was at once evident that this type of open competition appealed more to the boys, who had cheered loudly when the quiz was announced. When a girl got 'out' she sat down without a fuss but several boys were not inclined to give in gracefully: "*That's what I said!*" or "*I didn't hear the question!*". In

these cases the teacher was forced to back her judgment which she did most firmly. Once again the point is not simply another demonstration of the higher levels of competitive/aggressive behaviour found in male children, but rather ways in which the school environment gives rise to the further practice and refinement and acceptance of such differences in ways which have implications for the acquisition of knowledge and skills. The boys in this room were more prone to contest the teacher's ruling, more risk-taking (an attribute connected with success in later academic areas, notably mathematics), and the girls retreated from engagement in the public arena as quickly as possible.

c. HD's classroom is much more traditionally arranged with the tables being paired together to approximate the effect of twin desks. Children are seated in same sex pairs and although the rows are not all boys or all girls, the occupants of the centre front are all boys and the girls predominate on the sides. (HD says in a later interview the boys had been placed up the front so he could keep an eye on them.) Gender is frequently used as a means of obtaining control. Children are listed in the roll book under Girls and Boys, they line up in separate lines without having to be told and a large poster on the wall lists class members in two columns Girls and Boys under the heading I love Reading. HD continually refers to class members as girls or boys, both as a disciplinary device and a means of encouraging participation, e.g.

"I see some boys talking!"

"What do the girls have to contribute here?"

Because of the teacher's frequent use of gender categories the observer took much longer to learn the children's names in this room. The teacher's style was generally less personal and the class did not display the same degree of internal cohesion of the other classes. As noted earlier, the external control mechanism, the use of house points was frequently used, e.g.

"Whoever starts first will win 5 house points ..."

"Howard .. will lose 5 points.."

Teaching methodology is more traditional here too. The common practice is a chalk and talk session with the teacher out front at the blackboard and then the children are set to work while he circulates and responds to individual questions. To gain teacher attention the procedure is to raise a hand - here the girls are not hesitant to ask for individual help, and they do so more frequently than in the other classes. There are several interrelated factors which are implicated in an explanation.

1. The teacher is a male with a slight European accent and a style of old world courtesy which incorporates a treatment of the girls as 'ladies'.

2. The procedure of handraising and teacher attention means that the girls do not have to call out across the group and become the focus of public attention.

3. Given a fairly high noise level and the seating pattern, most times it is a case of a girl and her seating partner who require help, and their request is made on a joint basis.

This teacher seems to relate better to one or two individual pupils than to the whole group. Consequently the class tended to become noisy when he was spending time at particular desks and house points were deducted frequently. Boys in this class complained that the teacher favoured the girls - several boys wrote this as part of their English exercise where the task was to write a letter of complaint. The claim was repeated in the taped interviews and the girls referred to as teacher's pets. Several groups of girls from this class approached the teacher one morning with stories of being 'bashed up' by the boys. To them he was sympathetic, but to the researcher he stated that the claim was overly dramatic *"as though anything like that would really have happened"*. Stories of what can only be called physical violence were reiterated from several groups from this class in the taped interviews. When asked about this the teacher felt it was an indication of their developing

sexual awareness, "*I have seen them eyeing each other off*" he said, smiling. The assumption of the 'naturalness' of the developing sexuality of the students effectively masks the perception of the violence with which the boys chose to display that aspect of their development and by not censuring such behaviour this teacher was seen by the students as condoning it.

Girls from this class displayed a superior attitude to the boys:

"It would be terrible to be a boy ... to have to act tough all the time and to show off..."

wrote Joanne in an essay entitled *Wouldn't it be great to be ...*. However it was also girls from this class who challenged the boys' dominion over the oval. Although the challenge failed it is interesting to speculate that the continual reference to gender as part of the group identity (as evidenced by the teacher's reference to them as girls and boys) did actually provoke contestation of gender boundaries and raise awareness, albeit at some cost. A detailed description of this group in dancing class where several of these factors come together will be dealt with in a later section.

d. The fourth classroom observed was a special case in a variety of ways. Known unofficially to the school community as the 'special class for the gifted' it comprised some of the best students recommended by teachers in previous years as well as children of less exceptional ability who had joined the school mid-year or who didn't fit in elsewhere. One of the school's senior teachers, a woman, had been publicly associated with the local association for Gifted and Talented Children and was committed to the notion that these children represented a particular area of educational disadvantage. This class had been developed under her auspices. A charismatic teacher with a powerful and engaging personality she had encountered much opposition within the staff at both the ideological

and the personal level. This teacher left the school quite suddenly during the observation period, to be replaced by a young man who had a wide range of teaching practice, although fewer years of experience than other staff members. The larger part of the time spent observing this class was with this replacement teacher.

He inherited a situation wherein the class had already formed into a very cohesive group, more or less under the 'special' umbrella. The fact that the classroom was geographically far removed from that of similar age classes emphasized its sense of separateness. Being also furthest removed from the oval, the boys from this group did not always go round the school to join in with the moving pack of footballers there. In fact some of them were occasionally seen in the playground close to their classroom talking or playing padder tennis with some of the girls from their class. More normally however they stayed in same sex groups and congregated outside the classroom before school and after recess and lunch in gender specific bunches. Once again within the classroom before the teacher's arrival by far the most interaction involved boys with boys and girls with girls. Here the seating arrangement was at tables of 5 or 6; one was all boys, one all girls and 3 were mixed. In the case of the mixed tables, one had but one girl, another only 2 boys and the reason for the imbalance was that people had been moved for discipline reasons. The all boys table, over to the right hand side of the classroom emerged as a focal point of teacher-pupil interaction, attracting far more than one fifth of teacher attention. The majority of these children were known to be very bright - all these boys came into this category. They presented as keen and competitive students who reinforced one another in their efforts to display achievements. Because this class spanned three year levels the observer was able to note that not only did the boys initiate more pupil-teacher interaction than did the girls, but also the older children more often called out, questioned, offered their efforts for public scrutiny and reward more than the younger ones. As with the other groups, the children

dressed in casual style, jeans and tops predominating, and it was not immediately evident which were boys and which girls. (As the teacher was also new to the group and getting to know the class, names were used infrequently in the early stage of the observation.) At this age size is no longer a reliable indicator of age either, which meant that the the difference in effort to obtain teacher attention were first recorded in terms of place of origin and the gender and age difference gradually emerged. There were more boys in year 7 in this group than girls (6 : 3) so the gender difference became more pronounced. The all girls table at the centre back which contained no year 7's was definitely the quiet spot in terms of teacher attention.

This is a class in which certain individuals emerge as characters, as revealed by observation and confirmed in conversations with the children, e.g.

David, a year 7 boy, popular and a leader with a reputation for being good at maths.

"The boys in our class like maths because they follow David and he's keen on maths so they are too."

This comment from a girl seemed to hold true especially for those at the all boys table where David sat. When the class were treated to a talk on the origins of calculus, the teacher interrupted as the level of incomprehension was perceptibly rising, and asked "Who understands?" Only David and then two followers from the all boys table raised hands. The talk was adjourned.

Another character, Angus, was very good at sport and his reputation went beyond the classroom - the whole school knew Angus - and his classmates knew this too.

And Janet, a year 6, tall for her age, already an adolescent in appearance, who indulged in

much attention seeking behaviour particularly at times it seemed for the teacher's benefit, was renowned as the class ratbag. Another girl commented:

"And then there's Janet ... you couldn't trust her to behave properly ... say the queen came to visit, she'd do something awful like ditch tomatoes ..."

Classmates of both sexes shared the strongly negative impression of Janet. In the classroom she stood out - as did David, Angus, Sam, Andrew - but she was a girl who, incidentally was seated with four boys as punishment for being disruptive. It cannot be claimed that her behaviour was like that of the boys, except that she sought teacher attention as frequently as they did - meantime she spent time in class languidly anointing herself with sun cream and practising smouldering looks on the teacher and whoever else was around. In the playground she could be seen cheerfully chatting to the groundsman - a few boys in the school followed him around and helped with the mowing and tree clipping, but no other girls ever did. Janet said later in interview that she was leaving Midstone at the end of the year and looking forward to following in an older brother and sister's footsteps at a neighbouring independent school. In resisting the school produced understanding of appropriate schoolgirl behaviour Janet had adopted a highly individual style and a certain form of aggressive femininity. Janet's importance to the current study is that her stand is seen by classmates and teachers alike as definitely a 'problem', and its difference serves to reinforce the picture being developed of the general adoption of quiet conformist behaviour on the part of the girls in contradistinction to the loud assertive behaviour of the boys which was both tolerated and expected.

The effect of mixed sex groupings on performance was demonstrated in a drama class. Only 19 children were present as the others were involved in sports practice. The teacher randomly assigned pupils to 3 groups and instructed them in the task of appointing a

director and working up a dramatic routine. In one group there were 5 girls and one boy who appeared somewhat disconcerted. In fact the girls tended to leave him out of the discussion and in the outcome he was assigned a marginal role. The group containing 3 boys and 3 girls had great problems in choosing a leader and because of this achieved almost nothing. The group with 5 boys and 2 girls emerged with the boys' interests dominating and the girls being cast as followers until the female drama teacher intervened and engineered a more equitable outcome. The point is here that these children were distinguished as being more confident and articulate than average, who knew each other as people first and foremost (this was the stress of their earlier teacher) and yet the constraints imposed by gender provided almost insurmountable barriers for optimal performance.

Another incident in this classroom reveals the tendency to maintain similar sorts of gender distinction. The children were accustomed to playing a variety of educational games in their spare time, much as other teachers had used silent reading. Early on in the observation at one such time permission was sought and a boy, self-appointed leader, took a group of volunteers to the withdrawal room to play "Dungeons".

There were 6 boys and 3 girls involved in the group. The game was known to 3 of the boys and they set about organizing the others with liberal use of jargon associated with the game. The girls sat together in the circle around the games board, loudly proclaiming their ignorance of the rules and function of the game, as in "What's so great about this?" "Why'm I a wizard?" and so on, much to the annoyance of the key organizers. A similar number of boys had not played the game before, but they seemed to want to hide their lack of expertise, possibly connecting facility at the game with gender identity, in much the same way as the girls were at pains to protest their incompetence. There was no supervision here and the boys and girls drew farther apart, so much so that the game had not got going when the recess bell sounded and put an end to it.

This small incident is included to demonstrate the negative potential of associating one area of knowledge, one style of behaviour with either boys or girls. It seems that in some cases ignorance is just as germane to the public assertion of gender identity as knowledge. What remains uncharted is the reason behind the assumption of gender identity being construed as so important and central by the participants in the schooling process. As in the case of the drama lesson noted above, it is evident too that the presence of a teacher or supervisor operates to some degree to release the children from adhering so closely to gender restricted behaviours. To understand more on this score the discussion now turns to a report of what the teachers had to say about teaching in general and in the issue of gender in particular.

E. Talking with teachers.

a. A preliminary note.

If schools provide reality defining situations teachers are by and large the principal agents in the definitions of reality which emerge. This prescription seems to hold true for the primary school more so than the high school in which students are typically exposed to a range of teaching styles and ideologies. That the primary classroom is for its inhabitants a world *tout court* has been continually stressed in this writing. Given that in normal practice that world contains 1 adult and about 30 children there should perhaps have been more anticipation of the stresses induced by the constant presence of another adult. (Midstone school classrooms often had visitors, student teachers, parent helpers or expert advisers, but their stay in the classroom tended to be fleeting.) Teachers are used to having sole adult power in the negotiation of classroom reality without being subject to scrutiny from a peer. It was somewhat of a shock to discover the extent to which some of the teachers were acutely conscious of my presence:

"I'm not doing anything interesting today ..."

"I'd love to know what you're writing down ..."

"Are you still here? You've been in the school for months! Haven't you reached any conclusions yet?"

These were some of the more explicit ways of revealing their self-consciousness. Fortunately for the researcher other classroom ethnographers have reported similar comments (Blease, 1983; Smith, 1979). At other times teachers under observation would give what can only be described as 'demonstration lessons' or else set the class to work and talk at length to the researcher about their personal teaching approach and philosophy of life in general. While such events did lead into some detailed and fruitful accounts of teacher perspectives, it did mean that the observation period had to be extended until the novelty of a second constant adult presence wore off. And then the comment came *"I'd forgotten you were still here!"*.

b. Competing educational ideologies.

As can be deduced from the above account of the four classrooms observed the four participating teachers each held to a particular and in some ways different view of what education is and ought to be. All of them however at some time referred to the need to see the children in their classroom as individuals and not just as a group of particular aged young people. The ideology of individuation has become one of the unquestioned orthodoxies in teacher education, and is a good example of ideology working to disguise another set of relations. The dictum "Treat them as individuals!" makes no contribution to the classroom teacher's everyday task of dealing with groups of up to 30. As classroom researchers have long known, most of teacher time is spent interacting with groups (Lortie, 1975; Jackson, 1968; Woods, 1983). Most teachers work out the principle of the need for

individual treatment in terms of a style of approach which involves use of names and personalized attention (as distinct from actually personal attention). And of course in their efforts to respond to the class as individuals it is inevitable that some individual personalities are projected more strongly than others.

Following Spender's work wherein teachers were asked to nominate the pupil they thought of the most often, the researcher took careful note of the pupils whose names cropped up in conversations with teachers (Spender, 1980). In the first class observed the teacher, AH, frequently alluded to two boys in post class discussion whom she described as behavioural problems. In one case she worried lest her own negative reaction to the child would be transmitted and in the other she had sought help for a specific behavioural problem. Another boy was frequently referred to very favourably, a class character. In the second class MB appeared particularly interested in a boy whose work had shown marked improvement throughout the year. A second boy was spoken of in a similar vein and a third was a concern as he was in trouble in the broader school scene. She also frequently referred to a girl in negative terms as "*my madam*". This girl was a leader in the group and it seemed that her power over some of her peers was resented by the teacher as a threat to her own legitimate authority. The girl told the researcher later that she felt she had grown out of this school and was ready to move on. MB had been at Midstone for many years and took pride in seeing her old scholars take up jobs in the community - one was in the local bank, another at the local service station. All the pupils referred to in this connection were male.

The male teachers observed were less likely to talk about their pupils individually, or indeed to participate in the round table staff discussion which the women typically engaged in. This could have been due in part to the already noted minority status of male teachers in

the school (in terms of actual numbers) or to their relative newness to the school, but it is also consistent with the less personal style of interaction in the classroom. There was a sense in which the men accepted the children as fully formed individuals whereas the women teachers sought to effect some social transformation. The personal interaction style which was adopted by these teachers to practise an individualized approach to pupils may have the effect of heightening pupil awareness of gender constraints, at the same time as rendering gender construction invisible to the teacher involved, as noted with MB's class earlier. In general a valuing of individual attributes can unwittingly focus on gender in a reflexive manner, especially as the teacher strives to extend warm friendly relations to the whole class. The suggestion is here that some elements of gender construction form an unintended consequence of some currently accepted teaching styles.

Responding to the question *"Do you think you treat boys and girls differently in your teaching?"* the teachers said:

Class 1. AH: *"No - but I am aware of different levels of interest shown with certain topics, for example the boys' greater interest in rocketry."*

Class 2. MB *"No. I treat them all as individuals."*

Class 3. HD *"No."*

Class 4. CL *"No. Sometimes the boys are more noisy - but then there's Janet and she makes up for all the other girls."*

This last comment was particularly interesting in that there was no chance of a quiet industrious boy 'making up' for all the others. Of course it was not envisaged that these classroom teachers would argue for differential treatment of boys and girls, coeducation having general acceptance in the primary school as fitting with the ideology of 'equality of opportunity', another popular educational ideal which bears closer examination. The sports

teacher however had a different perspective and this will be taken up in the later section on sport. For the most part these teachers were averse to the idea of treating boys and girls differently, and were sure they did not do this. Their interpretation of equity was that it meant sameness - a position which effectively blinded them to the differences that existed. This is precisely the situation described by Hare-Mustin and Marecek (1987) as one of the two errors that has dominated the psychological study of gender.

As noted earlier Midstone school has a well developed curriculum which includes music, drama and physical education as part of the normal school time table, along with twice weekly library lessons in the resource centre for most classes. These areas have their own specialist staff and the researcher was aware of tensions between the various staff members concerning access to children which echoed the previously noted tension between allegiance to the particular classroom as against a whole school orientation. The musical drama production at the end of second term meant that over a period of some weeks children were withdrawn from regular classes for practice which produced problems for their classroom teachers who were understandably reluctant to introduce new topics when several children were absent. The specialist teachers involved were not unaware of the situation but felt strongly that the learning experience for the children warranted the interruption to normal class work. In this they were supported by the principal and the deputy principal who saw the production as a school-wide event. Specialist teachers tended to know children across the school and so formed a natural allegiance with the administration on this score.

The librarian in the resource centre also operated in a school-wide mode, at times extending her influence into the classroom in terms of lists of borrowers of overdue books. There was some tension also between the school librarian and the classroom teachers over the

matter of class sets of books (dictionaries, atlases etc.) which class teachers felt should always be on hand in the classroom and the librarian claimed should be shelved in the resource centre. One of the classes observed regularly spent their library lesson time at the local public library which was a short walk from the school. The teacher explained this practice on educational grounds - to acquaint the children with a library in the wider world, but also added that she was aware that their weekly walk made the school librarian furious but that insofar as she (the teacher) found the school librarian somewhat overbearing and self important she wasn't worried. The main impression then is that of specialist teachers (all women) doing battle as each strives to claim an area in terms of educational access to the children and classroom teachers seeking to protect the autonomy of their classroom control.

An exception to this picture was provided by the male sports teacher to whom children were handed over very happily. This teacher was extremely popular with the children, especially the boys, and after the principal and the deputy was next in terms of public focus, though not seniority, in the school. It was not clear whether classroom teachers were more ready to accept sport as a legitimate inclusion into the curriculum, or more relieved to have someone take over this aspect of class teaching.

Later in the children's interviews when discussing whether or not a woman could be a school principal, they frequently referred to the necessity to be interested in sport if you were going to do the job, e.g.

"You've got to be into sport to run a school and women aren't into sport..."

It seems likely that the role of the sports teacher and the role of the principal were somehow equated in the children's minds as a result of their being regularly exposed to public assemblies where sport was frequently featured and where the people in charge were male.

The female teachers at Midstone school emerged as closer to the children in terms of their interaction style and more prone to contestation as each sought to establish her own power base within a classroom or subject specialism. Males on the staff were associated with a school wide allegiance because of their positional power or style of classroom management.

F. Knowledge and the curriculum.

One of the most fundamental educational experiences afforded by the primary school concerns the realization that knowledge comes packaged into discrete areas which have their own particular labels. Thus, built into the day's plan and oftentimes written on blackboards comes the listing of subjects with times they are to be offered. Homework too is frequently identified in terms of particular curriculum areas. By the time students are in high school the separation of knowledge areas is usually complete, underlined by different teachers being associated with particular subjects. The basis for this fragmentation and compartmentalization of knowledge areas is established during the primary school years. Even in classrooms overtly committed to a particular theme, e.g. the rocketry class, this compartmentalization still occurs. Spelling is still spelling even though the words to be learnt are connected with rockets. As well as learning of the different areas the children readily internalize a ranking which involves the understanding that some knowledge areas are more difficult than others and also that some are more important than others. Some learning experiences are popularly regarded as fun whereas others are seen as real work. After a morning spent on mental, speed and accuracy and maths exercises members of one of the observed classes said: *"Now we must do something that's fun and easy because we've done all that hard stuff!"*.

Of all the learning experiences regularly afforded primary school children it seems that maths lessons are the most easily separated out and tend to be regarded as high on the domains of both difficulty and importance. Some of the children's comments:

g. "Maths is harder - there's just one answer, right or wrong. That makes it harder."

g. "Quite a lot of people have problems in maths."

b. "It's the first subject that comes to your mind really ... it's the main subject ... "

b. "It's the most common subject ... the one talked about the most ... you do it every day ... you have more homework in it ... every night it's maths."

Whereas more boys nominated maths as their favourite subject, there was a clear tendency for all children to regard maths as the most important subject. (The only other serious contender was English language - see Table 1 : Story writing survey results.) Their reasons for seeing maths as important usually related to its perceived instrumental value, as in the following:

b. "More jobs involve maths ... "

b. "A good grade in maths will help you get a job ... "

g. "You need it for a job ... "

b. "Maths is important because your whole life revolves around it. For example, if you're a man, say a carpenter, you need lots of maths."

g. "You need it for later on ... "

It would seem that the connection between schooling and work was seen by the children

with particular clarity in terms of achievement in maths and this perception is reinforced by the separate nature of maths knowledge within the curriculum. Given that by and large these children saw value in schooling in terms of its connection to life chances and, in particular, jobs, maths learning takes on a dominant role in their understanding of school. There are many interrelated factors operating here, one of which is gender. Boys more frequently linked maths to specific careers than did girls in the discussion. More boys expressed a clear idea or ideas of what job they would like to do and more boys nominated careers which did involve maths as their own ambition. Although there is a sense of distance from the world beyond school in the primary school - the students are still children when they leave and life choices are theoretically wide open - these gender related differences are transforming to some degree the experience of maths classes.

Maths was popularly seen by the children as both important and useful knowledge, and real work. The concept of 'real work' as used by these children seemed to carry with it some notion of difficulty and the requirement of particular application on the part of the learner. Questions which attempted to discover whether or not the children perceived maths as intrinsically hard or whether their attitude related more to methodology produced the following comments:

b. "You need to use your head more in maths ... it's harder!"

g. "It takes your brain to sort it out."

b. "You can't be slack in maths."

g. "It's remembering the method that's hard ... "

g. "Maths is something that needs a lot of concentration ..."

However there was also frequent mention of the teacher's approach, as in:

"It's important to have a good teacher in maths .."

"You need a teacher who is patient in maths .."

There was also clear indication that performance in maths tended to operate as a type of benchmark distinguishing bright kids from the less able. There was a strong tendency for children to nominate maths as the subject which the fictional poor student had the most problems, while at the same time maths was most frequently given as the best subject for the good student. (See Table 4: 1. Story writing results.) It would appear that there were methodological implications in some of their comments:

g. "You can hide your lack of knowledge in some subjects, but not in maths."

b. "You're either right or wrong in maths."

g. "You can see who's having trouble - they're down on the floor."

b. "You can tell by the way people act whether or not they've done well at maths

... "

g. "In maths it's always 'Hands up 10 out of 10, 9 out of 10, and so on ... I don't put my hand up if I've got just 4 or 5 ..."

b. "You can't fake it in maths .. you've either got the answer or you haven't."

There was also mention of the consciousness of public performance associated with maths class:

b. "It's embarrassing if you don't do well in maths ... ",

and in the case of Anna, a bright girl, who recalled her great embarrassment when she was 'down on the mat' (albeit voluntarily) to have something explained which she hadn't understood the first time round. At the same time there is frequent mention in the observation notes of boys seeking special help in maths (i.e. being down on the mat) rather more than girls. Of this one of the teachers commented that "*Boys need more hand*

holding". Apparently for these boys the short term 'embarrassment' is clearly outweighed by the long term gain.

There was some evidence from the observations that teachers utilized different interaction styles with boys and girls in maths classes. The incident in MB's class with the ratio introduction has already been cited (see p.131). In AH's class there was a tendency for those having trouble to be treated differently depending on gender. For instance in the case of John, a big slow boy who was repeating the year level, AH adopted a demanding tone "*Come on John, you can do it! Don't come near me until you've got it done!*" whereas with Rosa, stuck on the same problem, the teacher's approach was much gentler "*Yes, I know you find these hard. Let's work it out together.*" The outcome was that John did finally work out the answer whereas in Rosa's case the teacher's support meant that Rosa did little herself and certainly did not get John's sense of achievement. The publicity given to the girls and maths issue may have led to a lowering of expectations by teachers of girls in this area that may have devastating consequences for their learning.

The public/private dimension that seems to be particularly associated with maths class relates to different behavioural norms mentioned earlier. Boys due to their more frequent involvement in boisterous behaviour and individual attention seeking may be less threatened by an approach or a subject which highlights individual problems . The teachers felt that their repeated commitment to 'individuals' was particularly warranted in maths class, a position reflected in the observed treatment in all of the classes observed wherein 'those having difficulty' were invited or required to identify themselves. The suggestion here is that a methodology which focuses public attention on individuals may have different implications for boys and girls as learners. Maths learning and achievement is seen as happening in a public arena more surely than other subject areas in the primary school.

A final point on maths. The gender differences which have been widely noted and publicised with respect to maths achievement in the senior school were not in evidence here. In fact as the work of Moss (1982) has shown, girls as a group perform better than boys in the middle school years and this would appear to be true for the Midstone children.

There is much antipathy to ranking children at primary levels, however some teachers used diagnostic testing and the results of this plus the periodic class test marks revealed that the girls were in fact more often seen in the better than average groupings. It would also appear to be the case that the girls themselves were not aware of their superiority. In interviews the girls frequently referred to the boys as being 'brainier' and 'knowing all the answers'. The girls' reluctance to 'put themselves forward' was noted by one of the teachers, MB, in connection with entry to the national maths competition. However MB's only explanation of this phenomenon was 'feminine unreliability', seen as an individual property of the girls concerned. MB did not try to overcome their reluctance as she had a strongly affirmed aversion to such competitions which she saw as an intrusion on her control at the classroom level. Further evidence of the position against any form of academic competition shared by these primary teachers comes from the field notes:

Discussion in the staffroom this morning centred on what to do about the achievements of some children in the national maths competition in which several had won credits and distinctions. Several teachers were strongly against making these results public. Others, led by the principal felt that as the results reflected favourably on the school it could be a good idea to publicize them. It was decided to announce them at the next week's assembly, the usual time for announcement of sporting achievements.

.... At the assembly the deputy principal read out the names of the children who had won awards and gave them their certificates. The order was carefully randomized so that it was not clear who had credits and who distinctions ...

At this stage of their formal education none of the children interviewed thought that teachers expected different levels of performance from boys and girls in any academic area other than book work and writing. Repeatedly the comment came from both boys and girls: *"Girls are supposed to be neat and have good writing."* As has been already noted the teachers felt that they did not discriminate on the basis of gender in their teaching, and nor did they feel they made distinctions between curriculum areas. If anything the teachers at Midstone were more positively oriented to maths than average, and only one male teacher confessed to the often cited lack of confidence on the part of primary teachers in this area. *"I'm terrified of maths"* he confessed ruefully, perhaps wanting to show that maths avoidance was not necessarily a female trait. However it appears that gender related differences in attitude to particular areas were emerging from the interaction between content, teaching style and perceived usefulness in terms of career.

The gender related differences in number and style of teacher-pupil interactions that have been detailed above were seen to operate below the level of conscious awareness of teachers and pupils in the traditional or core curriculum areas. However when observing the expressive arts, music, drama, dance or fitness activities which are a regular part of schooling experience at Midstone, both teachers and pupils were aware of gender differences. In interviews boys often mentioned that more girls do music and this was offered as some sort of compensation for the fact that more boys were involved in sport. The music teacher agreed that it was harder to hold boys in music (they were more 'naturally' inclined to the wind instruments apparently) and that it was necessary to start them young to overcome this.

The drama teacher reported that it was difficult to get either boys or girls to perform as individuals at this age (year 7 - around 12 years of age) especially if the act implied any

emotion or romance. One section of the field notes describing a drama class highlights several of the points made earlier and shows how drama lessons can serve to confirm rather than transform gender relations of the wider society:

The children are seated on the floor in front of the teacher in the usual manner with the girls grouped fairly tightly up front and the boys ranged around the periphery. The drama teacher describes the task in terms of the children working up an act about a particular topic on a theme of their own choosing. Several boys call out suggestions, none of which seem to generate group interest. And then a girl says "Murder" - to which the group responds excitedly. In the ensuing discussion about how the topic could be approached, two schools of thought emerge. The boys are preoccupied with the event, how to do and stage the bloodthirsty act, whereas the girls, in line with the one who made the suggestion, want to approach murder from the point of mystery detection and solving the crime. The class is split into groups of 6, 3 boys and 3 girls in each, and then is given time to work up the act.

The oppositional relationship between the boys and girls became very evident when the children were free to work up the acts. In each case the outcome involved the boys staging the 'crime' with much flamboyance and a variety of individual acting styles, whereas the girls banded tightly together as a group of detectives and operated as a group all the time they were on stage. As a demonstration of the girls' resistance to the concept of operating publicly as individuals this sequence was most convincing.

Another example of gender-differentiated behaviour associated with a particular area comes from AH's class at daily fitness. Some of the classes at Midstone had embarked on a fitness campaign and part of the routine was a 10 minute run. The children were told that the object of the exercise was optimum performance of the body, and not the number of laps one managed. The girls seemed to understand the message and kept up a very moderate pace for the appointed time. The vast majority of the boys took the opportunity to

turn the fitness routine into a contest and strove furiously to outdo one another in number of laps. As the last part of the routine involved pulse monitoring it became obvious that most of the boys had overexerted themselves. However no amount of scorn from the girls and lecturing from the teacher was able to induce significant change in the boys' behaviour on this score. The girls' attitudes to their behaviour as revealed in their comments is that of self-consciously more mature young people:

"The boys just want to show off."

"They (boys) don't think about fitness, just about winning."

In this the girls reflect the learned gender stereotype of the wider society which casts the women as keepers of the public conscience and allows men some measure of bravado and display.

Observation of HD's class at a dancing lesson revealed the entrenched nature of some of the gender differences in response to social practices. This lesson was particularly interesting in that there were some features which confirmed gender distinction and others which attempted to open up new possibilities. It is contended that these sorts of tensions are present in other lessons too, only rarely are they demonstrated with such clarity as in the following:

The dancing lesson took place in the gymnasium on a regular weekly basis and, as the teacher, HD, was particularly keen on European folk dancing, there was a section on this followed by more popular routines, the hustle, the polka and a Greek dance. The folk dance routine had separate parts for boys and girls - the boys' movements were larger, covering more ground whereas those for the girls were more complicated, and contained

within a more prescribed area. To teach the basic steps the teacher took the groups separately. The girls had first turn at which the boys retired noisily to the other end of the hall to amuse themselves. The teacher encouraged the girls with calls of "*That's good! You are helping the boys by your good example!*", and continually stressed the girls' group responsibility to be exemplary for the boys' benefit. When it was time for the boys' turn the girls sat quietly and watched.

When the groups were put together the boys with their large boisterous movements and slap dash style and the girls more careful, reliable, neat steps, the difference between the genders was more evident than when they were treated separately. The girls' movements were more contained and they emerged as more similar, they were more clearly identifiable as a group, whereas the boys' greater assumption of space and freedom of movement allowed for a variety of individual variations and of course 'mucking around'. In the modern dance routine that followed, the hustle was carried out with the children in four lines, 2 of boys and 2 of girls. The girls lines were in front, near the music, while the boys were at the back. Once again the girls emerged as more biddable, better followers and the boys as less motivated and more disorderly. The hustle was followed by a polka, for which the boys and girls were partnered (choices having been made by the teacher). Immediately the level of performance of the group improved dramatically - the social control produced by separating the boys and pairing them with the girls meant that the whole group became more task oriented, noise level decreased (because the boys stopped talking), music could be heard by all and dancing proceeded. The teacher later remarked that he'd had to "force them together" at first but was obviously pleased at the way it was working. When HD introduced competition with "*The best couple will get 30 house points*" the task orientation increased even more with boys and girls keen to compete on a paired basis. Disparities in size produced some casualties in the pairing situation - one very

small boy was clearly disadvantaged and was reluctantly partnered by a girl loner. However in general the class functioned much more smoothly with the children in boy-girl pairs than in separate groups.

The last sequence was perhaps the most interesting of all. This was a performance of a version of the Zorba. The children had learnt the steps over several weeks and appeared to enjoy the response to the clear rhythm and increasing pace of the music. On this day they were told to form up in lines of 4 or 5 with arms linked. Although they were told that this was a dance traditionally performed by men (and the male teacher was quite proficient at it) the girls had no trouble forming up and executing the steps. However for these 12 year old Australian males the social mores which preclude physical contact between men outside of the handshake or the sporting triumph were too strong. Some tried to form up but very quickly the formation was dropped. Shortly after starting the dance all the boys except 2 who were performing as individuals had dropped out, leaving the girls in 3 or 4 groups, the male teacher and the 2 solo boys. Thus even though it was legitimate at the school knowledge level the boys were not able to disregard the gender-related cultural constraints. Of course dance is often seen as an activity more appropriate for females than for males. However in this case the boys reacted against the requirements of this last routine more strenuously than any of the earlier ones. An explanation of their behaviour must involve cultural awareness of 'appropriate' male behaviour, but also take into account the differences in group orientation and relationships previously noted.

It is commonly accepted among teachers that coeducational classes pose fewer management problems than all boys classes, and the common practice of pairing boys and girls crocodile style in the pre and early primary years attests to this. The lesson sequence recounted above certainly bears this out. At the same time it raises pertinent questions about whose

interests dominate in terms of time and attention as well as lesson content. Above all it was noteworthy that the girls chose to watch the boys, whereas the boys had generated interests other than the lesson in their free time. Running through this account of normal schooling practice attention is drawn to situations in which gender distinction emerges as discriminating between types of behaviour which are associated with the private domain and those associated with the public forum. Attention is a crucial dimension in this regard. The girls are repeatedly being cast as attention givers whereas the boys are attention getters. This difference is particularly salient in terms of the dancing class but it should also be noted that there are aspects of performance associated with the whole range of classroom life and are not limited to the expressive arts.

Another example of the expressive arts curriculum serving to confirm gender construction in both content and style is provided by the following account of Class 4 on making a video.

The teacher, CL, had provided the class with paper handouts with space for characters, camera action, script, timing etc. to be written in. Each pupil had to think up a short story/routine and write an appropriate script. Characters were then to be assigned by the scriptwriter who was to ask chosen classmates to play the parts. When CL called for volunteers, the task was to briefly retell the story and then "I'm thinking of for the part of ... Will you be in it?"

The first two volunteers were boys and their chosen titles were as follows:

1. Airport Pickpockets.
2. Luke Earthwalker.

These and all the other boys' stories involved only male characters, lots of action, and they chose only boys for the parts.

The first girl volunteer had chosen a TV commercial type format - a woman in a department store, a supervisor and the store manager. Not only were the roles assigned to the males involving positions of power beyond that of the females, but the girl director asked the boys to play the male roles before assigning the female part. This practice was repeated by the second girl volunteer who once again wrote males in bigger more dramatic roles and relegated females to the domestic sphere. At the end of the session CL announced that he too would participate in making a video and his was to be a series of modernistic shots to musical background for which he chose 3 girls and 3 boys. Many children volunteered and the finished product was very professional and pleasing and satisfying to all concerned.

In the earlier part of the lesson the children produced writing, ideas and ways of interacting that reflected the practices of the wider society (In this case they also reflected the image of society given by TV) and in presenting such impressions within the schoolroom they served to compound the gender distinctions already present. The classroom is not without its own unwritten rules governing interaction styles and approved ways of relating in dealing with such seemingly gender neutral notions as number and spelling as noted earlier. When normal classroom practice responds to gender discrete representations of the world at large the effect is doubly reinforcing of both the appropriateness of a gender divided world view (although the distinction may well pass unremarked by the participants - it is so much what you would expect) and the related distinction in gendered practices within the classroom. The teacher's introduction of leadership at the end of the lesson reflected what has been noted repeatedly in this work, namely the association between progressive student-based definition of the situation and gender distinction and contemporaneously and reflexively the introduction of authority and structure can break down to some degree the construction of gender. On the basis of these observations there would seem to be a case for knowledge as part of a discipline with an internal structure being relatively more free of

gender construction than curriculum which seeks for relevance and which is therefore inevitably redolent of the gender divisions of popular culture.

G. Sport in the school

The most frequently mentioned site of gender distinction in the interviews with children had to do with sport - participation, team games, followings etc. . Children felt that sport was something that boys were better at , that more of them did and that on the whole this was right and proper and within the natural order of things.

JG : "Are there things at school that boys are better at than girls?"

b. : "Yeah ..football!"

JG : "Why do you think that is?"

b.(very small): "Girls aren't big enough for footy."

JG : "But some of them round here are pretty big ... probably bigger than you ..."

b. : "Yes but we'll grow and have bigger muscles than them soon."

Only boys nominated sport as a career ambition, as in wanting to be a footballer or a cricketer. While on further questioning they would admit to knowing the difficulties associated with this career path (one lad said he would consider being a salesman in a sporting goods store as a fall-back) it did lend an edge and a determination to their participation. Sport is therefore seen in more functional and instrumental terms for boys than for girls. It has been suggested elsewhere in this work that more boys typically make the connection between schooling and job prospects than do girls; such a distinction probably becomes more important at secondary school. However it is noteworthy that no girl at this stage set out to be an athlete or a tennis player.

The sports teacher, a keen young male teacher who had been a classroom teacher in

previous years until he secured responsibility for school-wide sports provision, readily admitted that the provision for girls' sport at Midstone lagged considerably behind that for boys. On his arrival at the school three years before girls' sport was apparently non-existent. Midstone had always been renowned for its football team, virtually since its inception. The sports teacher felt that the difference in sports orientation started around year 5 which is the year in which the interschool competitions begin. The notion that gender distinction emerges along with time spent in school is in keeping with the observation that gender differences in playground behaviour became increasingly obvious as the children grew older. However on closer investigation it was discovered that the boys are involved in Saturday morning practice since year 3, although they do not play in competition until they are older. However in the light of this it is perhaps not surprising that year 5 boys are more keen to get into teams than are the girls who haven't been inducted in the same way.

The sports teacher noted that parental interest and support, which was absolutely necessary for the school to put up teams, was much stronger in the case of boys' sport than of girls. The disparity was highlighted in the timetabling in that the boys' interschool matches were played on Saturday mornings when fathers who were coaches and team managers could attend, whereas girls' matches were played during the week, sometimes even during school hours. This meant that working parents were unable to assist the girls' teams and there was much difficulty in recruiting an adequate number of coaches and supervisors. The sports teacher was mounting a campaign to convince all parents of the value of participation in sport for their children, to the extent of:

"If you want your child to play you must be prepared to help."

When asked about children whose parents either couldn't or wouldn't get involved he felt it was beyond his or the school's capacity or responsibility to enable the child to play.

Although in many respects the parents at Midstone were caring and involved, they exhibited the traditional gender differences in expectation of their boys as team members rather than their daughters. The situation is reminiscent of that summed up by the remark "We're all blue men!" made by a mother in the Connell et al (1982) study, thereby signifying the assumption of the school's male sports ethic in which women and girls simply cease to exist.

At the same time it is true that opportunities for girls to become involved in sports teams at Midstone have increased in recent years. There are girls playing softball, netball, basketball and hockey for the school. However in response to the question "What are the popular sports at this school?" the frequent reply from both boys and girls was "Football and cricket". And when asked "Who plays?", the boys said

"Oh everybody ... me and Jamie and Tom and Peter ...",

reiterating the point made earlier that boys continually use 'everybody', 'all of us', 'most kids' when they are talking about boys only. When asked why girls were not represented in the big sports the children were sometimes eager to say

"Oh some do ... there was a girl last year ...", or

"Mary plays cricket ... but not in the A team ...".

In other words they wanted to see the school operating fairly, no one was precluded, but girls didn't join because they weren't good enough, they didn't want to, or, because as one girl admitted somewhat ruefully "we're not encouraged". Again this situation brings to mind Bourdieu's insistence on the power of the school's role in reproducing the

inequalities of the wider society being crucially dependent on its being seen to operate in a fair and unbiassed manner (Bourdieu, 1977). Although it was true that some girls played in the lower grade cricket teams and at least one had played football with some skill in the previous year, their very unusualness reinforced the notion of gender discrete abilities which is the constant trap of tokenism, as well as being taken as evidence that after all the system is fair. Certainly the girls' presence on some teams had not entered into the consciousness of most of the boy players who, when asked about team members, always gave boys' names.

The fortnightly newsletter ran a heading "Girls Sport" under which went reports of softball, netball, hockey etc. . However such reports were neither as lengthy nor as regular as those under the Football heading - and this was never referred to as "Boy's Sport". Equipment at the school mirrored the discrepancy in interest in that boys' sport took a larger chunk of funding and was better equipped than that for girls. Belotti (1975) had noted the typicality of this situation in English schools and she suggested that the different status attached to boys' and girls' games resulted in girls growing up with the idea that their games are somehow less important. As Bryson(1983) commented on the Australian situation, school sport provides a structure which generates school produced understandings and at the same time symbolizes the broader area of male domination in the beyond school world. It is the contention of this work that this function is not limited to the question of school sport, but that in fact much of the typical schooling experience provides just such a structure . However it is particularly evident in the case of sport.

Of interest too was the fact that the sports teacher was somewhat against opening up mixed sport as he feared that the boys would dominate, by virtue of being 'rougher' and 'more risk taking'. It is noteworthy too that this awareness of gender difference in behaviour was

not achieved, or in general admitted to, by classroom teachers. At Midstone the ideology of equality of opportunity which was popularly interpreted by the classroom teachers as not discriminating on the basis of gender, was worked out differently in the sporting arena.

In general the gender differences noted earlier in terms of playground use emerge as both a reflection and confirmation of the differences in the structure of girls' and boys' sport within the school, even to the extent of the senior boys' monopoly of the largest piece of the school geography, the oval, being symbolic of the dominance of boys' sport within the institution.

H. Results of write a story.

After the classroom observations, but before the children were interviewed, each class was asked to participate in the story writing exercise described earlier. A copy of the questions used and a table of the results are included in the appendix. The results of this exercise, which formed the basis of discussion for the interviews, are summarized in Table 4.2.

There was a strong tendency for both boys and girls to give a boy's name for 'the one who is always in trouble'. Of the 98 participants only one (a boy) gave a girl's name and four girls gave names that were not identifiable by sex. This pupil was also seen as more likely to be in the upper end of the school, and maths was most often given as the subject area which would produce most problems for this student. There was a tendency to nominate a girl as 'the good student, someone for whom everything went right', but this tendency was much stronger in the girls' responses than in those of the boys (77% as against 24%). This result is to some degree derivative of the juxtaposition of the two characters which introduces the notion of opposites. However the picture is also consistent with Stanworth's

Table 4.2 : Results of 'Write a story' -in percentages

Class	Boy as 'bad' student	Maths as worst subject	Girl as 'good' student	Maths as best subject	Approach- able teacher is female	Authority figure is male
1. Boys (N=13)	100	54	54	62	62	69
Girls (N=15)	100	93	80	73	80	47
2. Boys (N=10)	100	60	20	50	80	80
Girls (N=8)	88	50	100	30	88	50
3. Boys (N=14)	100	71	21	57	29	50
Girls (N=10)	100	80	50	60	30	40
4. Boys (N=14)	93	29	0	64	57	43
Girls (N=14)	79	57	79	50	86	57
ALL BOYS	98	53	24	59	55	59
ALL GIRLS	92	72	77	57	72	49

findings wherein a group of older English students revealed that males are less likely to perceive their female classmates as identities (Stanworth,1983). There was a strong tendency, consistent across both boys and girls to nominate maths as the best subject for the good student - consistent with the idea mentioned earlier that this subject provides some sort of benchmark in that it is more closely connected with academic ranking in the minds of the children - although not necessarily so with the teachers.

Although the majority of the children were able to invent fictitious names for the pupils in the story, when they were asked to give names for teachers many of the responses involved the names of actual teachers at Midstone school, some past and some current. Thus their understanding of schooling practice would appear to be crucially connected with their own experience, in a more rigid way than their understanding (and consequent imaginary capacities) of individual pupils. Certainly in the subsequent discussion there were comments like

g. "I've never had a man teacher you see ... and I'd be a bit scared of one."

b. "Headmasters are always men ..."

g. "But then there was Mr. .. who we had last year. He was very kind and you could ask him about anything."

There was a tendency in this section for the children to give a woman's name for the teacher who was warm and approachable and a man's name for the authority figure, someone people were a bit afraid of - Mrs. Lovable and Mr. Meanie being classic examples of this response. Some responses indicated an awareness of the positional power within the school - 'the principal' was given several times for the authority figure. (In this case it was not scored as a male's name, although probably intended as such.) Interestingly the

tendency for the children to give a female teacher as the warm approachable one was least strong in Class 3 whose teacher was male and not heavily authoritarian. Class 4 who also had a male teacher when observed, had a female teacher for the first two terms and were probably less prepared to be positively oriented to males as they were still getting used to the new teacher.

The girls were more inclined to nominate a woman as the warm approachable one than were the boys (72% as against 55%), and in later discussions children said:

g. "A girl finds it easier to go to a woman teacher with problems.."

There was evidence in the discussions that children who had experience of both male and female teachers were much less likely to agree with generalizations about male teachers and female teachers and more likely to insist:

"It depends on the individual."

The students' repeated stress on the idea of individual difference as opposed to gender group membership reflected almost precisely the teachers' position epitomised in the comment from MB:

"To me they're not so much girls or boys, they're just a bunch of individuals!"

It can be seen that the ideology of individuation becomes inserted into the discourse of schools and is reflected in the students' accounts and perceptions of schooling processes, showing how the perceived neutrality of the school is achieved.

Responding to questions about themselves (see Table 4.3) more boys gave maths as a favourite subject than did girls (55% as against 38%) but almost the same proportion of boys and girls nominated maths as the most important subject (79% of boys and 83% of girls). This result is consistent with the argument put forward, namely that school

experience produces maths as important knowledge in the curriculum while at the same time schooling routines set up gender relations in which the positioning of males and females with respect to this and other areas of knowledge are differently located. From the foregoing discussion it can be seen that maths classes are a site for individual display in ways that are closer to school produced masculine behavioural styles than those for females. At the same time the positioning of maths as constituting valued knowledge in the school culture as well as in that of the wider world has ensured that this message has been received by all the children. Once again the situation can be viewed as an example of Bourdieu's claim of the partiality of the schooling process which centres on the notion that 'cultural capital' (here maths knowledge, strategies and skills) is theoretically offered to all, although in practice it is only available to those who already possess the attitudes and skills necessary for its acquisition.

Table 4.3 : Results of questions about you - in percentages.

	Favourite Subject is maths	Maths is most important	Look forward to maths in high school	Career is sex-stereo-typed	Positive chances
ALL BOYS (N=51)	55	79	32	86	70
ALL GIRLS (N=47)	38	83	26	64	48

More of the boys had some idea of their choice of future career than did the girls (86% boys, 60% girls) and the boys tended to give typically male dominated careers (e.g. engineer, electrician, scientist, footballer). When asked about what they thought of their chances of fulfilling these ambitions the boys tended to be more sure of getting the job than

did the girls, especially in the case of the girls who gave non-traditional female ambitions such as jockey, psychiatrist, ophthalmologist. These girls were doubtful of their chances of reaching their desired goal. This result provides another example of the interaction between students' proper recognition of cultural constraints and gender typical attitudes. The girls here are clearly less confident than the boys, but at the same time their responses show a realistic understanding of potential outcomes.

I. Talking with the children.

The interviews began with the researcher saying "I want to talk to you about the writing you did for me the other day". A general point which emerged immediately was the children's surprise that they had tended to give similar sorts of responses, in the first case that they had overwhelmingly given a boy's name for the 'one who is always in trouble'. Some typical responses to being asked 'Why do you think that happened?':

g. "I don't know why I put that ... I just did ..."

g. "You have to put something in and you choose the normal way it happens."

g. "I didn't even think of putting a girl ..."

Such statements as the above tend to reinforce the impression that tests such as this reveal something about a common understanding of the situation at a level distinct from the conscious response when intellectual notions of fairness and justice and particularities are brought into play.

When confronted with the fact that most of them had given a boy's name for the 'bad' pupil some of the groups, both boys and girls, readily agreed, the girls with somewhat of an air of moral superiority, the boys with smiling bravado, as in

b. "That's right! We muck around a lot more!"

The tone and use of 'mucking around' and its obvious connection with a schoolboy behaviour, was highly reminiscent of Willis's lads 'having a laff' (Willis,1978). Both girls and boys seemed to understand 'mucking around' in class as male appropriate behaviour. However there was also a consistent but minority group who disputed the researcher's proposition that giving a boy's name indicated that boys are in trouble more often than girls. These students, both boys and girls, objected and called in notions of fairness, insisting that girls could be trouble makers too and that not all boys were bad (although of course this had not been suggested). However in the ensuing discussion even these protesters agreed that while there are good and bad of both sexes, typically the sort of bad behaviour produced in the classroom is gender specific as in

g. "Girls have word fights but boys have punch up fights ..."

b. "Girls are quieter so they don't get caught so often .."

g. "It's the boys who run around the room and throw things .. girls break the rules more quietly .."

The tension between the need (possibly the reflection of an ideology) to understand the school situation as fair and just and an awareness of gender related behavioural differences emerged frequently in these discussions. At one level came the earnest insistence on the part of Craig:

"Boys and girls are created equal"

coupled with the often stated belief that what one could do so could the other. Running counter to this ideal came the perception that in practice the behavioural styles were

different, which caused them to look for biological explanations, as in

b. "It's the way they're built. Boys are fitter and stronger ... they can jump higher "

Above all they resisted the notion that the school or the teachers in it dispensed preferential treatment on the basis of sex, in ways reminiscent of Bourdieu's contention that the effectiveness of the school's role in reproducing the inequalities of the wider society is crucially dependent on its perceived neutrality in carrying out the process. And so, from the Midstone children, a typical position is:

"I think we're an equal school - not sexist."

and from Bourdieu and Passeron :

"The strength of the school's legitimating power lies with the social recognition of its neutrality and legitimacy."

(Bourdieu and Passeron, 1977, p.117)

When the children were asked with reference to regular schoolwork:

"Are there girls' subjects and boys' subjects?"

they were all sure that this was not the case. However they did mention the extracurriculum areas in this connection - more boys were good at sport, more girls were good at music, more girls are library monitors. These differences were often understood in terms of different interests, e.g.

b. "Lots of boys spend so much time at sport and girls ... they tend to like reading and that sort of thing ..." .

They were also aware of different connections between behaviour and performance, as in

b. "Some kids muck around ... even though they've got the ability."

JG "And what kids would do that?"

b. "Oh they'd be boys .. yeah every time ...".

While the understanding of gender differences in behaviour was in terms of 'natural' proclivities, there also emerged a strong tendency to define themselves as a group in terms of what they were not. In this way girls became more sure about themselves and what they could and should do because they were not boys, and similarly boys took care to demonstrate that whatever else they were they were *not* girls. Such oppositional tendencies are revealed in the following excerpts:

g. "Boys try to boss you around."

g. "Boys try to act tough and show off ... especially as they get older in the school."

b. "Yeah ... we're into mass brawls." (laughter)

b. "Girls don't get into trouble as much ... they don't take risks."

g. "I think it's a big thing for boys to beat each other and look really good in front of each other."

g. "I feel sorry for all boys 'cos they're boys .."

JG "Why?"

g. "They're not very sensitive people."

and these impressions are constructed via a response to an unwritten message of different behavioural expectations, as in:

"At school girls are supposed to be the goody goodies, boys are meant to be the bad ones."

These quotations are reinforced by Clarricoates' observation that when boys leave primary school whatever else they know themselves to be they know they are not girls (Clarricoates,1980). The fact that both boys and girls tended to regard the behaviour of the others as unacceptable - an impression which is continually reinforced in these

conversations - tends to create an ongoing need to further cement the individual definition of identity within one or other gender group. Such a process logically originates in the individual's attempt at location and definition within the group that constitutes normal school life, the school as a whole and the classroom in particular. However given that gender distinct behaviours and concomitant awareness increase during years at school it would seem that schooling practice is implicated in the process. Here we see how the peer group exerts pressure by disseminating a common expectation of gender specific norms in ways which are reinforcing to group membership. Both boys and girls by defining themselves oppositionally in terms of gender grouping, demonstrate an understanding and a commitment to the proposition that theirs is the better group with which to belong.

At the same time there was very little evidence of boys or girls contesting the gender appropriate behaviour for their group, even less so for the boys than the girls. The already cited instance of Janet in CL's class was unusual in her assertion of her right to the public eye and ear. The children agreed that it was much harder for a boy to act 'cissy' than for a girl to be a tomboy. Although this finding is at times interpreted as indicating that it is the *boys* whose behaviour is more constrained by the world of school, it could also be argued that the preference for masculine behaviours is an accurate reflection of the process of hegemonic masculinity being reenacted in the daily life of school. Both boys and girls were aware of gender constraints on male behaviour, and there was also some evidence that there were implications for academic achievement as well, as in the following:

g. "It's harder for a boy to be slow than for a girl - a girl just does her best."

Several comments revealed an understanding that for boys the task was to be seen to be bright, but not a goody goody or a studious type. Of one boy who was reputedly very bright but definitely a non-event in the sporting arena, a girl remarked dismissively:

He's the sort that could never do anything physical!"

The extracurriculum and particularly PE and games were often mentioned as the site where the differences are played out, witness the following discussion of games:

b. "We don't really play .. netball (giggle)"

g. "I think girls are best at particular games where there are rules - and boys are best when you have to be rough, grab the ball and race around ..."

b. "I don't like girls' games because they're all so drawn out and you're not allowed to tackle ..."

The point here is that such behavioural differences are not limited to sports and physical education but are part of school-produced behavioural style and attitudes that have implications for all aspects of schooling experience and individual learning.

Because the focus of the study was on institutional practice contributing to gender distinction, the interviewer led the discussion via the children's response to the two teacher types in the story to their perceptions of power distribution within the school. When confronted with the tendency to name a woman teacher as the approachable figure and a man as the authority figure some children readily agreed but most engaged in a lively debate as to whether or not in terms of their own experience these impressions were valid. Some of the oppositional tendencies carried over to this area, as in :

b. "Girls probably hate men as teachers".

In general there was agreement that women teachers could be authoritarian and strict and those who had experienced men teachers tended to insist that men could be kind and approachable. However the official power structure within the school had not escaped their notice, as in "*Headmasters are always men*" , justified in terms of:

"A man would probably run a school better ... "

"The kids would take advantage of her (a female principal)"

"A male principal would be better because women aren't into sport"

"A man would get things done whereas a woman would work at getting all the rules perfect."

The structure of the teaching profession which typically has women in the lower levels and men at the top was part of the children's understanding of the world. They sought to incorporate this understanding along with ideals of justice and equality. They knew that sexism is officially out, and yet one girl asked:

"Don't you have to pass a test to get to be a principal?"

The only possible answer here is yes in that aspirants have to ask for a special assessment. However to the children 'test' operates in a 'fair test' framework and the message is that men are better and more powerful than women in that they occupy the senior positions.

Opposition to the idea of a female principal came from both boys and girls - as in the following comments from girls:

"I don't think women should be in charge."

"Female principals wouldn't have the authority of a man ..."

"The kids wouldn't take notice of her (a female principal)."

In discussing whether or not a woman could be as good a principal as a man the children tended to start from the stated conviction that either could do the job depending on individual qualities and then reverse themselves in justifying the underrepresentation of women as leaders on fairly narrow and stereotypic lines. Although women *could* do it (in some ideal-type world) in practice men had more authority and respect from children and

were a better choice. The children frequently alluded to male teachers in general and principals especially as having 'loud voices' which contributed to their impact as authority figures. This is perfectly consistent with their experience at Midstone where the principal does have a loud voice which he uses most effectively. (At assemblies he never needed the microphone although all the other teachers who spoke did.) This practice evidently reinforced in the eyes of the children the effectiveness of the principal's 'big voice'. At the same time he was not a big man, definitely short, an attribute that the children tended to overlook in their contention that the stature and voice of men added to their authority. In fact many of these senior children would have been close to and surpassing the principal in height.

The children were also well aware that the teachers in the junior primary were all female, which they understood in terms of women being more appropriate for the care and management of young children :

"Little kids are used to their mothers at home and they are more likely to get on with a lady teacher."

"Women like little kids better."

"Little children are scared of men ... it's something psychological ... they're taller .. some grow beards and that gets you a bit scared ...".

In these examples the children are trying to make sense of the world of school, and they incorporate aspects of institutional practice, in this case the staffing structure, into their developing awareness of roles and possibilities for men and women. It is not a case of role model here - very few of the children could imagine themselves as adults or aspired to the personal style of their teachers. Rather than copying their teachers they are constructing an understanding of gender relations on the basis of their observations of the positions held

by the men and women workers at their school. At the same time they affirm a commitment to the belief that men and women are equal despite their perception of gender specific capacities in the adults around them. The situation is very like that described by Anyon who was investigating perceptions of life chances in a working class school in North America. Of this situation Anyon wrote :

" ... a somewhat contradictory state of consciousness; a practical penetrative understanding combined with an undeveloped fragmented theoretical system. The received ideology that was being transmitted did not appear to be totally believed ."

(Anyon,1981,p.122)

Certainly the Midstone children appeared to be blissfully unaware of the contradictions between their stated positions and perceptions. Any attempt to confront them with such contradiction produced rationalizations in terms of biological or psychological gender specificities, the beard, the louder voice, the 'natural' nurturant property of women or justification in terms of the younger children's expectations. At this stage their argument becomes somewhat circular while at the same time affording an excellent example of a central tenet of this thesis, and indeed of much of interpretive sociology, namely the much quoted dictum of Thomas:

"If people define situations as real they are real in their consequences."
(Thomas and Znaniecki,1925)

And insofar as the children can be seen as contributing to their growing understanding of a gender divided world and at the same time being shaped by that world, it is not surprising that some of the initiatives that have been introduced to undermine gender limitation in both boys and girls have not been strikingly successful.

The Midstone children were also aware of different teaching styles at different levels within the school and felt that in general senior teachers executed more pressure to perform and

were less warm and personal in their relationships with pupils than were the teachers in the junior classes. This perception interacts with that of the male teachers being located in senior classes and the administration and works to confirm the impression of gender appropriate roles as workers and their associated power differentials. The majority of these children were sure that the principal's job was best filled by a man, as already noted. Several of them also commented on the difference in teaching styles of men teachers, as in :

"Men (teachers) are better at dishing out punishment ... they have more determination."

"Men teachers are good at making you work ..."

"I felt more important at school when I got in a man's class ..."

Given the position of men within the school hierarchy it not surprising that this is the children's impression. What is clear though is that an emergent property of the situation, viz, a gender structured staffing hierarchy, becomes in the children's mind a property of the individuals concerned, the male's greater determination, the female's nurturance.

A final point in this section concerns the reflexivity of the children's impressions of appropriate teacher behaviour which makes it possibly more difficult for a woman teacher to attract the authority more readily accorded to a man. Certainly the children were more negative in their comments about female teachers who did not conform to the 'warm approachable' stereotype - they were 'crabby' and 'screamers' and very unpopular. On the other hand a man being kind and approachable was seen as a bonus and not negatively regarded. Thus the stereotypic expectations held by the children were in keeping with the institutional practice of employing women in the lower years and men in the senior years, an association set up in the primary school and likely to be further emphasized in post primary educational experience.

J. The argument part way through.

From the previous discussion it can be seen that gender construction is but one of the many interactive processes at work in everyday school life. Just as a focus on gender should not fail to take into account different constraints and conditions which both determine and are determined by the schooling process, nor should a representation of life at school be complete without discussing gender. Llewellyn proposes after an investigation of gender in an English school:

"... I would argue that there are always distinct 'female' and 'male' experiences of any situation, as well as shared levels of meaning through being working class or successful within the classroom."

(Llewellyn,1980,p.45)

Gender construction forms part of the socio-cultural experience of every known society, so ubiquitous that it is often overlooked and this omission has provided impetus for the present study.

At this stage there is certainly not sufficient evidence to suggest that the children at Midstone have been fixed within gender boundaries as a result of their primary school experience. However the primary school is important in that it sets the framework for institutionalized education by inducting the pupils into understandings of the ways in which knowledge is presented and the ways in which teachers behave and learning proceeds which have implications for gender and in which they are all involved. Aspects of primary school practice which can be seen to contribute to gender distinction constitute dimensions to be followed into the secondary school environment. These can be identified as follows:

1. The public/private split. The first dimension relates to the tension between public and private, acted out in schools in what has here been called the school-wide as opposed to the classroom mode of production. Boys in their playground practices, their affiliation with strong sporting teams and their attendant publicity, being members of large fluid all male groups in the school community are being produced as school-wide members, while girls are forming smaller, more intense groups within the classroom.

2. Staffing structure. The second dimension relates to the first in that at the official level of formal organization the school staffing structure reflects the sexual division of labour in the wider society and inducts the children into understandings of that division and the different sorts of power connected to it. The connection between males at the administrative level relating to a school-wide orientation and females predominating at the classroom level serves to emphasize the earlier point.

3. Gender and attention. Within the classroom pupil-teacher interactions have been seen to differ in number and style according to pupil gender. The ideology of individuation to a large degree precludes teachers and students from being aware of such differences. The well-documented greater salience of boys in the classroom relates to boys being produced as individuals while the girls seek the approval and support of peers to consolidate a group membership. Thus a teacher in responding to individual needs as one of the givens of currently approved pedagogical practice is likely attending to boys more than girls.

4. The children seek to identify themselves within a gender group in a gender-divided world. The suggestion is that gender identity is a means of coping with the tension induced by putting children together in groups of 30 and at the same time seeking to have them understand that they are valued as individuals. Once the process of appropriate schoolboy

or schoolgirl gender identity is set in motion - which would appear to happen during the primary school years - it generates its own momentum in interaction with other learned responses to schooling examined earlier, for example the knowledge that some subjects are more important than others. By the end of primary school the children reveal a conscious awareness of gaining ground in understanding about the adult world and how one operates within that world. All the children interviewed felt that it was more fun to be in the upper end of the school and readily condemned practices they identified as 'juvenile', such as hanging round the teachers at recess and lunch.

5. Schoolgirls and schoolboys : gendered identity. The grass roots gender distinction which was seen to arise continually in the absence of formal authority structure - in the playground, in the classroom before the arrival of the teacher, in informal lessons and at lunchtimes - provides a further indication of the previous point. To paraphrase the message of Maddock's paper on streaming "They do it themselves, don't they?" (Maddocks,1977) and indeed this response is a constant feature of teachers' explanations for gender-typed behaviour in students. There are also some indications that formal areas of knowledge may be less likely to produce gender division in treatments than more informal 'relevant' topics.

This is not to suggest that such structural inequalities as have been described are seen as producing inexorable and inevitable consequences, although some of the arguments put forward from a sex role perspective do seem to be thus flawed in that they are overly deterministic and basically circular (Connell,1988). Rather it is the power relationships between the sexes which, as Sheila Jaffries has it, women are continually forced to confront which influences their behaviour at each instant (Jaffries,1979). The boys and girls at Midstone school are everyday engaging in a similar sort of power struggle,

generated in part by schooling practice, and yet the rules are unwritten and the participants are for the most part unaware. As one little girl put it at the end of an interview:

"You get used to the daily routine ... and it becomes a part of you."

CHAPTER 5.

MIDSTONE HIGH SCHOOL

Argument : That the construction of students as knowing subjects in high school rests on the downgrading of the personal as a schooled product. In this way for boys high school experience represents a lessening of the contradictory messages of school whereas for girls it represents a heightening of the same.

A : Setting the scene.

Midstone High School is located within short walking distance from Midstone primary, and many of the students would have walked past the high school each day on their way to the primary school. Midstone High is a much more publicly observable structure than the primary school. Whereas Midstone primary was hidden away inside a suburban house bounded block, the main concrete and glass building of Midstone High is clearly observable from the street. Set well back from the road at the end of a tree lined driveway the high school buildings are surrounded by grassed and paved areas. The main oval abuts the street frontage and insofar as the schoolgrounds adjoin the paddocks of a neighbouring agricultural college they seem to go on without limit, lending an atmosphere of space and tranquility which is relatively unusual in a suburban high school in a long established area. Walking down the drive towards the school it appears that the main building is to one side of a rather poorly integrated mix of other structures. These are wooden buildings some of which are recognizably education department 'portables', others are single structures looking rather like outbuildings. Entering the main building during schoolwork hours the visitor is unlikely to encounter any students, a situation which is perhaps somewhat surprising given that this is a large school with over 1200 students and 100 staff. There is

a system of bells which govern lesson change times and at such times teachers can be seen hurrying to class. The atmosphere is one of quietness, diligence and precision. At first glance the effect is in stark contrast to the experience at Midstone primary school.

There is one important feature of Midstone High School which rates immediate comment. It concerns the fact that the school is divided into two sections with the years 8 and 9 comprising the junior high school and 10, 11 and 12 forming the senior high school. The main building with its clean lines, wide corridors and solid construction houses the senior school and the collection of other structures known by the school community as the 'wooden buildings' are for the junior school. There are staffrooms in each section with the one in the main building being known as the senior staffroom and the other the junior staffroom frequented by teachers whose main workload is in that section of the school. There are no formal prescriptions about who should use which staffroom but the informal culture sanctions habit and custom to the degree that some teachers in the junior staffroom report "Oh I haven't been over there in years!" when asked if they ever visit the senior staffroom. There is a system of carefully monitored rules and prescriptions that govern student experience and students from the junior section are explicitly discouraged from mixing with the senior students. They are not allowed in the same areas of the schoolgrounds, they have different library provisions, different canteen times and mostly different teachers. The division into junior and senior schools is significant in terms of its effect on the daily experience of students and staff.

There is an historical fact that has some bearing on the interests of this work which is worth noting in connection with scene setting at Midstone High. It appears that the wooden buildings were the original high school built to provide secondary education for academically able boys in the area. After several years these buildings were replaced by the concrete and glass structure which now houses the senior school and at the same time Midstone high school became coeducational. At that time coeducation was not interpreted to mean male and female students sitting in the same classroom or even sharing the same

playing areas. The older wooden buildings thus became the girls' high school while the boys moved into the newly constructed concrete and glass building. The divisions in teaching areas, staffrooms and playground space which still exist were forged in terms of providing separate areas for male and female students. This situation existed up to and including the teaching experience of some of the teachers still at Midstone High who recall their time of teaching in an all girls' environment as richly rewarding.

While this historical contextualization lends a certain piquancy to the accounts of students from the junior high who are somewhat resentful about the restrictions applied to them by the separate schools policy and in which they report a sense of being second class citizens, it must be understood as part of general changes in education policy as well. High schools in their early days in South Australia were academically selective and so the recollections of the teachers of the fulfilling experience was not simply of teaching in an all girls' environment but was also related to teaching a student group that had been highly selected. While some of the current teachers appear to associate the single sex group composition as highly significant in this experience it is also undoubtedly the selected nature of the students that contributed to the 'golden age' flavour of their recollection. In this respect the teachers show themselves to be taking up positions within current educational discourse - academic selectivity is recognized as an outmoded and problem ridden basis for assembling a student body, single sex teaching, although controversial, is an accepted arena for debate. Other teachers resist the contention that girls may only achieve in a single sex environment and insist that the question is simply one of avoiding 'sexist' practices in one's teaching. Midstone High continues to enjoy its reputation for high academic achievement, despite the liberalisation of entry and selection procedures. School officials and teachers were very willing to participate in the research in the hope that they would learn some new ways of promoting female academic achievement (not that the research was ever billed as such). And so once again the research was facilitated by one of the issues that was targetted for investigation, namely that academic achievement generally and mathematics achievement in particular was a 'problem for girls'.

Another clear feature of the student population at Midstone High was that boys outnumbered girls by 3 to 2. This was explained by the female deputy principal as a result of competition from several private girls' schools in the area, as well as the government girls' school which forms the third site in this study. The greater salience of boys in the assembled student body at Midstone High can be partly explained by the fact that there were more of them. The situation becomes further complicated by the fact that, in keeping with national figures, the girls who enter at year 8 are, as a group, more likely to finish high school than are their male peers. At the time of observation only 63% of the year 8 class were expected to be in the school at year 12, although more of the girls than the boys were expected to be in this category. To some degree this attrition was offset by new students entering the school in the senior years. In addition, and of particular interest to the present study, the classes into which the majority of ex Midstone primary students entered were characterized by a larger proportion of girls than boys. At year 8 classes were formed by subject preferences and given that most of the Midstone primary students had opted for music and/or languages or some combination of both, they found themselves in classes that were relatively atypical of the gender balance to be found in the school in general. They were also in classes wherein most students understood that they were going to finish high school and as often as not undertake further study. This sort of unofficial streaming has been noted in studies of high school course arrangements (Maddocks, 1977). This profile underscores the class location of the ex Midstone primary group and did not escape notice of several teachers at Midstone High, some of whom remarked somewhat bitterly of one student:

"It's not that he's interested in music, it's just that his parents wanted him in a class like this with other good kids.."

Of course what this meant was that there were year 8 classes which were heavily male dominated and which were comprised of students that teachers identified as 'less academic' and were therefore more likely to be seen as problems for teachers, administrators and

other students. Despite the fact that several teachers commented to the researcher *"You'd really get evidence of the boys drowning out the girls if you came to *** class!"* it was understood that these issues were beyond the scope of the current project. At the same time it is noteworthy that the gender imbalance that existed in the school contributed to teachers' understanding that the issue of gender was a girls' problem.

B. The school as organization : the staff.

The division within the school into junior and senior sections was reflected to some extent in the staffing structure. Midstone High at the time of investigation had a male principal, and of the three deputy principals two were male. The female deputy principal was responsible for girls' discipline and concerns throughout the school. Given the size of the school and the fact that her office was located in the senior section this task proved well nigh impossible. During an early interview she recounted an incident in which she had reprimanded a year 9 girl for wearing earrings and thus expressly contravening school policy. The girl had unabashedly responded *"Oh no! You're allowed to wear this sort at this school"* thereby revealing she had no notion of to whom she was speaking. The female deputy principal had taken up the issue of girls and sexual harassment and had initiated a series of girls' only assemblies and collected a questionnaire from the year 8 and year 9 girls about topics they found worrying. No doubt as a result at least in part of this activity the staff were aware of the issue of sexism and sexual harassment in the school and how they addressed this concern will be described in subsequent sections. The point here is that it was accepted by and large that schooling posed a problem for girls and that action was needed on their behalf, further evidence of the point made earlier.

At the level of senior teacher 14 of the 17 teachers so designated were male. While these may not be as publicly powerfully positioned as the deputy principals in terms of schoolwide responsibilities, their task usually involved the coordination of a particular

subject area and they were acknowledged in this capacity by classroom teachers in comments like *"Mr T. has decided there is to be a maths common test on Friday"*. In this way the students understood the senior teachers to have a very particular power over their schooling experience - and over their teachers. Of the 78 staff members who were regular teachers, 50 were women. It can be seen that the staffing breakdown at Midstone High reflected almost exactly the profile that has been consistently drawn of staffing structures nationally with men much more likely to be in the more senior positions than women.

There was a pronounced gender dimension to the staffing structure of the junior and senior school as well. There was a much higher proportion of women teachers who frequented the staffroom in the junior high school section, reflecting the fact that women teachers were more likely to be working in that section of the school. The junior staffroom appeared convivial and relaxed with no fixed seating pattern and fairly fluid conversational groups. In the senior staffroom a more formal atmosphere prevailed. Teachers tended to sit in faculty groups and the talk was more work oriented. The principal and the deputy principal occasionally joined the staff for morning coffee in the senior staffroom. Such visits were not observed in the junior staffroom. Some women teachers who worked in both sections of the school reported that they felt more comfortable in the junior staffroom and only attended the other room when they were expressly instructed to do so for a faculty meeting or other business.

Whole school assemblies were extremely rare occurrences, 'once in a blue moon' according to the students. During the 20 weeks of the research there was only one whole school assembly. The junior school were grouped for assembly a little more frequently - 3 times during this period, but on each occasion the main agenda was school organization and the restructuring of classes and rooms. These were not the regular occasions used to inculcate school spirit and group membership to which the Midstone primary students had been accustomed. While some of these young would-be school sophisticates reported always finding assemblies boring in later interviews they also consistently reported a sense

of neither being known nor registered by the official school structure. *"Here you're just a number,"* said Joelle. Although the year 8 students were able to name and identify the male deputy principal who was in charge of their section of the school, they could not name or identify the school principal or the other deputy principals. It was also noteworthy that the year 8s did not think their deputy principal would know them, except for one or two who had been in trouble which had led to a visit to his office.

In summary Midstone High School is organized along much more formal lines than the primary school of the previous chapter. There is a fairly high degree of impersonality about the official school structure which is a significant departure from the family oriented model of the primary school. There are also pronounced gender differences in terms of the staffing. The research sought to identify the effects of these differences, if any existed, on the daily experience of the students at Midstone High.

C. Playground Practice.

The behaviour of students in the school grounds in their free time was the most obvious demonstration of the continuity between school appropriate behaviour learned in the primary school carrying over to the high school. Throughout the observation period boys were seen everyday playing a variety of ball games on the oval and other large grassed or paved areas. The only time girls were seen playing ball on these areas was during an organized inter-class lunchtime baseball match. Girls seemed to spend their time during recess or lunch walking in pairs or in small groups to and from the canteen, or sitting together on the steps or seats outside the classrooms. Some of the senior school girls were seen sitting in groups around the edges of the oval on which the boys were playing. In later interviews several of the year 8 girls complained of 'nothing to do at recess and lunchtime' as a negative feature of high school experience. They were somewhat defensive about admitting this, saying *"It's not that we want swings and slides like little kids, but there ought to be something for us to do"*. Boys, on the other hand, tended to be positive

about such times, in which they were able to celebrate their release from the constraints of the classroom by engaging in active play. Many of the boys nominated 'recess and lunchtime' as the most pleasant parts of the school day.

For boys participation in ball games, no matter how loosely organised, represents an easy social membership, entirely in keeping with accepted schoolboy behaviour and accepted masculine behaviour generally. Such behaviour also contains a public dimension in that the players can be seen by everyone walking by, as well as facilitating knowledge of different boys across class and age lines. For the girls, however, the rules are not so clear. At one level they felt self conscious about their new found high school maturity and were reluctant to appear childish, but admitted they were bored and resented being left to kill time while their male peers were so evidently enjoying themselves. The disjunction between the boys' and girls' response to lunch and recess was most marked at year 8. While some of the year 10 girls were still saying that long boring lunchtimes were a problem it seemed as though most had worked out acceptable ways of behaving. For most of them this still involved talking with friends but they had lost the sense of awkwardness about what to do. While most of the year 10 boys still played ball games they no longer raced out of the classroom with the same urgency to get to the playing field as was seen in the year 8s.

In a later discussion of sport in the school the links between free play as seen at recess and lunchtime and the officially organized physical education and sports program will be drawn.

D. In the classrooms.

For students at Midstone High the classroom was a particularly important feature. On entering high school the students were assigned to classes on the basis of subject choice. As a result the class thus formed comprised the most constant feature of school life insofar as these were the people with whom one sat for most of the time at school. Each class was

assigned to a particular room which became the homeroom and the source of student identification for all school interactions. "We're 812!" the group would chorus if a teacher mistook the room. At Midstone High the three digit number which identified a class did not correspond to a room number or a teacher's initials, but appeared to be a code randomly generated by the time table organiser apart from the first number which identified the year level. The teachers tended to move between classrooms rather than the students, except when the subject required particular facilities such as the science or language laboratories or the music room. The use of specialist rooms was however a stronger feature of the senior school than for the year 8s and 9s. Twenty of the students from Midstone primary were divided between three classes in year 8 at Midstone High, and these three classes constituted the focus of the observations. As noted earlier these classes had opted for a curriculum which included music and languages and were unofficially understood by their teachers as being for the 'bright kids'. (Teachers justified this understanding in recognizably sociological terms such as caring parents who could afford the best for their children, computers, musical instruments and instruction, who valued education and were themselves well educated.) Two of the three groups had a significantly higher proportion of girls than boys, whereas in the third the numbers were more equal. They were in larger classes than otherwise in their year level in that the school had adopted the fairly common practice of organizing smaller classes for students identified as less able. The year 8 enrolment at Midstone was 250 students distributed over 10 classes; the three classes in the research group comprised 90 students, which represented 36% of the total in that year.

The research had been introduced to the school administrators and participating teachers in terms of its relationship to the issue of girls and mathematics and classroom processes, and so it was logical to commence with mathematics lessons in these three classes. In mathematics classes the homeroom groupings changed slightly as this was the one area in which students were 'set', that is assigned to an ability group on the basis of their performance in a common test administered on their entry to high school. There was some movement between the three classrooms for mathematics lessons, with two of the groups

being classed as 'advanced' and the third 'standard'. In order to reveal classroom processes the three mathematics classrooms will be described, followed by descriptions of other subjects with the homeroom group, the majority of whom were also in the class for the mathematics lessons.

Classroom 1.

825. The teacher JW a middle aged woman has taught at Midstone for many years. She has recently become very concerned about the pattern she has observed of girls who appear highly able in year 8 not appearing in senior mathematics classes. She has undertaken to teach mathematics to the year 8s as well as teaching the subject in years 11 and 12. She feels that year 10 is somehow the problem year which provokes girls to drop mathematics. She believes girls are not sufficiently encouraged by their teachers in the subject. She wishes to establish good relations with this year 8 class in the hope that she will be able to assist more girls to stay in the mainstream mathematics courses in the senior years. In this endeavour she has deliberately sought to teach the year 8s in English as well as mathematics in order to soften the transition between primary and secondary school and to help establish her connection with them. JW is with this class for 11 lessons per week as well as at homeroom times and is thus with them more than any other teacher.

The classroom is a stand alone 'portable' wooden construction that has clearly seen better days. Although there are some open lockers in the anteroom, schoolbags are strewn around the classroom floor. The only attempt to decorate the room appears to be two fairly ancient posters on the rear wall. An old oil drum stands at the exit to be used as a rubbish bin. While the room is not dirty it has none of the personalized decor that was the norm in the primary school. The students arrange their own seating and the pattern hardly changes during the research period. A group of nine girls sit across the back of the room having pushed their single desks together to make a continuous line, with the rest of the class occupying double desks in paired rows. The seating is in same sex pairs by student choice. The

ex Midstone primary students sit in pairs although the pairs do not sit together. This room is at some distance from the rest of the wooden buildings and the students comment later that their location makes them feel as though they are not really part of the school.

There are 17 girls and 13 boys in JW's class, with 7 of these ex Midstone primary students. The atmosphere in this classroom is friendly and businesslike, JW maintains a clear work-oriented agenda. Coming from the primary school experience, the observer is immediately struck by the more impersonal style of the teacher-student interactions. For example rather than waiting for everyone's attention and requesting 'Pens down!' or 'Open your books', JW plunges straight in to the substance of the lesson. The assumption is clearly that the students will take responsibility for their own learning, a perception understood by the students in later interviews in

"They don't push you here to do the work, you've got to do it for yourself."

This was seen as a positive feature by the students and connected with a feeling of being 'more mature' now they were in high school. But others complained

"They don't even remind you when the homework's due." or

"They give us too much homework - none of the teachers stick to the homework time table!",

showing that they missed the more watchful approach of their primary teachers. The impression given by JW was certainly not one of watchdog to ensure that the students were working, but most of them were most of the time. JW frequently told the group they could work together through a worksheet if they chose, a situation which gave rise to consistent gender differences. On these occasions the boys tended to work in parallel, taking advantage of the teacher's permission to compare answers or check 'What number are you up to?'. The girls in contrast tended to work through problems together, a process that took rather longer as it involved going through the steps aloud and discussing when there were disagreements about correct procedures. On these occasions a boy finding a problem with

the work would call for teacher assistance whereas a girl would ask another girl, reflecting a pattern of differential attention seeking already noted in the primary school classrooms.

A related point concerned the fact that whereas a boy sitting by himself was not unusual and did not appear to reflect on his status in the classroom or detract from his solicitation of teacher attention, a girl loner was in a more difficult situation. Girls tended to change seats if their partner were away or else to join up with the pair behind for conversation or work sharing. One girl in this class was continually seated by herself. She appeared to be a willing contributor in class and attempted answers to the teacher's questions rather more often than her classmates, but often her answers were incorrect. On several occasions the boys were heard to groan if she were called on to answer. Although the boys were often wrong as well, there was no occasion of the girls' displaying similarly dismissive behaviour. JW in a later interview remarked of her somewhat dismissively "Oh she's a lump of wood!" More generally the teacher's comments revealed an expectation that girls worked conjointly, for example when extra work sheets were being handed out and Cherie had asked for some JW responded with "What about Kate?" referring to Cherie's seat mate. By and large the fact that most of the girls worked cooperatively in close-knit pairs or groups was part of the shared understanding of the social structure of the classroom within which teacher and students operated.

Names were used much less frequently in this classroom than was the case in the primary school, a feature that was typical of all the high school classrooms at Midstone. Boys appeared much more likely to be named by teachers than were the girls, even in this classroom in which the teacher, JW, was with them all for the larger proportion of their schooltime and had an admitted policy to try to get to know the group well. The observation period did not begin until term 2, deliberately designed to avoid the getting-to-know you period which is always a feature of first year high school. It could therefore be assumed that the teachers knew all the children by name, so the non-naming was a function of teaching style rather than teacher ignorance. After the first week of

observation the researcher knew all of the boys' names but only 7 of the 17 girls were identifiable by name. On this point there was an observed tendency for boys to be addressed by their full name, e.g. Toby Dunstan, Jonathan Caldwell, whereas the girls were Debbie, Cathy and Susan. Such differences in greeting styles have been connected to different positioning of males and females in terms of public power and ascribed status (Poynton, 1990). Further research is needed to show whether or not this is an enduring feature of classroom experience.

The usual teaching method adopted in mathematics classes in this group was a fairly traditional chalk and talk exposition at the blackboard and then the students were set to work on problem sheets. The exposition stage was interesting in that it revealed gender differences in interaction styles which were also noted when the correct procedure was being demonstrated on the board. Firstly boys dominated in terms of number of interactions in this and all other classes, chiefly through being more likely to initiate student-teacher interaction than were the girls (see Table 5.1). Secondly the boys' interactions tended to be longer, often involving challenge to the answers or procedures previously accepted, such as "Why can't you do it this way?" or "What's wrong with putting $x =$ the length?" or "Isn't it ...?". On these occasions the boys' contributions were distinctly more assertive than ones from the girls, they tended to stay with the topic longer and hence take up more interaction time than the girls. Thirdly and most noticeably in this group was the eagerness with which the boys strove to answer if the work was described as 'a new area' and the questions were more open ended. On these occasions the boys took up the opportunity to air their general knowledge, particularly with respect to computers and numbers. When new topics were being introduced it was repeatedly observed that the volunteers for answering were all boys. It was also true that their answers were often wrong, for example when David volunteered "Imaginary numbers" as the answer to a question that was really looking for "perfect squares", he revealed that he didn't know what imaginary numbers were. However, given that he was able to name this concept which the others had not heard of and which the teacher then indicated was connected with higher

level mathematics, David's reputation as a 'knower' was enhanced in the eyes of other class members. Being wrong did not entail opprobrium for the boys but rather their

TABLE 5.1

Interaction Monitoring : 5 minute time samples

Numbers of interactions divided by numbers of boys and girls in group.

		<u>Boy</u>	<u>Girl</u>
<u>Year 8</u>			
Maths	Teacher	6.64	3.76
10 Observations	Initiated		
Average 11b,17g.			
	Student	4.27	1.24
	Initiated		
<u>Year 8</u>			
Other Subjects	Teacher	8.23	4.82
15 observations	Initiated		
Average 13b,17g.			
	Student	5.15	2.47
	Initiated		
<u>Year 10</u>			
Maths	Teacher	4.64	4.25
13 observations	Initiated		
Average 14b,12g.			
	Student	1.43	1.92
	Initiated		
<u>Year 10</u>			
Other classes	Teacher	2.33	3.67
10 observations	Initiated		
Average 9b,15g.			
	Student	3	2.4
	Initiated		

capacity to dare to try was seen by the girls as indicating a superior intelligence. This point will be taken up in the section on talking with students.

There were many indications of this teacher, JW, operating in ways which were reminiscent of the primary school teachers too. In particular there was the effort to build class cohesion and class loyalty, as in "*You are special and so we're going to do this simplification of factors which is really a year 9 exercise!*" and "*Now we're beginning to feel as though we really are an advanced class!*" There were several occasions on which the boys' response to such teacher strategies appeared to be to assume that they were the whole class. When questions were posed to the whole class the boys answered for the group. This tendency was most notable on the occasion of the baseball game (referred to in chapter 3) wherein the boys assumed that they were carrying the honour of the class on their shoulders. Only boys changed into sports gear for the match and the boys commandeered the equipment as well as electing themselves to the bases and at the top end of the batting line. In a history lesson the teacher reflected the boys' centrality in the class right from his opening remarks, as seen in the following excerpt :

The boys are clustered round the front right desk in a tight animated group and are reluctant to disperse as LB enters. The girls are all in their places, working and chatting quietly.

LB : "All right, everyone, could you sit down please!" then

LB : "Come on, everyone, sit down!" followed by

LB : "For the third time, be quiet!"

As only boys were standing or moving about the first two 'everyone's in this interchange meant the boys. By the third exclamation it had become evident that the boys were the recipients of a whole class command.

It is perhaps not surprising that the girls in this class were less inclined to respond to 'whole class' strategies, especially in the case of the nine who sat across the back and who were identified as potential trouble makers by some of their teachers. In later interviews these girls reported feeling as though they did not fit in to the class and the school, were too old to be treated like babies and resented the junior status of year 8s.

Of particular interest to the present project was the way in which accepted male student behaviour interacted with the knowledge areas to compound the effect of boys being seen to have different interests and abilities than the girls. A science topic undertaken during the observation was primitive life forms and the students were asked to bring worms to school to provide some living examples of primitive life. Predictably many more boys brought worms than did girls, and the boys again volunteered more answers than the girls. The practice of male volunteering was so strong in this segment that the teacher asked one persistent and confident volunteer "*Do you know or are you just guessing?*" The boy replied "*I know!*" In an effort to generate participation from the girls the teacher called encouragingly "*Go on! Have a guess!*" To which the girl replied with a shrug of the shoulders and a half smile, but was unable to give an answer.

Classroom 2.

This is a homeroom with 11 boys and 19 girls, 6 of whom are ex Midstone primary. Their homeroom is in one of the lines of wooden buildings which formed the original high school. The classroom is somewhat scruffy but basically brighter and larger than that of the previously described class. There are lockers within the room but once again there are bags and equipment on the floor. This homeroom has different teachers for each subject area - their

mathematics teacher, DT, is also the homeroom teacher who has been at the school for 4 years after some years of country service. An ambitious man in his mid thirties, DT clearly regards Midstone High as a good position and aspires to high achievement within the teaching profession. The mathematics class that derives from this homeroom is set as 'standard' which means that these students did not achieve as highly on the common entrance test as did the other 2 year 8s being observed.

There are roster lists for duties on the side wall which identify boys to be in charge of the opening and closing of windows and girls are responsible for tidying the desks.

DT's manner during the homeroom period in the mornings combines a relaxed friendly style with a businesslike attention to the matters in hand. These tend to be the routine roll call - for which a student is nominated to be responsible - the reading out of the daily bulletin and other matters of school administration that require dealing with at the classroom level such as library returns, lost property, room changes and so on. The researcher immediately noted once again the degree of impersonality as being much higher than in the primary school, a feature underlined by comments such as :

"Everybody's not here today. There are only 27 present. OK, so who's missing?"

which revealed his assumption that it was their responsibility rather than the teacher's to be aware of the individuals who made up the social group. Once again the ex-Midstone primary students were sitting in pairs and the rest of the class was similarly seated in same sex pairs. A difference from the previous class was that in this room the back row was all boys. A section from the field notes captures this particular teacher's interaction style :

After homeroom business DT interacts with a large group of girls in a very jolly folksy manner, for example he promises them chocolate frogs for good achievement in mathematics, kids about his age and his birthday in a general attempt to establish good relations with the group, e.g. "My mum wont let me watch R rated movies." and later DT : "It's my brother's birthday tomorrow and he's 5 years older

than me -he's 23."

For mathematics lessons this homeroom 'lost' 12 students to the more advanced 'set' and gained 6 from JW's homeroom (2 girls and 4 boys). The mathematics class of 24 contained 13 girls and 11 boys, of whom the 6 from JW's group were already known to the researcher by name. By the end of the first week's observations there were 2 boys and 6 girls who had not been named in any of their classes and hence were not identifiable to the researcher. Class processes in this room were similar to the traditional chalk-and-talk approach already described, although there was perceptibly less calling out and fewer questions addressed to the whole group. Raising a hand and waiting appeared to be the standard practice for attracting teacher attention, while at question time the teacher called on individuals by pointing or looking in their direction. Although this group were identified as 'standard' level in mathematics, DT says in a later discussion that in effect this means they're 'not too good' and so they have to be 'jollied along'. (There was a lower 'set' known as basic mathematics - by the students 'vegie maths', but none of the ex-Midstone primary students were in it.) Consequently there appeared to be a conscious use of cautious praise in this mathematics class. Phrases such as "*Yours is improving!*" and "*That's better!*" were recorded repeatedly. The interaction monitoring revealed a pattern of male dominance similar to that found with the previous group (see Table 5.1), although there was less interaction in terms of public problem solving and more set work to be done at the desks. Given the paired seating arrangement in this class it was also possible to register to whom the teacher was attending when he was engaged in the standard practice of going around the class while they were working on a sheet of problems. From the field notes :

Monday : After 20 minutes of class set to work, all 6 boys' tables have had some teacher contact; of the 7 girls' tables 4 have not.

Thursday : 15 minutes of worksheet practice, 4/6 boys' tables and 1/7 girls' tables have had teacher attention.

Tuesday : All lesson spent on worksheets. All tables attended to, but interaction at 3 boys' table was much longer than at other tables.

The pattern was set in this way for the entire observation period. The mathematics teacher maintained his relaxed but work oriented style with the group that he had shown in the homeroom time, but it was also clear that he did not have high expectations of their mathematical ability insofar as the pace of the lessons was considerably slower than that observed in the previous class and nor was there any attempt to recognize any of the group as ones-in-the-know as happened in JW's group. The project in this class appeared to be to make sure that everyone in the group understood the concept and could work out the appropriate answer so there was a good deal of repetition in the set exercises. Girls from this class later in interviews identified mathematics as one of the most boring lessons "because you have to do the same thing over and over!" When DT was also observed teaching the top year 10 advanced maths set the interaction style was markedly different, with a much higher degree of volunteering of suggestions, answers and questions from the class. No doubt this difference could be partly explained in terms of student ability, but the way in which teacher expectation interacted with student ability appeared highly significant as well.

With the homeroom group in other classes than mathematics the classroom interactions are typically noisier and more vociferous, partly due no doubt to significant differences in the group composition. The 12 who left 832 for mathematics were responsible for a good deal of the increase in noise. Some of the quietest spots in the classroom were some of the girls in the mathematics group, and yet others from this group were louder and more often vocal than the girls from the higher set. The geography teacher, LV, was one of the few senior teachers who taught in the junior school. Of a similar age and style to DT, he too adopted a relaxed joking method of attracting student attention and achieving participation. A popular teacher with a confident easy-going style he continually used references to sexuality (and its gendered implications) to control students, for example :

The class are crowding around a notice board to look at test results. Some of the boys are announcing their good marks. None of the girls is doing this.

LV enters and says "OK everybody take a seat. C'mon you 2 fellas, you can hold hands at recess if you like!"

The boys concerned immediately repair to their seats.

and other occasions :

LV, talking to a girl, "So they say get with the strength - but this is hardly the strength is it?" at which the girl smacks him playfully and he laughingly reacts.

LV to girl, referring to himself, "You see it's not just beauty but brains too!"

During geography lesson LV calls Verity 'Grace,' obviously her older sister's name, to which Verity : "You owe me a chocolate frog - everybody who calls me that must pay me a chocolate frog!"

LV, admonishingly, "You'll get puddingy!"

Michelle to LV in Geography, "Oh Mr. V , don't you think we have immense quality?"

LV "What's this? Men's qualities? Oh yes men have quality!"

Michelle, "That's not what I said!"

then, in jest the whole sequence is repeated.

LV was a distinctly popular teacher, and in responding to his interaction style both boys and girls took on understandings of masculinity and femininity and positioned themselves accordingly. While the effect on the two boys who were accused of 'holding hands' was the most dramatic, it was also true that the 12 year old girls actively took up and initiated interactions which were a clear departure from the teacher-student style they had used in the primary school just a few months earlier. The eagerness with which they entered this particular discourse which positioned them as women vis-a-vis an adult male, thereby

enhancing their own status as putative adult, was striking. While some of this sort of joking was present in other classrooms, it was a constant feature of LV's class. In addition to the verbal badinage there were instances of gender stereotyping in the assignation of tasks with this group, already noted in the duty roster. On another occasion LV asked a big boy, Cameron, to carry down the duplicator. When it arrived he borrowed a girl's table to rest it on and then selected 2 other boys to learn to work it. After sufficient numbers of sheets were copied he asked one of the girls to distribute them to the class. From the students' point of view this sequence underlined the capacity of boys to carry out feats of strength and mechanical skill, while the girls were seen to have a more domestic role. In later interviews LV revealed his own understanding of the concept of gender, one in which biology played a dominant role. The point will be enlarged in the section on talking with teachers.

It was in this classroom that the year 8 students evinced considerable antagonism between the boys and girls, as in the following example :

*LV's class. When a boy comes in with notices, LV asks : "Are there any footballers here?", a question clearly directed at the boys. There is a cry of derision from some boys "Yeah, Belinda!"
To which Belinda responds strongly : "Oh shut up!"*

LV chose to ignore this incident. Other accusatory remarks bandied around this classroom included

Girl to girl *"You're a flirt!"*

Boy to girl *"You're only interested in sexual relationships."*

These examples show the year 8s trying out and taking up ways of being within a discourse that relates recognizably to the adolescent true romance boy meets girl scenario.

It seemed to the observer that it was very much a case of trying out the language well in

advance of feeling, a feature which reveals discourses-at-work.

Classroom 3.

In this classroom there are 14 girls and 16 boys, 7 of whom are ex Midstone primary. Once again the ex Midstone primary children are at the same tables, but this classroom operates in grouped tables rather than paired desks. There are two groups of girls, one with 3 and the other with 11. The boys are divided among 4 groups, with a pair centre front, next to a group of 5 and two other groups of 4 and 5 at the back. This classroom is also located within one of the main rows of wooden buildings, and the group stays together as an 'advanced' set for mathematics in year 8. Their classroom is a replica of the one used by the previous group. On the noticeboard at the rear of the room there are lists of duty monitors for bell, windows, lunches, library etc. and these tasks are assigned by the teacher from volunteers. There are predictable gender differences with the girls doing library and lunches and the boys the windows and the bell. Another poster spells out in large letters $A=X+Y+Z$ where A =success, X =work, Y =play, Z =keep your mouth shut.

In many respects experience in this classroom served to confirm the previous observations. The boys dominated the classroom interactions in number and volume, there was infrequent use of students' names and the boys were much more likely to be named than were the girls. Their mathematics teacher, IR, tended to point to a student who had raised a hand, and more than other teachers, IR frequently referred to the gender groups as "Girls" and "Boys". The girls in this class appear as quiet diligent workers, whereas the boys seem noisier. Given the fact that in this room boys are in the majority, there seems to be more competition between them to get attention, proffer the right answer, ask a question. IR made frequent reference to the fact that they were an advanced class and that great things were expected of them. In later interviews the girls from this group were sure that the boys were 'smarter' or 'more intelligent' and tended to downplay their own achievements. As in the other classes observed, the girls' books were often carefully decorated with pictures

and stickers - none of the boys had books like this. Although Midstone High has a set uniform with different coloured jumpers for boys and girls, the girls tended to vary their uniforms in small ways, coloured shoelaces or hair ties whereas the boys demonstrated a uniform scruffiness at year 8.

In many respects the experience of this classroom was more typical of high school classes generally. They had different teachers for each subject and a different one again for homeroom time - 10 minutes each morning. As a group they were together for all their classes except languages for which they divided and were joined by students from the other year 8 classes. The gender differences in classroom interaction were more evident in this group insofar as there were 2 more boys than girls in the group and so the boys' domination in terms of attention getting behaviour was most marked. Some boys from this group revealed in the later interviews that they were conscious of competing with other boys for the teacher's attention and were sure that the prospect of a boys' only class was not a good idea. As Alex put it :

Alex (year 8 boy ex Midstone primary) : You see everyone fights for attention ... but the girls don't normally so much 'n.... all the boys'd have to do everything to get the teacher's ... they'd have to fight so much harder to get the teacher's attention.

Alex's comment revealed a very clear perception of a feature of classroom process that was not shared by many of his peers who felt that everything was fair and equal. The teachers too were inclined to insist that they were not 'sexist' or unduly discriminatory in their attention giving and felt to some degree that their practice was being wrongly condemned by some education department policy writers on the basis of scant evidence. (His use of 'everyone' to mean only boys is another common feature of schoolboy talk which will be picked up in a later section.)

The issue of gender differences in developmental schedules is frequently offered in the

Midstone High School : 5.

educational psychology literature as an explanation for some of the different reactions to schooling (Stone and Church,1979; Cowell, 1981). The popularly accepted understanding from developmental psychology is that girls' development generally commences earlier than that of boys. Certainly the boys in year 8 at Midstone appeared to behave in ways that were more similar to their primary school experiences than did the girls. And the concept of girls' earlier development was referred to by the teachers and the students . It is also possible to see the gender differences emerging as a consequence of cultural experience. For instance, the boys generally acted consistently in keeping with a concept of 'schoolboy' which, in Australian schools of the late 80's, owes more to football heroes than to Billy Bunter, but still retains some of the naughtiness enshrined in schoolboy stories of former days (see for example similarities between the once archetypal Nigel Molesworth, William of the William books and the more current Adrian Mole). The girls on the other hand, in year 8 appear to be caught in some nether ground between child and woman and the concept of 'schoolgirl' is much less clear. To some degree the givenness of the explanation provided by developmental psychology precluded the teachers and students from analysing student behaviour in terms other than "At this age boys are less mature than girls".

While the reaction to being once again 'the bottom of the heap' as year 8 students was taken up differently by girls and boys, as will be demonstrated in section I, talking with students, it seems appropriate at this point to register these differences as they affect the expectations of the year 10 students in the study.

The Senior school : year 10.

The investigation continued with the observation of 2 year 10 classes which maintained the music and languages curriculum of the year 8s. Similar proportions from each class had attended Midstone primary school thus providing an added dimension of comparability. Of particular interest was the fact that these groups were taught by the 2 male teachers LV and

DT who had been involved in the year 8 part of the study. Several of the features already noted in the year 8 classrooms were amplified in interaction with these senior students. Once again the mathematics classes are used to provide a focus against which classroom processes in other subjects are compared. In these year 10 classes, especially in language classes, the girls outnumber the boys by more than 2:1. By year 10 the class groupings are more fluid in that classes regroup for mathematics sets and for language and music options. The result of this is that there is rather less student identification with a particular group or homeroom than was the case at year 8. Coupled with the fact that the year 10 science curriculum is split 4 ways into chemistry, physics, biology and earth science with different teachers for each section it seems that it is not unusual for teachers not to know their students by name. This effect compounds the impersonal dimension that was registered in the discussion of year 8 classrooms as a significant difference from the style of student-teacher interaction in the primary school. Teachers appeared to be more likely to use gender categories when they did not know the students names, in which case phrases such as "*the girl in the corner who is turning around ...*" or "*the three boys by the window....*" and "*still waiting for the boys...*" are a constant feature of the classroom public talk. One feature that was continually remarked about the seating patterns within the year 10 classrooms was that the back row was definitely the favoured position and filled up before the other rows.

Classroom 1.

1007 Advanced Mathematics. DT is the teacher. There are 25 in the class 14 boys and 11 girls. Roughly half of the girls have seated themselves in the front row, the other half are at the back. Boys are at the side and middle of the classroom. These students are diligent and keen, they appear to take themselves and their work seriously. At this level names are used even more rarely than in year 8. The same relaxed but businesslike approach characterizes DT's classroom management style. From the field notes :

1007 Tuesday morning, mathematics. DT introduces a new topic. The girls in the front are more contributive than those at the back. As the questions get harder more boys are asked and more boys volunteer answers. The girls' answers, though rarer, are more often correct. In every case the teacher has nodded or pointed towards somebody with a hand raised - nobody is asked unless they volunteer. After this the class is set to work on a worksheet. The girls in the front row initiate a conversation with DT about the approaching holidays. There is a ski trip planned and they ask if he is going. After giving a prevaricating answer DT says very jovially "But don't let me hold you up ... or distract you from your work."

The following week another new topic - introduced with "*we normally leave this to year 11 or 12 - but it wont hurt you to do it now*". The class look rather puzzled, but are complimented by his declared estimate of their ability. The topic is named "Binary Systems". DT tells a story to effect the introduction :

A handsome boy performs an heroic deed - he rescues a beautiful princess! For a reward her father the king says to the boy "Take out your chess board. On the first square put one cent, 2 cents on the next square, 4 cents on square 3 and so on." At first the boy thought this was a pretty poor reward to be paid in cents for what he had done. However after giving it some thought he realized that in fact the reward was quite considerable. Can you work out how much he got?

In the ensuing discussion it emerged that only boys played chess. Although most students were familiar with the idea of the black and white checked board, the non players were not sure how many squares it contained. DT was standing in between 2 tables of boys when he told the story - these were smiling and nodding at the general line and entered keenly into the calculation. Many of the girls looked somewhat bemused as they waited to be told the answer. Whereas others have commented on the ways in which such treatments can be seen to render girls invisible (Spender, 1982; Stanworth, 1983), the point here is to draw attention to the ways in which girls are positioned in this interaction. While the boys can

join in as their maleness affords them some form of commonality with the 'handsome prince' (even and importantly within the jokey and semi mocking style adopted by DT when telling the story), the girls are alligned with the passive albeit beautiful princess. The princess, in turn, is located vis-a-vis the two male actors as (a) needing to be rescued and (b) being the object of her father's responsibility in terms of his offer of a huge monetary reward. The effect of this positioning, particularly in terms of the males as actors and initiative takers and the female as helpless is compounded by the fact of the shared cultural understanding of this group in which chess was seen as a boys' game. The outcome in this class was that the boys emerged as knowers and doers of binary systems while the girls attempted to find out how many squares there were on a chess board. The calculations involved were within the range of the whole class, but the setting of this knowledge area had clear gendered implications for all the students. The task was constituted as a male appropriate activity by the story and then reconstituted as such by the involvement with knowledge of chess in this environment.

The intersection between the teaching of academic knowledge and skills and the positioning of male and female students in gendered positions through the use of discursive reference to the larger culture was a continuing feature of the classroom experience at Midstone High.

Another mathematics lesson, this time on probability theory, which is introduced in terms of its applications to coin tossing, cards, dice and betting - all of which symbols are enthusiastically recognized by the boys as connoting fun activities. This is not to suggest that the girls have not experienced enjoyment from cards and board games but the boys' more frequent and louder classroom contributions allowed them to appropriate these areas as their own. There is a connection here to the point made in section 2 on playground practice, namely that the playing of games appears to be understood as acceptable (and even expected) behaviour for adolescent and adult males but not for females.

In other classes there were instances of formal knowledge being overladen with messages

about gender roles and sexuality. In an English lesson the 1007 class (8 boys,14 girls) were discussing prejudice, when the teacher, BE, chose to regale them with reminiscences of his own youth, and in particular of dressing up to impress 'young ladies'. Turning to the girls he asked if 'young ladies' of today expect their dates to be well dressed. "*Do you make them open the car door for you?*" Amid much laughter a girl at the back called out "*Some do*". Class members evidently enjoyed this approach in that they participated in a discourse in which they are constituted as sexually aware young adults with the attendant power dimensions.

In French class there is much teasing of one boy whose name "Simon" sounds like the girl's name Simone. (In the language classes names are used routinely as part of the oral practice.)

Classroom 2.

1006. LV is the homeroom teacher here and maintains the jokey relationship with the students he had adopted with the year 8s. There are 9 boys and 16 girls in this homeroom group. From the field notes :

At lunch break 6 boys hang back to joke with LV and, to some degree to contest his directive that 2 of them should sit across the room. The debate involves some show of strength among the boys, who say "The girls'll have to move 'cos we don't want to separate!" to which LV responds "If you two want to sit together and hold hands, why not go ..." The end is lost amidst much public ridicule from the other boys of these two. They become a bit shamefaced and one says "I don't mind sitting by myself - a double desk of course so my feet don't hang out". None of them wants to sit up front, which is according to them the 'greasy' position, but they want and expect support in seating arrangements from LV with whom they engage in an 'all men together' talk about football games and teams etc. The boys end up saying to LV "Well you'll just have to move the girls". To which LV replies "I don't mind moving girls!" and the boy who had commented adds : "Physically .. not

emotionally ..".

In this incident the boys are participating in a recognizably macho cultural discourse in which aggressive masculinity and football are valued, a discourse in which the fact of their maleness affords them entry, despite the fact that they themselves may be neither aggressive nor footballers. They deliberately seek to recruit the teacher to their cause by inflecting some collective masculinity into their interaction. In a way it is an attempt at a reversal of the teacher's normal practice. This, as seen earlier, is to establish a lighthearted patter with some degree of sexual innuendo in which he becomes temporarily an equal player and yet still holds the controlling power. Another example :

1006 homeroom. Interaction between LV and girls at the front concerning two girls who are missing.

Girl : They're in the toilet.

LV : What for? Putting on make up?

Girl : No! having a wee.

LV (heavily sarcastic) : What a good place to go for that!

In this interaction the teacher sought to involve himself in a counter school discourse by revealing that he knew that girls' retreats to the toilet were often masking illegal behaviours like smoking or make up. His manner of doing this was light and joking, representing an attempt to be 'one of the kids'. His informant on the other hand rejected his attempt and gave a crude legitimacy to her friends' departure. LV's sarcasm comes as a response to being put down by the girl informant. The whole discourse is gender laden with its implication that girls may feel the need to put on make up (with the attendant sexual implications) and that they would do so secretly. Also insofar as LV is crossing boundaries of accepted notions of discretion by asking why the girls are in the toilet he invites the crudeness of the reply, and then reconstitutes himself as teacher with the sarcasm.

The maths class for the majority of 1006 is the standard level and it contains 15 girls and 8

boys. The teaching style is once again fairly traditional with a teacher-led demonstration at the blackboard followed by the class working through examples. The teacher, MC, has identified a wide range of abilities in the group and he identifies some as 'really struggling'. After his explanations he asks "*Who doesn't understand?*". This question, which is used regularly in his teaching, always draws some of the girls to admit they don't comprehend. Boys from this group are much less likely to admit to this. On the other hand when asked to speculate about the likely answer more boys volunteer than do girls. This teacher has a kindly approachable style and spends a good deal of time trying to convince several girls in the class that they can do the work. Boys are treated much more cursorily. MC appears to consciously alternate questions between boys and girls, but given the gender imbalance in the class, this means that the boys get rather more than their fair share of teacher attention. It is immediately evident that there is a much higher proportion of girls in this class than in the advanced class, a situation which is consistent with the picture of mathematics enrolment throughout the school and indeed nationally.

In general the impression of the year 10s being more 'mature' than their year 8 counterparts was clear. The boys at year 10 appear to have developed from the schoolboy/child image of the year 8s into a more recognizably 'student' posture which still retained some aspects of the 'mucking around' predilections of the younger boys. While the year 10 girls appear more comfortable with their student role insofar as they were less inclined to resent the boys' dominance of attention and space than at year 8, they were still not sure how to conduct themselves in feeling disaffected with school. Some chose a conscious rebellion which involved the adoption of a recognizable and recognized sexual maturity (such as would once have been called a 'reputation') while others chose retreat into the quiet diligent student model that was available to girls right through school in ways that it was not for boys.

E. Talking with teachers.

Many of the teachers who participated in the study were keen to have an opportunity to discuss their teaching philosophies and positions especially with regard to girls and mathematics and girls' education generally. One generally held view by these teachers was a respect for the notion that theirs was an academic school and that their job was to facilitate learning and develop the potential of their students in their particular subject areas. Given that the group of students in these classes also adhered in general to this position, and responded to their teachers' public declaration of these values as in *"Now we're really working like an advanced class!"* or *"I think you people can cope with this, even if it is usually not attempted until year 11 ..."*, the process of schooling in this environment could have been expected to have been relatively unproblematic. Talking to these teachers about their response to the issue of gender in education proved this not to be the case.

All the teachers interviewed registered concern about the issue of girls and education, girls and mathematics. In addition most of the teachers involved in the study identified the focus classrooms as atypical. As has been noted there is some truth in this statement insofar as the groups observed contained higher proportions of girls although the overall student body was heavily male dominated, the classes were mostly music students which constituted them as a special group and also carried implications for the social class origin of the group. While all of these features made the experience of these classes relatively unique, the teachers' insistence on the atypicality flew in the face of their own generalized propositions about males and females which they were quite ready to discuss. The contention of atypicality appeared to fit solidly within the ideology of individuation - *"these classes are not typical"*, *"each student is unique"*, *"I treat them all as individuals"*. Although the Midstone High teachers rarely used individualising classroom treatments common in the primary school (such as the teachers' constant naming, reference to knowledge of family background etc.) there was still a general insistence on the uniqueness of each classroom experience, generated by the particular conformation of the classroom group and the individual teacher.

There were aspects of school that the teachers were prepared to see as generalizable propositions, however. The most immediate of these concerned subject areas. The mathematics teachers' responses to the issue of gender tended to be in terms of the importance and value of their subject area and the opportunities open to girls who kept on in mathematics. For these teachers the importance of the subject area, mathematics, was a self evident truth. To some degree the research question further validated this position. As mathematics faculty they were conscious of their valued position within the school which was, as previously noted, committed to high academic achievement. Consequently, the issue of girls and mathematics was seen by these teachers as not a problem of the mathematics nor of the schooling process per se, but rather as a problem of the girls. There were distinct elements of 'blaming the victim' in the teachers' talk. for example :

JW : I've tried to tell them they're lucky if they can cope with mathematics and that they should keep doing it to year 12 as it will help them to get into whichever course they may want at university. But it seems to go in one ear and out the other ...

DT : Some of them (the girls) are really good. But they don't strike out for themselves like the boys do. It's frustrating as I know they could if they wanted to.

JW : I find that after working at establishing a closer relationship with the students in the early high school years I have different sorts of interactions with the boys and girls on a social basis too. For instance the boys will come to me after class or at recess to ask about problems in maths - and that's great because it shows they're interested and that they find me approachable. But the girls come to tell me about what they did on the weekend and what clothes they like at the moment - they never talk about maths at these times.

Some of these mathematics teachers also brought in questions of school organization and classroom process, but here too the 'blaming the victim' element recurred, for example

JW : For several years I've taught maths at year 8 and also at year 11 and 12. I often get surprised in those senior classes by the appearance of boys I knew in year 8 and considered not very bright - wouldn't have expected to see them in year 12 maths. With girls it's more often a disappointment - girls I've known to be pretty good in year 8 disappear from maths - I've never been surprised by a girl turning up as a good student in year 12 when I've hardly noticed her in year 8 like I've told you about the boys. ... I think what happens in year 10 might be crucial in all this. I've never taught year 10 maths.

One of the year 10 mathematics teachers, MC, was sure that the setting of the subject area created problems in that it reified the students' understanding of mathematics as being hard and only for the bright students as well as confirming for the ones in the lower sets that it was an area in which they lacked ability. There were higher proportions of girls in the lower sets and MC saw them as particularly disadvantaged by the setting. However MC added :

MC : Of course the girls in the lower set don't try very hard. They're content to accept the lower status maths because not so much is expected of them.

Others saw the issue of girls and mathematics in terms a fairly vague psychological theory of gender difference, for example :

DT : I try to stir the girls up a bit, to get them going you know - they try harder if you kid them along a bit. Some of the women staff don't like the way I jolly the girls along, but I think it works. I've had some very good results from the girls at year 12 so I think I'm doing OK.

The mathematics teachers' comments must be read against their position within the school as respected purveyors of high status knowledge. Without the support of being associated with what was automatically seen as a really important subject, teachers in other areas

tended to focus more on situational variables when talking about gender. These teachers were more conscious of classroom behaviors interacting with masculine or feminine qualities in students. Overall the teachers appeared to understand the issues raised by the question of gender in education in terms of either psychological differences between males and females or the sociological issue of schooling and the promotion of equal opportunity to all social groups, or some combination of both of these approaches. For example :

BE (male teacher, year 10 English) : The girls dominate in this group (said with a certain pride). They're very able. Of course the reverse is true in some other groups. If you want to observe male dominated classrooms you should look at 1016. That's where there are a large number of Greek and Italian boys and they give the girls hell. Of course none of them is as bright as the students in this lot ...

In this quotation it is clear that the issue of gender is automatically seen as a problem and then recast in terms of cultural understandings more associated with particular cultural groupings. In this way gender had become a "social problem". Others opted for more psychological explanations such as :

AB(female senior science teacher): Year 11 is a turn off for girls. Up till then their conscientious diligent behaviour pays off, but when they are asked to use their initiative they can't do it. My year 11 girls often tell me that noone has made them work like this before. They don't like it and they're not very good at it. The boys are much better at figuring things out for themselves.

One of the most striking contradictory aspects of the teachers' positions was the way in which on the one hand they were committed to a position which espoused equal opportunity and social justice and was opposed to 'sexism', they managed at the same time to hold and transmit understandings of psychological gender difference grounded in a biological determinism. For example, in a discussion of boys and girls and attitudes to science, the following comment was recorded:

LV : It wouldn't be right to pretend that they're all the same . I see this clearly in my own kid. He's only 4 but he's really interested in that space lego and loves to play with it. When the little girl next door comes in she's not interested at all, even though she's a bit older than my boy and probably could do more complicated things with it. But she just doesn't want to know. You see the same thing here in year 10 and 11 Physics and Chemistry - by and large the girls aren't interested.

On another occasion LV asserted that the mathematics and science subjects should have precedence in terms of timetabling (which they did) because "*After all we live in a technological age.*" LV appeared unaware that this bland assertion coupled with his previous position with regard to males and females having 'naturally' different proclivities in these areas should surely lead to different provisions within school to achieve equality of opportunity. Such a focus on difference was disallowed as it contravened a popular perception of equality and justice which was seen to imply sameness in terms of provision and treatment. All the teachers were sure that *sexism* was an evil to be avoided, and they seemed to understand *sexism* as the provision of different or preferential treatment. After the incident reported in the previous section in which two boys were objecting to being moved to a different place in the classroom and in which both they and the teacher participated in a discussion which was strongly inflected with male cultural discourse by references to physical size, football and sexual potential, LV approached the researcher explicitly to make the following point :

LV : It's not sexism ... they're not like that! It's just about territoriality and power ... they want control over the classroom space, that's all ... it's not sexism ... I'm their classroom teacher, you see, that's why they're so familiar with me.

In this example LV appeared to be unaware that the issues of territoriality, power and the domination of space are central to analyses of sexual inequality and hence sexism. Instead

he chose to interpret sexism as the explicit downgrading of the female person and insofar as that had not happened in the above example it was not sexism. His speech, which was delivered as a monologue with no contribution from the researcher, was followed by a lengthy admonition to *"Throw out all your theories here. It's not a typical class ... not a typical school for that matter."*

Classroom researchers have frequently reported their frustration at finding the one typification of life in schools which does hold true is that there is no such thing as a normal day. To have a classroom with everybody present, which in the high school environment means teachers as well as students, to have a time table free from those lightning changes so frequently encountered connected with concert rehearsal, sports practice, long assemblies, staff meetings etc. is an exceedingly rare experience. The constantly changing aspects of the daily experience at high school work to mask some of the generalizably true features of that experience. It is the contention of this thesis that gender construction, albeit in different forms with some more explicit than others, is just such a continuous feature. The Midstone High teachers appeared unaware of this aspect of their schooling practice. It could be that as a result of recent publicity about the importance of the girls and education issue the teachers' need to understand that they were not operating in ways that could be seen as *sexist* precluded them from seeing what it is they are doing. Their understanding of sexist practice appeared to be treating males and females differently. Like the primary teachers they held to a position in which proper and equitable teaching practice meant to treat male and female students the same. At the same time there were interesting variations within this position, for example, LV who believed in the innate intellectual sex differences proposition also believed that his role was to dispense even treatments in teaching. DT was another case in point in that he believed girls' psychological makeup was such that they needed 'jollyng along', although he contradicted himself in that he claimed to treat the students evenly too. JW's position was that she believed that 'something' happened in the middle school years that affected girls' participation in mathematics learning, but she was not sure exactly what. These and all of

the teachers interviewed placed themselves outside responsibility for gender differences in learning outcomes.

F. Knowledge and the curriculum.

In general high school knowledge was seen by the students as more serious and significant than what they had learned in the primary school. Both boys and girls from the year 8 groups said in interview that they had 'learned a lot' in their first term of high school. Whereas some of the girls were inclined to regard their higher level of learning as somewhat daunting, all the boys spoke approvingly of this development, for example :

David : This is where you really have to start to work.

Greg : There is more depth in the subjects here.

Lucas : I like high school better because it is more work oriented, not busy work like primary school ... and you have to be responsible for yourself.

Tom : In primary school the stuff we did was pretty simple and boring ... here it's heaps more complicated and it gets you interested.

In these examples the boys are responding to what they see as the challenge of high school in ways similar to their responses in the classroom when a new topic was introduced. The girls were much more cautious and critical of the teachers' apparent lack of concern. The perception of these year 8s of their likely progression through high school highlighted the gender difference noted above, as in :

David : The work we do now .. it's just a drop in the ocean compared to what we'll do in year 11 and 12.

compared to Joanne : I'm dreading it ... all the more work.

The compartmentalisation of knowledge which was seen to commence in the primary school is further developed in high school with the division of the day into time slots each

associated with a particular subject and often as not a different teacher. The separation of knowledge is important in that it prepares the ground for some subjects to emerge as more important than others. Midstone primary students had already identified mathematics as 'hard' and 'serious stuff' and this connection was confirmed on their entry to high school. On their first day at Midstone High all year 8 students undertook a mathematics test and were classified into a set labelled as 'advanced', 'standard' or 'basic' on the basis of their performance in that test. No other subject area was treated in that way. Classes were generally described in the junior high school as unstreamed or mixed ability. By the senior school particular subject clusters were unofficially understood by the students as indicating much the same group differences as were once identified as A stream. The setting in mathematics classes from the commencement of high school proved a precursor of the more general hierarchies of subjects which were later established. Whereas all the year 10 girls in the focus group indicated they expected to complete year 12, they were less sure about their choice of subjects and tended to insert the proviso 'if I'm good enough' if they elected to study senior mathematics. Of the boys who intended to complete high school, all planned to study mathematics to year 12. None of the boys hesitated about their ability to do this.

As noted earlier the importance of mathematics and science was further emphasized by the prominence of these subjects in the timetable - at both year 8 and year 10 there were more classes per week in mathematics than in any other subject. The intersection between the knowledge hierarchy and perceptions of gender stereotype was continually evident in student interviews as well as previously detailed instances of classroom treatments. In general the Midstone High girls perceived the boys as more able within the terms valued at the school. In year 8 the perceptions of the boys' superiority are couched in general terms, as seen in the following conversation with four girls from year 8 :

Melanie, having asserted that boys are smarter, adds : It's only boys that got straight As - no girls have.

JG : How do you know who has straight As?

Melanie : Oh they brag ... as soon as the reports come out they shout about it.

Jane : You can tell by their personality ... they're smart and they concentrate more.

and from a different group,

Jill : Boys are brainier .. one got straight As ... in class they're giving the brainy answers ... they've always got the answers.

The issue of having the answers was a continuous feature of the girls' perception of the boys' abilities and relates directly to considerations of who is allowed to air knowledge in the classroom. Talking to three year 8 girls who in the previous year at Midstone Primary had insisted that everyone was equal, produced this picture :

Ria (thoughtfully): Girls try harder. Boys have more intelligence ... they're bright but they don't try as hard as the girls.

JG : How do you know?

Ria : Because they are ... the way they talk .. the way they can answer questions, the way they can work out problems ...

Sandra : Yes.. they haven't been studying it or anything .. but they just know the answer.

Talking with another group of year 8s about rank in class brought the following :

Sue : The highest in the class would probably be a boy ... and the lowest would be also. Girls are in the middle.

Vicki : Yeah, boys are either top or bottom .. girls are more normally in between..

The boys in year 8 were also of the opinion that boys were intellectually superior and that girls had particular problems with some subjects, for example

James, responding to "Do you think boys are better than girls at some subjects?" said :

Yeah, girls are not really mechanically minded ... they can't get the hang of tech studies...

Steve : Most of them can't ... but the girls are smarter than us now 'cos they're ...

*Tom : Oh shut up Steve, that's a lot of crap! They all say that they mature faster than us ... but it's only their **bodies** that mature faster .. that's all!*

Tom's assertion is particularly interesting in that it shows that the students were aware of the tendency of girls to mature earlier than boys. Although the teachers tended to associate this developmental fact with different behavioural style, these students, and Tom in particular, raised the question of whether physical development meant intellectual development. And as far as gender is concerned the distinction between biological sex and socially produced gender becomes thoroughly blurred in adolescence. The question of to what extent the physical changes of adolescence, most of which relate directly to sexual functioning, are associated with changes in intellectual and emotional responses remains a matter for research and speculation. One effect of the general understanding of adolescence as a time of important physical changes that can affect young people in a variety of ways appeared to involve a regrouping of understanding about the sex/gender question. Whereas in the primary school teachers and students appeared to operate from a position in which gender was socially constructed, in high school there appeared a renewed tendency to understand gender behaviour as a consequence of biologically given sex.

By year 10 the impression of male intellectual superiority was more closely associated with particular subjects, as in

Julie : Normally in Chemistry or something like that if you don't understand it ... and it's so logical to them 'cos they know it ...

JG : But why would they know it and you not?

Julie : Because they like that sort of subject and girls may not like it ...

JG : Do you think that they have more general knowledge than you?

*Julie : No, we might know things they don't know but it's not **subjects**...*

Leah : They might not know more than we do, but they think they do ... they go on as if they do..

Julie's perception that the knowledge areas valued by the school were also knowledge areas in which boys were seen to achieve demonstrated an awareness of the gendered implications of curriculum constructions of which many of her teachers were unaware. Leah's comment registering behavioural differences was echoed by other girls at this level too. Again with a different group of year 10 girls, :

Justine : Boys are better at the sciences.

JG : How did you get that impression?

Justine : Oh, they seem to know what they're doing ...

Sarah : They put their hands up more often.

Justine : Also they're more interested in science than what girls are.

JG : Do you think that boys hog the attention?

Kym : Not really .. but they try to ..

Sarah : Yeah, they try to. Depends on the teacher ... and the boys ...

Kym : It's sort of like girls are better at school in primary school then boys are better in high school ...

Justine : But that's all it is in primary school ... good behaviour and neat books..

Sarah : Yeah, when girls get to high school they just lose interest ...

The penetrative awareness of schooling effects demonstrated by the girls in this excerpt was offset to some degree by the ways in which they had taken up aspects of teacher ideology. In earlier years the students had rejected the suggestion that there were 'girls' subjects' and 'boys' subjects', but by year 10 the connection between boys' ability and science appears to be so much in keeping with their experience as to be irrefutable. At the same time the issue of attention getting is reconnected with the understanding that schooling ought to be fair and thus the response indicated that although attention seeking was a part of

male culturally conditioned behaviour, with competent teaching and a reasonable degree of student cooperation inequities in attention seeking should not happen. In Sarah's final comment there are elements of the 'blaming the victim' explanation that were prevalent in the teachers' attitudes noted in the previous section. The problem was not with the system but with the girls. The situation is again reminiscent of Bourdieu's contention that the school must be seen to be operating fairly in order to effectively accomplish its real mission which is to sort students into structurally preordained social categories. At one level the speakers in the excerpt above reveal a picture of an education system which operates in terms of dispensing knowledge at different levels in different ways. One outcome is that the group who had achieved highly during the time in the less important knowledge areas are led to understand through later experience that their successes were relatively unimportant and that when knowledge really counts their group is progressively less likely to be successful. Educational discourse operates in ways which mask this effect, either by explaining the different outcomes in terms of individual psychology - girls not trying hard enough, or losing interest, or else in terms of social awareness. All of these features are at play in the above segment and the speakers attempt to describe their situation in language that carries within it other sets of meanings.

The perception of girls' schoolwork being seen as good in the primary school years but not in the senior high school years was shared by the year 10 boys. After the question "Are there boys' subjects and girls' subjects?" drew the familiar response "Yeah .. boys are good at sport and girls aren't!" the conversation continued with

David : Girls are more into decorating ... they're neater in their schoolwork ..

Jeremy : You don't find guys doing that sort of thing ...

Brian : Yes ...you crawl for marks in primary school ... but now the teachers don't take much notice of that sort of thing ... now it's how well you can think...

To which the others nodded their agreement.

In this conversation the boys position themselves as outside the trivial superficial primary school strictures about tidy work beautifully decorated, seeing that as a girls' area. For them it's the intellectual mastery that is valued and that is what is required in high school. Here the interaction between gender associations and schooling structures is most evident.

In terms of their experience of knowledge structures within the curriculum the Midstone High students appear to be interpreting that experience in ways which incorporate understanding that boys are more intelligent and thus more equipped to master the highly valued subjects such as mathematics and science in concert with the understanding that schooling operates fairly and options are open to all. The striking feature of the student perceptions is the way in which they reflect and refract the teachers' reading of the same phenomena.

G. Sport at Midstone High.

The clearest arena of school produced gender differences concerned organised sport, a feature already familiar from the analysis of the primary school. In many respects the high school experience could be seen as a clear continuation of primary school practice. From year 8 there was significantly more attention given to organized sporting activities for boys. While there was a noticeboard entitled Women's Sport in the junior high school main wooden building, it was immediately evident that there were few current notices pertaining to sporting teams and there was a good deal of empty space. Around the corner, the noticeboard entitled Sport (not Men's sport!) was liberally covered with lists of teams, training times and scheduled events, all of which were for boys' only teams. The daily bulletin which was read out each morning during the homeroom time consistently carried information about boys' sporting events, team support functions and records of wins and losses. Boys' names were much more frequently recorded and hence read out than were those of girls. Organized sport in the high school carried on the process begun in the

primary school of affording boys a significantly higher likelihood of becoming a public figure than girls.

All classes participated in a physical education program which was designed to provide experience in all types of physical activity. Although mixed teams were the accepted routine in the classes observed there was a clear tendency for boys to 'put themselves on' other boys and girls on girls if the game allowed. So a structure of segregation flourished within the official mixed organization, which was evidently understood but never commented on by the teachers or students involved. The P.E. teachers working with the focus classes (one male teacher and one female) reported finding difficulty in maintaining girls' interest in physical activity and reported a marked decline during year 9. The teachers explained girls' lack of enthusiasm for P.E. as a consequence of their self consciousness to do with physical development, an explanation grounded in a fairly loose psychologizing of the issue. The girls explained their lack of enthusiasm for P.E. by reference to the washroom facilities. There were showers available for students after these lessons but as there were no doors on the cubicles the girls didn't use them as they felt embarrassed by the lack of privacy. The girls were consequently reluctant to engage in vigorous activity which would lead to later discomfort. These teachers appeared very ready to understand the observable gender differences in physical education in terms of adolescent psychology within which the boys were seen to need to '*show off*' and the girls were '*self conscious about physical changes*'. Given that the teachers saw the issue to lie in a realm that was out of their control they expected and accepted the differences - and in so doing facilitated the students' understanding that this was acceptable practice. Organized physical activity was thus one way in which the students were constituted as gendered beings within the practices they themselves adopted.

The male P.E. teacher (JO) proffered an additional explanation for gender differences in participation in physical activity, namely :

JO : Of course it's also that boys don't mind making fools of themselves, whereas girls do.

There are elements of the boys' capacity to offer answers that may be wrong, to take risks, to attempt new tasks, to 'have a go' which are approved features of learning behaviour and which are constructed in the school environment as male appropriate. Girls who offered wrong answers, who were seen to fumble the ball in team games quickly met with derision and scornful laughter and withdrew from the scene, whereas a boy would appear to relish being the focus of attention even if the setting was less than glorious. Thus 'making a fool of yourself' can be seen to fit in with the jokey non-serious game-playing aspect of schoolboy culture. The schoolgrounds at recess and lunchtime provided a perfect arena for this aspect of schoolboy behaviour. The girls, on the other hand, were denied entry into the boys' routines and at year 8 were left to cluster around the classroom steps talking about what to do.

There were issues within the organization of girls' sport which are important here too. The girls reported in year 8 that there was in fact very little opportunity for them to engage in organized sport or team events. In addition they stated that their parents were reluctant to allow them to travel home after practices as it meant in the winter months at least that some of them would be getting home in the dark. The majority of students lived within a walk or a bike ride of Midstone High, and yet the parental worry about being late home was spoken of many times during these interviews. Evidently it was a concern shared by all girls even though only a few needed to use public transport. There was no doubt that in nominating this factor they participated in a discourse which positioned them as sexually vulnerable young women. No boys had mentioned problems with getting home late, and nor had the girls a year earlier when they were at the primary school. Female vulnerability was part of the new learning associated with being at high school.

School sport is usually hailed as an integral part to a well rounded curriculum and participation in sport, 'playing for the school', is a well recognized way of developing school spirit and gathering the student body together. At Midstone High because 'playing for school' was so much more likely to be a part of male student experience than that of

females, organized sport became a way of positioning the boys as the whole school. All boys qua boys could identify with the success of the football team in ways that the girls could not. And yet by being there as part of the unrecognized body of the school the girls by their presence reenact understandings of female appropriate behaviour which in this instance is to provide an audience. Thus sport fulfilled a key role in the school's unofficial project of gender construction.

H. Midstone Primary to Midstone High : some points of comparison.

At the end of the observation period the high school students participated in some written tests, some of which became the basis for the later interviews (see Appendix II). In interpreting the answers given to comparisons between high school and primary school, special attention was given to the 20 scripts from Midstone Primary. However in many respects these students answers were replicated by students from other primary schools, reflecting the shared class location of students in these classrooms.

More girls than boys described primary school as preferable to high school. In part this was associated with a feature already noted in section F, namely that boys were more likely to respond positively to the experience of more and harder work whereas girls said they were worried by the prospect. There was general agreement that primary school was more casual whereas high school was stricter and more organized, especially in terms of time table and homework. In addition girls were much more prone than boys in the later interviews to complain of the impersonality and lack of closeness they experienced with their teachers. Some year 8 girls' comments :

Verity : He doesn't smile enough .. he only smiles at other teachers ... it's sort of like having a wall between him and the class...

Joanne : There's no real initiative ... there's nothing to look forward to in high school ...

no reason to work hard here ... but in primary school if you work hard there's a reward like an early minute or a fun lesson ... here it's always the same set timetable.

Kate : When you're at primary school you don't realize how good it is until you get to high school ...

Kym : I used to look forward to high school .. now there's nothing to look forward to ..

The girls frequently reported a sense of frustration at not being able to work out quite what was expected of them both inside and outside the classroom, along with a strong sense of needing to maintain their dignity. For example, one girl's experience of processes in mathematics :

Cherie : He (mathematics teacher) says "Have a look at it and if there are any problems come and see me" ... so you look at it and you think "I can do it" and then you go away and you can't do it. Then he goes around the class looking for answers. And if he gets to you and you say "Well I didn't understand it" and he says "Rubbish!".

JG : You'd hesitate to ask, would you?

Cherie : First you look at it and you think "I can do those" and then you think "How did this really go?"

In this example Cherie gives a careful account of how she experiences learning and it is this experience that is disallowed by her teacher. From the teacher's viewpoint the realisation that you either can or cannot perform a particular operation should arise immediately from "having a look". Cherie explains that it takes her some time to work out that she can't do it. Given the teacher's instructions Cherie is in a double bind for not only can she not do the exercise but she also has been mistaken in her estimate of her ability at it. In Cherie's experience it was acceptable in primary school to admit you couldn't understand at any stage in the learning experience. One of her problems with high school is that you're supposed to realize this only at the beginning.

Other girls spoke of a feeling that they mattered more in primary school :

Sandra : At primary school every time I was in trouble I felt so naughty ... but here I just feel stupid when I'm in trouble.

Joanne : Nobody knows you here - it's like you're just another number.

Ria : There's a big change from primary school. The teachers aren't so interested in you in high school.. it's not such a close relationship. They're just doing their job ... but last year my teacher was more like a mother.

Sandra : You're not as close to the teacher ..'cos they've got so many kids to teach ..

Conversations with the boys revealed a generally more positive and less critical attitude towards high school :

Toby : Primary school seems pretty weak compared to high school.

in which they replicate attitudes found in a British study:

"The first year boys want to leave the practices of primary school behind" (Walden and Walkerdine,1985,p.81).

Both boys and girls nominated the fact that there were "no little kids to bother you" as a positive feature of high school. However whereas some of the boys appeared to relish a newfound freedom in being in the lowest grade, as in :

Jonathan : Here it's fun being the smallest ... last year we always got blamed for trouble.

the girls appeared to find this low status a problem. Natalie reported feeling 'looked down on' by the bigger kids and remarked "*You'd think they'd never been in year 8!*".

The overall impression from these students is that the move from primary to high school appears to confirm boys' understandings of the world of school and their gendered positions within it in ways that are consistent with hegemonic masculinity and school

culture. However for the girls the transition appeared to mean a disruption in their understanding of themselves and appropriate school behaviour. For the year 8 girls in the study, high school presented a new problem to be solved, one in which they were not sure they had been given all the clues. By year 10 girls and boys appeared to have reached a more shared perspective of school culture, and the picture was one in which there were gender distinct ways of being. This is not to suggest that there was one way of being female and one way of being male at Midstone High - there were many versions of both. But, and importantly, there were certain features of high school experience that were available to all boys as a consequence of their position as males within the school culture and other features were available to girls qua female.

I. Students speaking.

The year 8 girls reported that the antagonistic behaviour of the boys with which they had been familiar in primary school had decreased as they entered high school. Several groups of year 8 girls told of a more friendly atmosphere between themselves and the boys being a feature of their entry to high school. Some of the girls from HD's class in Midstone Primary reflected on the 'terrible' rivalry between the girls and the boys that had operated there.

Sandra : Last year it was like they (the boys) were always trying to be our enemy ... this year you find they are talking to you ..

Kate : Yes, but it's not really a friendly relationship...

Joelle : The boys weren't as friendly last year ... in primary school it was a big deal for a boy to talk to a girl...

The ex Midstone primary students reported that at high school they found that previous friendships gave way to being with new class members. For the girls in particular, given that their behaviour at lunch and recess did not involve mixing with many others, this had

given rise to some bitterness, e.g.

Joanne and Kate (Ex Midstone P.S.) : We used to go across to Cherie and Verity at lunch, but they snob us now so we don't bother going to find them any more.

From the boys in year 8 there were still elements of the antagonism towards the girls, as in

Damon : Anyway the girls don't like us 'cos we're too good for them!

And still in the year 10 boys this feeling persisted :

Paul : Girls are lazy! That's why they don't play games ...

Jeff : Yes, and girls get away with things that boys can't ...

reflecting some of the anxiety connected with gender definition since the primary school years.

The year 10 girls had a different perspective in which they described the separatist behaviour of the junior high school years as 'juvenile'.

Suzanne : The boys don't take too much notice of you till after year 9 .. (to which the others giggle in agreement) .. then they start coming across and talking to you.

Robyn : I think the girls are waiting for the boys to mature a bit. ... to be more equal ...when you get to matric it's more equal ...

These girls were somewhat possessive in their evaluation of the boys in their class, as in :

Valda : The guys in our class have grown up so much from what they were last year ...

Robyn : Yes, we've all been together through year 8,9 and 10 and this year you could notice the change straight after the holidays ...

These year 10 girls had taken on an almost parental role with respect to the boys, as seen in

their attitude of smiling approval at the improvement they described as 'maturing'. It was also evident that the girls were not interested in the boys as sexual partners - "*we don't see the guys from our own class on weekends - it's the older ones we're more interested in*", but their position vis -a -vis their male classmates called on other aspects of gendered roles, namely the guardianship role as evidenced in the above quotations. The moral guardianship they had assumed and been assigned in the primary and junior high school in terms of providing exemplars of good classroom behaviour, neat work and abiding by the teacher's rules had by year 10 changed into an ethic of care which positioned them still as more mature and concerned for the boys' wellbeing.

The impression is also of the girls reacting to the changes in the boys, adopting the position of onlookers or audience rather than seeing themselves as potential initiators of change. This feature is further confirmed in the following excerpt from a discussion of playground behaviour with the year 10 girls :

JG : I've noticed that at lunch and recess the boys always seem to be playing ball games on the oval and the girls are sitting around on the grass. Do you agree that this is the case?

Samantha : It's what happens ... but it's not necessarily what should happen ...

Robyn : Girls from other schools wonder why we don't get up and play with the guys ...

Valda : I'd love to ... it's not that we couldn't ...it's just that we don't ...

Samantha : They (the boys) wouldn't care, I don't think ...

Robyn : Some of the guys wouldn't want us to ...

JG : Do you think that this sort of separate behaviour of boys and girls is just a feature of this school, or of all high schools?

Robyn, Samantha, Valda (chorusing) : Nah ...it's all high schools.

This last point is important in that it reflects the girls' understanding of gender differences in playground behaviour to be not merely a product of the particular set up at their high school but rather as part of a general response to schooling, a response they participated in,

even though they neither necessarily enjoyed or agreed with it. At the same time they recognize that their behaviour is not brought about by external factors such as school rules, against which rebellion might be an option, but rather that they are complicit in the adoption of such behaviours "*it's not that we couldn't .. it's just that we don't ..*".

A consistent theme in the year 8 girls' accounts of their high school experience concerned their finding recess and especially lunchtime boring - by which they meant not having anything to do, for example:

Tania : Nothing's organized here ... they think you're big enough but we're not...

Marina : Yeah .. it's boring at lunchtime and recess ... nothing to play on ... I mean we don't want swings and slides like little kids, but there ought to be something for us to do.

Melanie : At first I tried to get playing games .. I brought a ball to school .. but noone would play any games ... they just said to sit down.

Another girl was also dismissive of the boys' behaviour at these times, saying "the boys just catch a ball ... it's boring".

In response to direct questions about how you spend lunchtime and recess the year 8 boys unhesitatingly said '*oh play footy*' (even though this activity was not universal) and the girls offered '*read a book*', '*sit on the steps*' or '*talk with friends*'. Again the boys used the term '*everyone*' when they were referring to all boys, whereas the girls used '*we*' when they were referring to a small group of girls. Such language usage connects to different positionings within the school culture, with '*everybody*' implying a public dimension whereas '*we*' carries with it privatised meanings. Certainly such differences were immediately evident to the observer in that boys were highly visible in the school grounds at lunchtime and recess in ways which girls were not.

At Midstone High the students' behaviour at lunch and recess was linked to the official school curriculum by the participation in organized team sports and the physical education

classes. All the students interviewed nominated 'sport' as an area of clear difference between boys and girls at school, and the understanding was that physical activity was an area in which boys excelled and girls did not. Speaking of girls playing hockey a year 8 boy said : "That would be in a P.E. lesson", as though such would be the only occasion it would happen. By year 10 the boys were judgmental of the girls in what they saw as 'laziness' as the reason for girls' avoidance of physical activity. By this stage the boys assumed a moral superiority about the issue, but like the teachers the boys saw the problem as produced by the girls rather than the total situation in which they too played a part.

By and large the issue of sport and physical activity emerged as important insofar as it allowed for connections between the official school curriculum and the unofficial student behaviour at lunch and recess. It also is an area in which 'natural' physical differences are constructed to have 'natural' gender implications, with the identification of maleness with physical prowess and the association between femaleness and lack of strength. This may be less important for the gendered positioning of students than the associated attributes of display and risk taking in terms of learning. Through their position in terms of sport and physical display the boys experience themselves as public performers in ways that girls do not. Inside the classrooms the boys' domination of the airwaves can be seen as another aspect of their being public performers. None of the girls interviewed was aware of the boys' taking a disproportionate amount of the teacher's time. The girls thought the boys answered more because they knew more or because they were brainy enough to think up tricky questions. As both these attributes, knowing and being brainy, are entirely in keeping with accepted and indeed valued school behaviour, they were not interpreted negatively by either the girls or boys in the study. However there was another aspect of classroom behaviour that the girls did regard as offensive and that was in terms of the boys' maintaining their right to control humour in the classroom, and to dispense ridicule.

Naomi (year 10) : They (the boys) don't like anyone making jokes apart from them ... if anyone does .. they sort of go on about it ...

Anthropological studies have revealed ways in which in certain social groups humour is used as a way of males maintaining power and control over females, a feature of some analyses of classroom experience as well (Riddell,1989).

A group of year 10 girls who agreed that the work was much harder this year also noted :

Rebecca : And you don't want to ask a question in case they say you're stupid or dense or something ...

JG : Do you really care what they say?

Rebecca : Well it depends how they say it ... they always hang around in groups ... teachers don't think anything about it but..

Sue (chipping in) : And they're a big group ..

JG : But I've noticed in some of your classes there's only about 7 or 8 boys ..

Rebecca : Yeah .. but it's how they operate, they sort of line up against us ...

The girls here described their hesitation to put themselves at risk in the face of potential male disapproval or ridicule. The boys' behaviour can be seen to bring together aspects of male student behaviour noted in earlier sections - their assumption of right of control over classroom contributions, their capacity to act as a group of 'everybody' and their taking up a position of oppositionality to the girls. The important feature of this behaviour is that it becomes most explicitly an impediment to girls' learning if the boys are effective in preventing girls from asking questions.

J : Summary.

The student experience at Midstone High School may from this account appear as a

disjuncture from the experience of Midstone Primary School. There are important ways - which carry gender implications - in which high school classroom processes are at odds with what has been learnt at primary school. At the same time there are also important ways in which high school builds on primary school learning of the world of school and of how one may operate within that world. Walkerdine (1981) suggested that gender construction thrived at the intersection of competing discourses. It is the contention of this thesis that the confirmations and contradictions embedded in the transition from primary to high school work to produce and maintain gender distinction in students' understanding of themselves and the world of school.

Whereas in the primary school the students had registered the importance of males as more powerfully positioned within the institution as principals and persons with schoolwide responsibility, in the high school the situation was more blurred. Students got to know their teachers as individuals (a reversal of primary school ideology in which teachers were teachers and students were individuals) and spoke of their individual characteristics :

"Mr. R. ... he really cracks when something gets damaged like a ball through a window or something like that .."

"Oh Mr.T.'s OK really, he just sounds like he's angry more'n he really is ..."

"That Mrs. S. is hopeless - she never knows what's going on ..."

The nurturant aspect of teaching as exemplified by some of the female primary teachers - and understood by the students as a significant aspect of primary school culture - was replaced in high school by a more businesslike orientation. Midstone High was about the business of learning and the students responded to and evaluated their teachers in terms of their effectiveness at this business. The range of teachers to whom they had access - 10 out of 100 in year 8 - disguised the systematic positioning of males as more powerful. Assemblies were rare and thus they did not experience the regular exposure to men in charge that had characterized their primary school experience. At the same time the

processes of individual classrooms allowed for different student responses to male and female teachers . The lighthearted banter and sexual innuendo that characterized classroom interactions in some of the male teachers' classrooms was not observed in female teachers' classrooms. Whereas in year 8 the girls responded positively to the male teachers' patter, the year 8 boys resented it and felt that they were overlooked,

Andrew : Yeah the girls are treated special ...

Jason : Like Mr. T. ... he puts his arm around them sometimes when he's helping them with work... .

The point here is not whether or not such contact actually happened but that the boys experienced a sense of marginalisation by the focus of teacher attention on the girls in ways for which they were unprepared, having been accustomed to being the focus themselves. By year 10 the boys had taken up the teachers' mock serious way of interacting with the girls, especially in their use of humour as a control over the girls' behaviour.

In terms of classroom interaction the personal caring style of the primary school in which students were both recognized as individuals and incorporated as part of a group, gave way in high school to a sense of students having to sink or swim on their own merits, with merit clearly equated with examination marks. Not only was there much less individual recognition in the high school classroom, but also there were very few areas in which the students were encouraged to understand themselves as members of the school community. The major opportunity for this latter aspect was through membership of a school team and that was much more likely to occur for boys than for girls. Some of the year 8 girls put their experience of alienation into words "*Here you're just a number!*", while others sought to rationalize the process in terms of the teacher's responsibility for so many students. In general the year 8 boys appeared to enjoy the heightened impersonality of the high school classroom whereas many of the girls missed the closer relationships with teachers in their primary school years. In many respects the boys' responses to high school are in keeping with classical psychological formulations. Anna Freud (1958) saw the central characteristic of this period to be the renunciation of one's childhood relationships and Erikson's

conception of the resolution of the identity crisis during the adolescent stage to involve a separate identity achieved through competition and struggle (Erikson,1968). Theories of adolescent psychology abound with the concepts of individuation and separation. More recently it has been suggested that such theories are more applicable to male development than to that of females. Female adolescent identity , it is argued, is constructed in relational terms and the adolescent period is characterized as providing for a stronger sense of self arising from interaction with and connection to others (Miller,1986; Chodorow,1978; Gilligan,1982). Certainly the girls at Midstone High sought to construct and maintain connections between themselves, their classmates and their teachers along an interpersonal dimension, even in their recollections of primary schooling, much more than the boys. However rather than being seen simply as an attribute of adolescent psychology, the girls' efforts to maintain relational ties can also be understood as a response to the change to high school, and thus to their being plunged into an environment characterized by impersonality and individual striving.

In general the boys and girls in the study expressed positive feelings about moving through the school system as well as registering the differences mentioned above. The girls enjoyed the acknowledgement of their maturity, as signalled by the move to high school, although at year 8 they were unsure of what it meant in terms of behaviour outside the classroom. Within the classroom some of the girls maintained the role of quiet diligent student that they had learned in primary school whereas others were inclined to test out their newfound maturity and the power associated with it by developing strategies of resistance. Examples of girls resisting the impersonal workaday orientation within the classroom were seen in

- * the group of year 8 girls sitting across the back of the room;
- * girls as a group being more critical of schooling processes than they had at primary school;
- * repeated instances of girls' attempting to engage the teacher in discussions of off school topics such as 'weekend' or 'clothes'.

They also entered willingly into discourses that positioned them as sexually maturing, if not

mature. For Midstone High girls sexuality became one way of allowing the realm of the personal to enter into classroom discourse. For the boys classroom discourse also carried strong gendered positions within a culture of hegemonic masculinity which was oriented around physicality - sports and football - and intellectual smartness. However the boys can be seen to be operating in high school in ways that flow from their primary school experience, whereas for girls there is less continuity and considerable change.

The analysis of life at Midstone High reveals ways in which high school becomes a meeting ground between physical prowess and intellectual brilliance, both of which features are produced within a discourse which renders them male-appropriate. The symbolic importance of sport in the school reaches far beyond the educational cliché of healthy minds in healthy bodies or straightforward inculcation of school spirit, such as are usually used as justification for having sport and physical education as part of the official school provision. The argument here is that all the boys in a mixed school that has a strong tradition of sporting achievement, which is reiterated in daily experience and celebrated in assemblies and newsletters, are positioned within the school as public figures in ways that girls are not. Furthermore schooling experience forges a mind-body connection in gender distinct ways which is largely accomplished through the positioning of sport within the school. For boys the observed differences in classroom interaction derive from the different positioning of males and females with regard to the public domain. The boys in the classrooms were seen to become 'everybody' and the girls took up a position identified by Stanworth as 'the rest'(Stanworth, 1983). This is not to see girls simply as the passive victims of the classroom situation, as 'excluded', 'marginalised' or 'rendered invisible', as some of the literature would have it. The girls at Midstone High were aware of the boys' behaviour and were taking up a different position, one which was less vocal and disinclined towards physical activity, as identified in "it's not that we couldn't ... it's just that we don't" . Their experience in the primary school had inducted them into a discourse of schooling in which gendered identity is constructed in opposition to the gender group other than the one to which one belongs, a perspective identified by Davies as one of binary

opposition and male/female duality (Davies,1989). By the end of primary school the Midstone girls were more sure that they were not boys than what it was that they were. Likewise the boys were sure that they were not girls. As a continuation of this discourse of gender opposition, high school produced more opportunities for this construction to be developed, and the sporting arena continued to be an important element in this. The point here is that the girls at Midstone High were actively complicit in positioning themselves differently from the boys along a public/private dimension which affected their behaviour both inside and outside the classroom. Whereas for the boys physicality and body image became publicly celebrated on the sporting field, for girls body image was constructed around sexual attractiveness, experienced by these young people as a personal feature.

Above all it is the connection made between sporting achievement and intellectual ability that is important. Student perceptions of intellectual ability were seen to change during the time in high school. Although both year 8 and year 10 girls said that boys were 'brainier' (and the boys thought so too), some of the girls in the study were recognized as highly able by their female peers as well as by their teachers. The perception of female ability was stronger in year 10 than at year 8, arising in concert with other schooling structures such that if you were still in advanced maths in year 10, if you were known to get As in your reports, if you had 'right answers' when called on in class, you were recognised as bright. Because of features already mentioned the girls seemed to have to prove themselves in this regard more than the boys. Again their less public processes contributed to their being less likely to be noticed. Girls' intellectuality appeared to be constructed within classroom discourse as a secret attribute - something which could be assumed in certain environments (such as the advanced maths classroom) but not revealed in the ways that are seen as appropriate for boys. These differences are sustained by differences in interaction style between girls and boys and are more important than the actual differences. Classroom experience produces boys as public 'knowers' who take up opportunities to question, to suggest, or to challenge the teacher's authority which rests in the power of knowledge. Girls, on the other hand, take up the rules of the classroom in ways which construct an

image of some ambiguity 'does she or doesn't she?'. Her position is of one who probably knows the answers but chooses not to reveal that knowledge, who analyses her responses later with her friends and actively joins a discussion among girls in which they construct and understand themselves as a group. Girls' positioning themselves within a group of peers and boys' standing out from the crowd are constantly reiterated features of classroom experience right through schooling. And as a group the girls resisted the classroom ethic which highlights achievement as an aspect of individuals in the public spotlight. The teachers too were seen to take part in this understanding in that there was a reluctance to focus on individual girls in classroom processes, or to ask a girl who wasn't volunteering 'for fear of causing embarrassment'. Highly achieving girls were identified by teachers in terms of 'you wouldn't realize but ...'

'Being seen to try' was an aspect of classroom behaviour which was consistent with the officially approved orientation. It is also associated with 'taking risks', 'making a fool of oneself' features which have been seen as more closely associated with boys' behaviour than with girls. The behaviours which drew reprimand from the teachers in primary school such as 'mucking around' and 'stirring the teacher' are in the high school context associated with behaviours which connote intellectual ability and are consequently approved.

The different positionings of male and female students in the public realm of 'being smart' were most in evidence in mathematics and science classrooms. It is noteworthy that these subjects deal with areas of knowledge that appear least ready to include the personal, at least in the ways they are currently represented in texts and classrooms. In contrast the humanities - language and history for example - offered more possibilities. In year 8, at which time boys and girls experience of primary school had led them to understand school knowledge incorporating some aspects of the personal, gender differences in their contributions in English lessons were less marked than by year 10, by which time the different orientations had become clear. The year 8 boys participated happily in poetry

lessons which directly addressed the question of feelings, much as they had done during primary school. By year 10 boys' responses were much more in terms of actual content or abstract principles than feelings. In one year 10 English class the boys responded to a lesson on 'To Kill a Mockingbird' developed around a theme of prejudice in terms of abstract notions of justice and the adequacy of the legal system. The girls took up the opportunity to tell of their own experiences of feeling marginalised and their empathy with the central character in the story. The point here relates to Gilligan's work in which she argues that the different socialization experiences afforded males and females in Western culture produces their different orientations to a given issue (Gilligan,1982). Girls, according to Gilligan's theory, are raised in an 'ethic of care', whereas boys are taught to operate in terms of abstract notions of justice and truth. Gilligan does not propose that males and females are constituted in terms of absolute difference. She does say that boys and girls can and do approach problems either way , i.e. that where the rules are spelled out girls can approach moral decisions from the abstract notion of values and boys can adopt the interpersonal caring perspective. However her perception is that, without being guided to operate in particular ways, their experience in the world will orient the girls one way and the boys another, and that the rules are rarely made explicit.

The valuing of abstract knowledge systems as representing higher forms of thought and connoting intellectual power is a feature of high school experience which operates at the level of assumption and is rarely made explicit. Valued areas of knowledge in high school take their position not because they are 'hard subjects' nor because they are associated with males, but because they deal in the impersonal and abstract and are therefore in keeping with valued forms of thought in Western culture - and with rationality as that culture has constructed it (Fee,1979; Bleier,1984; Keller, 1984; Lloyd, 1984). This position is never made clear - the systems of explanations that have been developed to explain knowledge hierarchies centre on issues already noted - intelligence, male dominance, role models etc. But the values of abstraction and impersonality are embedded in the discourse that constitutes masculinity and hence appropriate schoolboy behaviour. And because this

discourse operates within a logic of binary opposition which constitutes the essence of Western rational thinking it appropriates certain features as masculine and in that appropriation represents their opposite as feminine. The young people in the study are not taking up an intransigent position with respect to their gender identity when they say "If the girls do that then we don't". Rather they are participating in a discourse which constitutes the genders in opposition and also positions the male-appropriate impersonal orientation as highly valued intellectual activity. Primary school experience produces the oppositional locations, the high school compounds this distinction by linking male approved behaviour with intellectual merit. The girls' efforts to involve their mathematics teachers in conversation about out-of-school topics such as holidays and weekends was one of the ways in which they tried to minimize or bridge the discrepancy between their 'naturally given' areas of interest and those privileged by schooling. Insofar as some of the teachers cooperated in this attempt they too served to legitimate the impression that girls were really only interested in socio-sexual relationships and not in the academic work of school. For the boys talk of football scores and sporting achievement did not represent a departure from the work of the classroom but was seen as another feature of male-appropriate endeavour that was not available to the girls.

Another area of difference between primary school and high school concerned the positions the teachers adopted with reference to the research topic. The primary school teachers were sure that the girls in their classes were not disadvantaged by their gender and were individuals every bit as much, although perhaps in different ways, as the boys. Midstone primary teachers felt that the girls left their school with a positive attitude to themselves and to school and if anything were to go wrong it would have something to do with high school, which, incidentally, was seen by these primary teachers as a less caring and concerned institution than their own. (This impression was quite clearly conveyed to the Midstone students, both girls and boys, who spoke of their primary teachers as "deliberately getting us scared about high school".) The high school teachers, on their part, frequently explained the 'problem' of girls and education in terms of personality variables

such as girls' lack of interest, motivation, timidity, lack of confidence etc. . These explanations were translated and amplified by the P.E. teacher in terms of the issue of body image, thereby linking psychological attributes with physical determinants.. In classes in which the girls emerged as undeniably the better performers, such as year 10 English, the teachers reverted to sociological accounts of class privilege, coupled with understandings of intellectual ability, to explain the phenomenon of female achievement. All such accounts fail to address the connection between particular subject areas and the power-laden discourses which attend them. At the same time the teachers' explanations reveal the ways in which gender is presented in their professional studies, chiefly informed by understandings from psychology and sociology, and in which their own potential as actors is underplayed. The determinism identified in chapter 2 as residing in the traditional educational disciplines in their approach to the question of gender becomes re-enacted in these teachers' accounts of the 'problem'.

At the same time many teachers appeared to take a professional interest and pride in female achievement - for the maths faculty in particular the outcome of several female students among the high achievers was seen as praiseworthy. There was a sense in which such an outcome was seen as 'against the odds' and therefore signified merit on the part of the teacher who was implicated in the achievement. Such a response further highlights the determinism implicit in the teachers' accounts of girls position in education - to have succeeded despite all. Again Gilligan's argument is relevant. The situation is not such that girls do not or may not succeed in standard educational activities, but rather that these operate within a discourse that runs counter to the one within which they have learned to understand themselves and their position in the world. A pedagogical style in which the assumption of the value of abstraction was made explicit would appear to be more appropriate to and facilitative of female academic achievement. It seems also logical to hypothesize that such an awareness may be more easily achieved in the environment of a girls' school. This question will be addressed in the following chapter.

In conclusion it is argued at this stage of the work that the construction of students as knowing subjects in high school rests on the downgrading of the personal as a schooled product and the attendant highlighting of abstract understandings as constituting important areas of knowledge. The primary school experience at Midstone had shown the boys as taking up positions oppositional to those of the girls and the girls doing likewise. During high school there is a coming together of the boys' understanding of themselves and school within a discourse that privileges intellectual abstraction and public endeavour, whereas for the girls there is a break with what they had learnt during primary school. The 'good girl' behaviours of primary school constitute the girls as other than the makers of knowledge at high school such that their very diligence is seen as indicative of slowness whereas once it had meant success. Their intellectuality, although officially approved, must be hidden insofar as it denies their feminine location in the realm of the personal. This is surely the legacy of the 'bluestocking', re-enacted in daily high school experience.

CHAPTER 6 MIDSTONE GIRLS HIGH

Argument. That the setting up of a girls-only high school places the institution in direct contradistinction to the 'natural' 'real world' emphasis of current pedagogical practices and produces particular and specific problems for year 8 students. That the association between particular subjects and tasks as male or female appropriate continues strongly despite the fact that the student population is all female. That the structure of the senior high school curriculum with its emphasis on interpersonal competition is such that the transformative potential of the all female student environment is not realized. That the girls themselves embody the construction of femininity and female sexuality which they rightly read in contradiction to the official school message. The outside world 'where the boys are' takes on particular and explicitly sexual importance in the environment of a girls' school.

"Give me a girl at an impressionable age and I will make her mine for life!"

The Prime of Miss Jean Brodie, Muriel Spark, 1970.

A. Setting the scene.

As with the two schools previously described, the initial impression of Midstone Girls' is of a school that has undergone rapid growth in that there is a variety of buildings and outbuildings which show the effort to provide accommodation for increasing numbers of students. One school boundary is formed by a major arterial road and the main oval is sited in between the school buildings and this road - most probably a deliberate strategy in that the traffic noise level would make teaching nearer the roadway virtually impossible. The main building is a two storey concrete and glass structure which has spawned several wings. There are several stand alone 'portable' classrooms, and another more permanent L-shaped structure which contains several classrooms and an open corridor cum verandah. Along this verandah and at other sites outside classrooms there are large wooden picnic tables which are usually occupied at lunch and recess by chatting groups of girls - such

'outdoor furniture' was not seen at either of the other schools and seems to condone the girls' practice of gathering in small groups to talk. There are several grassed areas in addition to the main oval, three tennis courts, a large aviary and a broad expanse of paving between the buildings. There is a large carefully fenced swimming pool in the centre of the school grounds, which is sited next to a block of showers and changing rooms. The pool is an important feature of school life at Midstone Girls'. It was frequently nominated by the girls interviewed as a good thing about the school and also as the reason for choosing to come to Midstone in the first place. The general impression of the schoolyard at Midstone Girls' is of one in which there are a variety of things to do and places to be.

The school buildings contain the usual mix of standard classrooms, staffrooms, science laboratories etc. However there is also a school hall which is part of the main building - unlike the separate building of Midstone High. This school was apparently designed with assemblies and performances in mind, and these prove to be a regular feature of life at Midstone Girls'. Another difference from either of the other schools and one which bespeaks the special orientation of this school was the well equipped cooking, sewing and commercial rooms. The physical layout of Midstone Girls' reflects strong and competing orientations within the school that raise central questions about girls and education.

The interior of the main building is characterized by a certain degree of hustle and bustle, especially at lesson change times. It appears that here the students move from one classroom to another a good deal more frequently than their peers at Midstone High, in part due no doubt to the heightened use of specialist rooms. Not only do the rooms with special equipment such as sewing, cooking, science and commercial require student presence but other areas such as languages, geography and maths are associated with special rooms. In the foyer there is a memorial plaque on the wall and a vase of fresh flowers is constantly in attendance. In the preceding year one of the year 12 girls was killed in a car accident and the school set up the memorial at the request of her parents. Each week particular girls are assigned to provide the flowers - an undertaking to which they willingly respond.

There are two staff rooms, both located near the entrance of the main building. One of these is a large bright room with tea and coffee making facilities, noticeboards liberally covered with advertisements and announcements, and a variety of seating arrangements, tables and easy chairs. To one side are some teachers' desks. This room is the scene for informal chat at morning tea and lunch and general staff conviviality. The principal and deputy principals often participate in these occasions. The other staffroom is strictly work oriented; it contains desks in rows and no open area. It is used by staff who do not have specialist offices elsewhere in the school as their workbase, and is usually quiet. Several of the male maths-science teachers were more likely to be found in this room than elsewhere if they were not teaching.

Midstone Girls' High School, like Midstone High, is within walking distance of Midstone Primary. However there are factors at work which produce a student body that is qualitatively different from either of the schools previously discussed. Whereas the Midstone primary students all came from an established middle class suburb, and maintained this location within the larger mixed high school by generally choosing subjects and performing at academic levels that ensured some degree of exclusivity given the way in which the high school structured classes, Midstone Girls' not only catered to a much wider range of student backgrounds, but also was a school committed to mixing students to avoid the situation wherein some groups become stable entities within the school. Being one of only three government girls' schools, Midstone Girls' was unzoned and therefore able to accept students from a wide geographical area. Many of the students travelled considerable distances to and from school, leaving home before seven o'clock and not returning until nearly five in the afternoon. Students explained the choice to come to Midstone Girls' in a variety of ways. For some it was a case of not going to the large mixed high schools of the southern region which they described as having a bad reputation as being tough schools. In some cases this reputation was supported by stories of older brothers and/or sisters having gone to one or other of these schools and parents being unhappy with the outcome.

In other instances it was that the parent(s) would have preferred a private school but found the fees beyond their capacity to pay, and hence chose Midstone as the next best alternative. One of the teachers later remarked that Midstone Girls' had long been known as 'the private school among the techs'. School buses were a constant feature of life at Midstone Girls' in ways reminiscent of country high schools but rarely encountered in city schools. Roughly one third of the student body fitted into the category thus described, travelling up from the southern outlying suburbs.

It was also clear that Midstone had a much higher proportion of students from 'ethnic backgrounds' than either of the two schools previously described. While it was true that the mixed high school contained more NESB (i.e. non-English speaking background) students than Midstone primary, they tended to be in classes other than the ones under scrutiny. Midstone Girls' had adopted a policy of building homeroom groupings in terms of deliberately mixing the students (who later regrouped for maths and language classes) and in this case the range of backgrounds was a constant feature of classroom groupings. The principal spoke during the initial interview of the press for Greek and Italian parents to enrol their daughters at Midstone as they were very protective of their daughters and also suspicious of the promiscuity which they believed to be promoted in mixed schools. Hence another feature of the student body at Midstone was the 15% of girls from Greek or Italian background. In later interviews girls from this group were particularly vocal about their preference for coeducation and being in with 'the guys' in ways that probably had more to do with their family background and restrictions on young women than their experience of Midstone Girls'.

Perhaps the most important feature of the constitution of the student body, certainly in the eyes of the principal and senior teachers, concerned the fact that Midstone Girls' had long operated within a tradition that saw girls' schools as providing a particular sort of educational experience for girls who were identified as 'less able'. The principal frequently lamented that primary school principals still counselled their less able girls to think of

Midstone Girls' for their secondary education, a perspective shared by the regional officer in charge of student placement, himself an ex primary school principal. The expectations held by these people of Midstone Girls' were that the school would provide the girls with training in life skills - and these very much in terms of woman's traditional role - and that there would be little press for academic achievement. Although this feature was a cause of official and public lament, the faculty at Midstone were somewhat divided on the issue as well. Some of the long serving women teachers resented the new directions being taken in the school and believed that Midstone Girls' had done a better job when it had provided a more limited and traditional education. Others, some of them maths and science teachers, felt their task had been made unduly difficult by the press to encourage girls in their areas, in that they felt the girls had neither the interest nor the ability to apply themselves in academic areas. These issues will be taken up in more detail in the section on talking with teachers.

Overall then the picture presented here of Midstone Girls' High is one of a school at a particular moment in the history of girls' public schooling in Australia. While at the official level the school is responding to the policy of promoting gender equity and encouraging girls' in non-traditional areas such as technical studies and using computers, the school community carries within it counter ideologies as seen in the more traditional understandings of what a girls' school should be and what it should do. The observer is immediately confronted with profound contradictions in registering the variety of activities within the school. For instance, there is a school cadet corps which attracted media coverage in terms of its promotion of girls in non-traditional areas and which rates frequent mention in official school publications although only a small number of girls are actually involved. At the same time the library contains glass display cases featuring crocheted doilies and certificates of honorable mention awarded at the Royal Adelaide Show for students' work in the baking of scones and biscuits. This is not to suggest that schooling for girls should not encompass a wide variety of experiences and activities associated with the learning of useful knowledge, but rather to register the different conceptions of the

learner and her role in society as exemplified by the experiences within one school.

B. The school as organization : the staff.

There were 60 staff members at Midstone Girls' High at the time of the investigation. Of these 12 were male and 48 were female. The school had a female principal who was in her first year at the school. She held strong views about the responsibility of educators generally to foster education for girls in terms of academic achievement and supported the introduction of computers and non-traditional work experience. There were 2 deputy principals, one a man who had taught in the school for many years, and the other a woman who was also in her first year at the school. Five of the ten senior teachers were males. The maths-science faculty amounted to 12 members, 7 of whom were male. Once again the staffing structure at Midstone Girls' mirrors that to be found elsewhere, with men more likely to be in senior positions and more likely to be associated with mathematics and science.

Whole school assemblies were a regular feature of life at Midstone Girls', occurring each week and called on special occasions in addition. These assemblies were led by the male deputy principal who called the students to order, gave out administrative details of visitors or school events and then 'introduced' the principal who spoke briefly about whole school matters and then called on individual teachers and girls to make reports. Singing was a frequent occurrence during these assemblies, an activity in which everybody participated with evident enjoyment. The teachers were routinely present, most standing with their classes. Weather permitting the assemblies were held outside, on the paved area between the buildings. In wet weather assemblies were held in the hall.

The male deputy principal whose presence was central to the running of school assemblies had in fact been the school's acting principal in the preceding year. He had applied for the principalship but the position had been won by a more senior applicant. He had been

philosophical about this outcome, saying *"Even though I had shown I could do the job, I knew I wouldn't get it. They were bound to appoint a woman."* However the year 10 girls had their own understanding about this sequence of events. In interview a group of these girls informed the researcher :

"You know Mr. B. could have had that job, but he didn't want it. He'd rather keep teaching us so he let Mrs. R. have a turn."

The girls' interpretation was entirely consistent with the perception of males as powerful and in charge, a perception that was reiterated at the weekly assemblies, in which Mr. B. "let" Mrs. R. have a little talk to the school.

There was a much stronger 'whole school' orientation at Midstone Girls' than at Midstone High, as evidenced in the deliberate mixing and mingling of classroom groupings, the frequent assemblies and the fact that girls knew one another across age and year levels. During the investigation the year 12 class at Midstone Girls' celebrated the end of their schooling as they officially 'left' one week before the commencement of their final examinations. This event was the focus of a school assembly and there was a good deal of dressing up and parading and general fun and games with this group throughout the day. All the school knew it was the last day for the year 12s and that this was a cause for celebration whether or not girls from the junior years thought they would complete their schooling to this level. The year 12s were wished Good Luck! and Goodbye! from students and teachers as they moved around the school in a general spirit of fond farewell. In the following weeks many returned to discuss the examinations with their teachers and to talk more generally of plans for the future. There is a practical explanation for the difference between Midstone Girls and Midstone High and that is that the girls' school was just one half the size of the mixed high school in terms of student numbers, and so a sense of community was easier to establish. However, as it will be argued here, the whole school orientation owed more to the *style* of schooling processes than to simple numbers.

Another important feature of the student body at Midstone Girls' concerned the fact that the

numbers dropped sharply at the end of year 10 by which time most of the girls had turned 15, the minimum legal age for leaving school in South Australia. At the time of the study there were around 170 girls in years 8,9 and 10, dropping to 90 in year 11 and 40 in year 12. Teachers of the senior classes reported that there was a continuous attrition during the school year in years 11 and 12 as students left school if they got a job. This feature is in direct contrast to the situation in the mixed high school in which the senior years attracted new students on the basis of the school's academic reputation. Whereas in the mixed high school the constitution of the student body affirmed the school's (and the teachers') academic orientation, the girls' school did not hold the same associations which was a source of complaint by some of the teachers who sought to establish a more academic atmosphere.

C. Playground Practice.

At Midstone Girls' the unsupervised recreation at recess and lunchtime was a time for girls engaging in a much wider range of activities than had been the case for girls at either of the two schools previously described. Some of the girls were seen chatting in groups of 4 to 6 seated around the picnic tables described in the previous section. On fine days the main oval was the site of several groups of girls sitting in circles, eating and talking, creating an effect rather like that of mushrooms dotted through the grass. At times those who had organised a team ball game attempted to reclaim the oval for this purpose and the usual practice was for the chatting groups to move to another site. Elsewhere the climbing frames were the site of vigorous activity with girls doing flips and handstands usually attended by a group of observers waiting their turn. Some of the girls who were keen on tennis were playing on the courts which required previous booking as there were more applicants than space available. On all but the hottest days the asphalt area between the buildings was the site of one or two lines of girls playing skipping games - perhaps the most cooperative of playground ventures requiring two to be turners and everyone else to line up and take turns. In later interviews the girls giggled somewhat embarrassed when

asked about the skipping as apparently it was seen as a behaviour appropriate to year 8s only.

In warm weather the pool was very well patronised both before school and at lunchtime, with some students reporting that they deliberately came to school at 7.30 so that they could have a swim before school. There were no restrictions on the numbers swimming and at times the pool was very crowded and the source of a good deal of noise, but its popularity was an enduring feature of the student experience at Midstone Girls'. The pool was always carefully supervised by the Physical Education staff and some of the general teachers, some of whom were male. In general the girls' behaviour in the pool was characterised by a lack of selfconsciousness that was almost unimaginable from the experience of girls in the mixed high school. At Midstone High the P.E. teacher's statement that girls were more aware of their developing bodies and thus less likely to dress in revealing sports uniform and to engage in physical activity was ratified in the daily experience of mixed P.E. classes. However the Midstone girls' evident enjoyment of the pool facility and their eager participation shows that girls' selfconsciousness is rather more a product of a particular social situation than a result of their being female.

In other corners of the school grounds at Midstone Girls', students spent time attending to the bird aviary and the hydroponic garden. Although these activities appeared to be the result of a duty roster at first glance, later talks with the girls revealed that they had volunteered for these tasks as they professed particular interest in the areas.

As was the case in the other two schools, students were officially banned from the classrooms during recess and lunch unless the weather was too bad for outdoors. However the rule was somewhat relaxed at Midstone Girls' at the request of a particular group of students, namely the bus travellers, who claimed they needed to use some of the time completing homework assignments. A downstairs classroom was set aside for this purpose and the duty teacher's occasional inspection ensured that it was reasonably quiet.

Elsewhere in the classrooms during recess and lunch groups of students would volunteer to prepare the blackboards for subsequent lessons and thereby obtain official permission to be in the rooms. At times such activities would include a good deal of amateur cartooning and much laughter, but it was also the repeated practice for the year 10 French students to write out the dictation for the year 8s (from the teacher's good copy) so that the teacher had a board ready for correction. In other classes tables and diagrams, prearranged by teachers, were prepared by students during their free time to be used for more junior classes.

All such activities worked towards the girls at Midstone feeling part of the general project of the school. In general in the schoolground there was more fluidity between groups and less restriction on possible activities than at the previous schools. Girls were known by others from different classrooms and year levels. There was a strong sense in which this knowing was more personal and yet less individuated than the recognition afforded the boys in the mixed school environment. Girls at Midstone Girls' were recognized, named and known as persons by other girls, rather than in terms of particular achievement or sporting ability. Midstone Girls' students said

"Oh yes that's Alice .. she's in year 10 I think .. she's really nice... "

whereas the boys had said

"Oh that's Angus .. everybody knows him .. he's a rock star ...".

For the Midstone girls, one's official position, whether student or teacher, tended to be overwritten in terms of personal attributes such as being kind, friendly, approachable in ways which revealed the values of the speaker.

D. : In the classrooms.

At Midstone Girls' High School at the time of the observations there were 5 year 8 standard classrooms and one special class of 16 girls who had been identified by their primary school teachers as having particular learning problems. Only three of the Midstone primary students entered Midstone Girls' in that intake - normally there were around 10 year 8s

who had come from Midstone primary, and so it was a disappointment to discover that this was a disproportionately small group. There did not appear to be a reason for the small number - one of the girls, Heather, had been identified as having learning difficulties at Midstone primary, whereas the other two were considered average to good students. Heather went into the special classroom at year 8, while the other two girls were placed in two of the standard groups. As it happened that Midstone Girls' also adopted the practice of 'setting' the students for mathematics, and the three ex Midstone primary girls were in three different maths sets, these classrooms formed the focus of the year 8 classroom observations at Midstone girls. The maths classrooms will be described first and then other subject areas in which the majority of these same students are grouped.

Classroom 1 : Year 8 mathematics : advanced.

MC's classroom. A large group - 28 girls are in this set. The teaching appears very traditional chalk and talk exposition on the board and then teacher walks around the room while the class is working through worksheets of problems. The girls sit at individual desks, fairly close together as the classroom is full. There is room for the teacher to walk between the desks and give individual attention. Several girls raise their hands and wait for the teacher to come to help them. The atmosphere is quiet and work oriented. MC is in her second year at the school - she has a strong professional commitment to girls' education generally and to maths education in particular.

Tests were a regular feature of this classroom, occurring at least once a week. The class took the assessment routines seriously. There was a high degree of interpersonal competition in this classroom. Some girls had approached the teacher and asked if they could be put into the 'standard' set as they felt they would get As in that group and would prefer that to the Bs they were on currently. MC had responded by urging them to continue in the advanced group and offered lunchtime coaching sessions to help them improve their grades - an offer which was accepted. On another occasion a girl who had performed

poorly in a test burst into tears when the papers were returned. There was no public announcement of marks but the girls said later that you could tell from people's expressions if they had done well or not. After test papers were returned there were several girls clustering around the teacher asking for a re-mark.

Names were used more frequently in this classroom than had been the case in the mixed classroom. However it was also the case that the same names were used repeatedly - in this case 10 -12 girls were frequently named - and that others were rarely called. The teacher, MC, later confided that difficulty in remembering names was a strong feature for her of the single sex environment. It was evident on several occasions that she had forgotten student names, and at one of these times she remarked to the class :

"We have problems with remembering too you know - you only have to remember one name at a time, but I have to remember all of you .."

This and other similar instances of teachers at Midstone Girls' asking for group support always drew a positive response from the girls.

An incident with this class relates to the issue of individualism (as distinct from personalism), as seen in the following excerpt :

MC is away and the relief teacher is one of the physical education staff. Work has been assigned by MC and there is a problem of interpretation of some of the graph work. The teacher asks "Who is getting really good grades in maths this term?" No one volunteers. The question is repeated. Still silence. Then the teacher says : "Put up your hand, without calling out, if you can give me the name of someone who is doing well." There is a forest of raised hands. Several names are offered but it is clear that Fiona, Tammy and Rose are most frequently mentioned. "OK" says the teacher, writing these names on the board, "You can ask one of those three if you have any questions."

Despite the fact that this particular classroom was characterized by a high degree of competitiveness, as noted earlier, the commitment to group solidarity in the above sequence is remarkable. Apparently it was not acceptable to identify oneself as a high achiever, but it was alright, and even important, to be able to tell of someone else in this category. It was also true that the girls were accurate in their perceptions. Fiona, Tammy and Rose were the three top performers as revealed in later checks with the class records. This incident gave rise to the self ranking exercise that will be detailed in a later section.

Classroom 2 : Year 8 mathematics : standard.

This class takes place in room 15 which is the official maths room in the school. The teacher, AS, is the maths senior and has been at Midstone Girls for 6 years. His office leads off this classroom and houses some computer equipment. The group is slightly smaller than the advanced class, 26 girls, and is much noisier. The teacher's manner is relaxed and friendly. The girls are seated in lines across the room with a fair degree of scattering. The back row is clearly the favoured position and fills up before any of the others as they come in.

The desks are liberally inscribed with graffiti, as are the chairbacks : I luv Nick. School sucks. Maths sucks. Paul 4 me. and other such.

The lesson content in this classroom operated at a much lower level than in the advanced group and also at a much lower level than the standard group in the mixed high school. Coordinate geometry was taught in terms of building a graph from a given list of coordinates, the outcome of which was the cartoon character Snoopy - a task the girls called a 'dots-to-dots'. This task formed the content of maths classes for two weeks. Those who finished early were invited to colour in the picture thus produced. After a slow paced introduction to the concept of a number line AS introduced his family into the

discussion of numeration :

"My daughter isn't at school yet, but she's learning to count and write and she does a 3 like this : } ; she hasn't worked out the directions yet."

The slow pace appeared to be deliberately maintained, and the relaxed style became patronising, as in :

"Joining them up does something different but we won't worry about that for a couple of years until you've got the basic ideas straight."

There was a strong implication in his teaching style that he didn't expect the girls to grasp the concepts, e.g.

"How's it going Judy ... do you understand these negative numbers?"

The girls responded to this style by being very ready to admit (and almost accuse) "I don't get it." In general when this happened AS slowly went over the point again. At times he became less patient, as in

"Can't you see how to do that? My boy's in grade 2 and I gave him a sheet of these and he thinks they're great!"

(The connection between male teachers comparing the ability of their own offspring with that of their female students and at the same time holding to a biologically given view of gender was noted several times during the observations.)

Many of the girls' requests for help were quite strident, but they were always put in the form of the ignorant asking the wise, and never in the form of suggesting alternative solutions - as was the case with the boys at Midstone High. At times when AS tried to move a bit faster the girls were quick to object *"I'm not done yet ..."*. Teacher and students in this classroom appeared to operate within a shared understanding that the knowledge area was difficult, and probably beyond the capacity of most of them, and that the aim was to get by with the least possible effort. The girls in this year 8 class appeared somewhat fatalistic in their attitude to mathematics - there was a 'magical' aspect to things being right or wrong which had little to do with effort and even less with understanding. This feature was echoed frequently in conversations during maths class, e.g.

Sally : How did you get it like that, Julia?

Julia : I dunno ... might be right, might not .. looks good so maybe ...

Mary : No, you're meant to go that way for number 2!

Sally : You silly sausage! See you're not concentrating! (mockingly)

Julia : Oh you just ...

Conversational noise level was quite high in this classroom, and much of it not related to the subject area. At times AS referred to the cumulative nature of the subject in an attempt to emphasize its importance, as in :

AS : Do it right now and when you meet more complicated graphs in years 9 and 10 you'll have all the skills.

The girls took up opportunities to engage the teacher in personal responses to the issues as in :

Jenny (at the back) : Mr S. is year 9 maths hard?

AS : What do you think, Jenny?

Jenny : I reckon so.

AS : Well it's not so much hard, rather that you do more of it.

Jenny : But that's what I mean.

AS : It's more like building a house really ... you put the first lot of bricks in and then you put the next layer, though you have a look at the first layer while you do it.

While AS appeared delighted by the analogy, for the girls in this year 8 standard maths group the prospect of their working as bricklayers was equally remote as the prospect of their continuing with mathematics. After this interchange AS let the class pack up early, saying that he was pleased with their work, that they were really starting to get it.

Classroom 3 : Year 8 mathematics : basic.

This is a small group of 16 girls, all of whom have been identified as not performing up to standard in their primary school. This is certainly the case for Heather, the ex Midstone primary student. Absenteeism is high in this group; often only 10 girls are present. The teacher, PS, is an energetic woman who sees her career more in terms of her responsibility for the mainstream maths in year 12. Her involvement with this group is part of a trade off so that she can maintain the senior classes. The class is taught from a series of roneo'd worksheets because the maths funding had not extended to supplying texts for this group.

The special nature of this group meant that to some extent they were free of the restraints operating on the regular teachers, and yet their mathematics lessons were fairly traditional with concepts being carefully explained and then set to work on examples. The teacher, PS, occasionally tried to relate the topics to real life concerns but without much success. For example, in a lesson on percentages, she asked the students to bring in the daily paper with the sales items prominently displayed in terms of percentages and so much off etc. The students' response was very much in terms of but what if? as they asked *What if you don't get the paper?* To which the teacher : *You'll get the local rag.* And one student : *No, we don't.* And another : *No, we don't either.* It was as though they wanted to resist the implication that maths knowledge might have anything to do with real life.

At other times these students displayed a 'magic' attitude to maths calculations similar to that described in the previous class. Being right or wrong appeared to them to be a case of being lucky and guessing right rather than thinking it through or working it out. They did not hesitate to volunteer answers during correction time but there was a randomness about their suggestions that revealed they had no idea of right answers.

All names were known and used in this class, in contrast to the practices of the previous two classes. The small size of the group is no doubt responsible for this. As with the standard class previously described teacher and students operate within a joint

understanding that the subject is difficult and important and that the girls are not likely to be successful. The teacher, PS, was sympathetic to the group rather than patronising in the manner of AS in the standard class. The girls' response was relatively cheerful - they accepted their status as weak students and appeared unlikely to prove the assessment wrong.

In general the maths teaching that operated at Midstone Girls' at year 8 level sustained the understandings of the primary school students that this is an important area of knowledge and one in which ability plays a large part. The advanced class which contained all of those likely to continue in mathematics beyond the compulsory years operated in highly traditional ways. The girls' response to the competitive atmosphere generated by the teacher's approach was somewhat contradictory. They appeared to understand that maths classes revealed ability ranking among students, and had themselves scored sufficiently well in this system to be in the advanced group. At the same time they were reluctant to disclose their own positioning within the group when asked, but much more willing to nominate some of their peers as being good at the subject. This classroom was a site of divided loyalties - a group collective struggling against the individual press to succeed. In the other two maths classrooms described here the group ethic operated strongly in ways in which the teachers were complicit, namely within the jointly developed understanding that maths was hard and that they were not good at it.

At Midstone Girls' High in year 8 the maths classes operated much as maths classes are known to do - except that one could hypothesize that in a mixed classroom there would be more challenge from the boys against the low rating the students received from the teachers (in that *challenges* were a distinctive feature of the boys' contributions in the mixed classes observed). In other lessons the distinctive features of this all girls environment became more evident.

Year 8 English : MM's class.

This classroom contains many of the girls from MC's advanced maths class. The teacher, MM, has worked in the school for many years and has very firm ideas about the role of education for girls. Its task, according to MM, is to prepare the girls for life, and as she sees it life issues will essentially involve topics such as health and hygiene, nutrition and parenting skills, budgeting and social relationships. She thinks that the press to get girls into computing and non traditional activities is misguided. She sees the school's success in terms of rescuing girls from unfortunate backgrounds and equipping them to manage their lives so as to avoid some of the problems they have had to deal with.

MM's classroom teaching style is highly nurturant and sympathetic - a style which confirms the girls to some degree in their protestations about the difficulty they experience with the work and their avowed self consciousness. For example when speeches formed part of the English lesson and the girls objected that they were embarrassed to stand up and talk,

MM : Yes it's an awful feeling to have to stand up by yourself isn't it? ... would you like to have someone stand out there with you?

and when the girl had finished

MM : Oh it is good, isn't it, to have that over!

The girls' response to this treatment is to present as more selfconscious, shy and unconfident than in any of their other classes.

Although the subject is officially English, the teacher's understanding of the likely life outcomes for these girls is at times made explicit. For instance, to a girl who was objecting to being called on to make her speech,

MM : Yes, I know, it's always hard to be first. That's because your name starts with an A - you'll have to marry someone whose name starts with a Z ... (jokingly) I know a lovely boy...

The atmosphere was decidedly different in another year 8 English group, which is the next

classroom described.

BC year 8 : English.

This group are also doing speeches. Girls come out the front at the teacher's request; they are given neither time nor room for the "Isn't it awful.." approach of MM. One girl who is not prepared is told very clearly "Get your act together!" This is clearly a work-oriented classroom. This group contains many from MC's and AS's maths classroom and so seems comparable with MM's group, but the difference in the girls' response to the teacher's style is striking. There is no coyness or reluctance to come out the front - the task is clearly presented and the girls'role is to get on with it.

Gender as an issue was discussed in this classroom in terms of an English assignment in which the text was a luridly written account of schoolboys fighting, with the girl readers evidently enjoying the macho boasting and abundant physical threats contained in the passage. BC asked the group : "Do girls fight like that? ", a question which generated a positive furore of answers with most wanting to say that girls do fight, even more than boys, but not in the style described in the passage. Girls, they said, have "bitchy" fights rather than physical combat, as in

Sadia : They (girls) want to hurt them inside, but not physically ...

Gaynor : Yes that's right!

Amanda (speculatively) : Also girls'd be too scared to fight like that at school ...

Julie : But that's not the sort of fighting that girls do mostly ... we fight with words and we can do that at school ...

While they had shown genuine amusement at the story of boys fighting, they were much more censorious about girls' fights, with the majority agreeing that girls' fights were worse

than boys' fights in that they were more hurtful. They were also ready to agree with the 'bitchy' label and the attendant negative value judgments as descriptive of girls' behaviour, while the boys' bravado and violence was treated with a mixture of amusement and admiration.

Two features of classroom interaction commonly found at Midstone Girls' were first identified in this classroom. One was the practice of addressing the group as '*Ladies*'. This could be in an organizational message, as in 'Right, *ladies*, take out your books for ..' or it could be used as a reprimand 'What are you *ladies* doing?'. Many of the teachers observed used this form of address continually. Some explained it as a custom they had become used to in this school, while others admitted it masked the fact that they didn't know all the names and that it felt more friendly than 'Class'. Certainly the girls appeared unbothered by being called ladies - and its usage did not appear to carry the Victorian connotations of decorous behaviour and ladylike activity!

The other feature concerned the practice whereby teachers recruited the student group as helpers in the construction of the lesson. Most teachers resort at times to "*Where are we up to?*" or "*Have we done this already?*" but at Midstone there was a sense in which such appeals were in keeping with then understood role of the student group which operated in terms of facilitation. For instance in a reading session, the reader asked "*Shall I go on?*" To which BC responded "*Would you like to?*" Girl : "*Yes*". BC : "*OK, well go on then.*" The sense of mutual lesson construction in which the student group played a contributive role was observed in many lessons at Midstone Girls', especially in English, history and languages. However it was almost entirely missing from mathematics and science, in which sessions the teachers operated as the bearers of information and the girls became the uninitiated.

Year 8 : Geography : SM.

There is a special geography room and the year 8 geography classes take place there. The seats are arranged laboratory style in rows along workbenches. The walls are liberally covered with maps and weather charts and physical geography is taught in the time honoured scientific tradition. The teacher is a very large young man with a loud voice. His appearance resembles that of an archetypal scout master and he is responsible for the school cadet corps. His booming hearty manner ensures that he has attention from his class groupings.

SM (loud voice) : Now that we're all ready ... and we're not RULING THINGS UP ...(making sure he has everyone's attention) ... what would you say about the varieties of agriculture in Australia?... ummm

There is a stony silence.

SM : Bet you don't know what intensive and extensive mean ... do you?

The somewhat hectoring style of this teacher was not productive of student contribution, although the lessons were well organized and the curriculum carefully planned. At times SM made statements revealing his conception of the students in gender bound ways, as in

SM (Talking about gas flow and a solar pond) : And this is the confusing part for you girls ...(afterthought) and for any of us I suppose

And on a later topic,

SM : This is a very difficult thing for you girls to understand

The effect of this style of comment on the students was not to make them challenge the item to prove their capability (as may have been the result had the comment been addressed to boys) but rather to confirm them in the understanding that the knowledge at hand was alien and difficult. Not surprisingly SM's classes were ones in which the students contributed least. And , in contrast, at the mixed high school it was noted that when a topic was introduced as new or complex, it usually produced much contribution from the boys.

Again in an effort to relate the lesson content to real life situations SM revealed a picture of a world which held gender roles and which was distinctly inappropriate for the students.

SM : How many of you have rooms with a northerly aspect and your mother sits out there in the sun in the afternoons?

Nicole : I've got the northerly aspect but not the mother sitting in the sun ...

SM : Haven't you? .. My mother used always go out to my room in the afternoons because it was sunny there and she liked to do her sewing in the sun

In this sequence the girl students are positioned as being potentially interested in compass directions because of the likelihood of their becoming afternoon sewers and thus fulfilling the traditional female role along with the image of SM's mother. There is no concession to the fact that social conditions for women have changed dramatically in recent years - the image of the woman sewing is presented as inexorably as the sunshine itself.

Year 8 Science : DL.

Science lessons take place in the laboratory and the girls enter screwing up their noses at the usual laboratory smells. The teacher is a young Asian man, very earnest in his attempts to teach his subject, but his strong accent and lack of understanding of youth culture make his task very difficult. He believes the girls are 'very negative' towards science and would prefer to teach only those who choose to do it. The laboratory is not in good condition - dirty sinks, scratched and marked counters, very different from the atmosphere of businesslike efficiency characteristic of the laboratories at Midstone High.

Although during later interviews several girls admit they 'feel sorry' for the teacher because of his obvious lack of control in the classroom, the girls in the class group maximise their enjoyment of the session by availing themselves of every opportunity to stir the teacher. In

many respects their behaviour resembles descriptions of boys' behaviour in mixed classrooms; they call out, they make suggestions, they challenge the teacher's definitions but they position themselves as innocent and ignorant, and assert their right to claim "*I don't understand!*" in the sense of charging the teacher with incompetence.

In a lesson on electrolysis, after spending 5 minutes attempting to quiet the group, DL poses the question "*What are the things in water?*", to which someone at the back calls out "*Fish*" and the class breaks up again...

Later, in the same lesson, after a lengthy explanation of the chemical components of water, someone asks "*How do you know it's hydrogen?*"

DL responds excitedly : Ah, we're going to test it.

Girl : How do you test it?

DL : We're going to light a match.

Girl (in mock horror) : Is it gonna blow up? (much mirth from her friends).

A little later, Sandra is invited out the front to hold the lighted match in front of the tubes of hydrogen and oxygen - by this stage the class are watching intently, almost hoping for it to go wrong, and it does.

"Oh Mr L. you disappointed us ... oh it didn't work.. " (heavy handed mock grief).

After some more time the experiment finally works and the lighted match induces the desired 'pop' at which the girls clamor "*Do it again!*" and "*Oh isn't that cute!*" and, to the girl holding the match, "*Didja get any thrills?*"

Another topic, Energy, and DL attempts to interest the class in a definition.

DL : What do we mean by energy?

Liane : Chocolate!

Debbie : Vitamins!

DL : No, that's not what we're after - we need to think of chemical energy.

Debbie (feigning innocence): Why aren't vitamins the same as chemical energy? They say

they give you energy...

DL abandons the discussion and writes on the board "Energy = the ability to do work."

Sue (calling out) : Isn't it better to say that energy is the ability to make something happen?

Fiona : Mr L. using your brain is work isn't it? Is that energy?

DL : No, we don't call it work in science. Can anyone give me an example of force?

Gaynor : Yes! (and she pushes her neighbour off the stool.)

Another girl pretends to punch her neighbour as an example of force.

DL proceeds to lecture on the concepts of force, work and energy. There is a good deal of noise in the room. Most of the class are not listening at all. Several girls are doing assignments for other lessons.

While most observers would claim that the issue here is one of communication and classroom control, DL saw the general lack of application and interest as a result of girls' negative attitude towards science and their lack of ability in the subject. This interpretation was shared by his colleagues in that many of the Midstone Girls' teachers believed that girls were not good at maths and the sciences - a position which meant they did not need to look at what was actually happening in the classrooms. The single sex context carried with it the potential for teachers to accept classroom effects as produced by 'the female nature' of the students and compounded their preformed opinions of girls as learners. A related feature of classroom experience at Midstone Girls' concerned the way in which the students were quick to read the situation, viz. the expectations of particular teachers and classroom settings, and respond accordingly. This impression resonates with psychological theory in that females emerge as 'field dependent' and are more affected by setting than are males (Block,1984). Certainly classroom groupings at Midstone Girls were seen to vary their response as a group to the different classroom environments to a very high degree. In many classrooms they were encouraged to think of themselves as girls (or ladies) in ways which implied they were therefore possessed of a particular set of attitudes and life

expectancies, an implication they accepted and only rarely challenged.

Year 10 classrooms.

By year 10 the girls had acclimatised to the atmosphere of a single sex school and had adapted to their position within it. In class they appeared more sure of their right to contribute to classroom discussion than they had been at year 8. The observations at this level concentrated first on the advanced maths class which, because of decline in numbers also included some girls who did not intend to continue with maths beyond this level and who were struggling to keep up. The other year 10 class observed was the commercial class who were taught standard level maths. Both of these classes were stable groups and stayed together for their other subjects so comparison of classroom processes in the maths classes with those in other areas was sharper than in year 8 when group composition varied. Each of these groups contained several girls who had completed their primary schooling at Midstone primary and who recalled being taught by some of the teachers involved in the primary school study, thereby lending credibility to the project of this work namely to track the common experience of school and student development.

Year 10 : Advanced mathematics : DB's class.

DB has been teaching at the school for 7 years. Her training was that of a home economics teacher but she developed an interest in mathematics and has upgraded her qualifications in it in recent years. She makes frequent negative reference to 'sewing class' in her teaching as though to assert the higher status of mathematics. To this end she objected to the class being publicly identified as 10N, saying they would be called 10 Needlework "And you wouldn't want that on your end-of-year certificates, would you?". She also engaged in a vigorous campaign to have their home room other than the sewing room where they were originally placed.

DB says that the group is 'mixed'. They were tested at the end of year 9 and the top group was selected for this class (if they wanted to). However it was a small group and several others including some newcomers to the school were put into this class. In general the maths classes proceed in the traditional chalk and talk style, with the teacher, DB, doing examples on the board while the class watch and then everybody is set to work on worksheets. Teacher talk dominates the demonstrations, with girls being named and called on to answer particular questions. DB is very skilled at drawing diagrams for the trigonometry problems and her board work is exceptionally clear. The girls say later that they can do the problems if the diagram is given, but they have difficulty in generating the diagrams. While the public talk in maths classes is generally work oriented, DB at times reverts to her homeroom teacher role, as in :

DB : Carolyn, what a funny way to sit on a chair!

Carolyn : Sitting properly isn't comfortable.

DB : If your skirt was longer you wouldn't be noticing the cold chair.

Carolyn : Oh it isn't that.

DB : And do you have to talk with a cigarette in your mouth?

Carolyn : It's a pen.

DB : But it looks a bit like a cigarette like that ...

There follows an explanation to do with the health hazards of pen sucking, all given in a fairly lighthearted style, in which the teacher's role is close to that of parent and the student that of recalcitrant child. On another occasion this style became most explicit. A mock fight was going on in one corner of the maths classroom - the offender had written on the page being used by her seat mate, occasioning much verbal abuse, to which

DB : If school had a playpen we'd have it in the middle here with you two in it

This interaction is typical of the style of student-teacher interactions encountered at

Midstone Girls', and can be seen as different from those described at Midstone High in which the teachers positioned themselves as either more distant from the students or at times as almost equal adults. The girls' school provided an atmosphere of guardianship more like that of the primary school and yet conscious of the increasing maturity of the students, whereas at the mixed high school maturity was virtually assumed or at least dependence of students on teachers was actively discouraged.

The girls in the advanced class were also very ready to admit that they did not understand, although they did so less stridently than in the standard maths class at this level. During a review of a previous test the following interaction was recorded :

DB : How did you work that out?

Fiona : By some freak accident I guessed it right.

Her friend : It would have been easier if we had had measurements ...

DB : But we're above that now ... we can do algebra.

Fiona : Speak for yourself ..

DB : No! I'm speaking for everybody - we all can work things out without numbers now.

There is a strong sense in which the teacher, DB, used 'we' to indicate group cohesion and her own group membership, as though she knew she had to convince the group of the point as it would have been useless to try to convince one individual she could do it. This sort of group ethic was a strong feature of classroom interaction at Midstone Girls'. The girls respond by readily undertaking the group identity signalled by 'we', as in :

DB has demonstrated a quicker, algebraic, way of solving a problem, to which

Girl : Nobody thinks like you do, Miss B.

Another Girl : We'd never think of that until you show us ... then we might remember it if we get another one like that.

Midstone girls repeatedly revealed a conception of learning that placed themselves as the recipients, not necessarily passive but definitely responding to being taught, and in this view the teachers were seen to bear the heavy responsibility of doing the job. It is a picture in direct contradiction to that of the autonomous active learner involved in self-motivated enquiry so frequently featured in Piagetian-inspired educational theory. The mathematics lessons in particular were structured around expert-novice relations with the teacher/expert demonstrating and the students/novices watching. At times the teacher, DB, asserted her lack of knowledge of particular topics, seemingly to break down her role as expert. For example in a trigonometry problem,

DB : I've no idea what a job crane is either. I must admit if the diagram weren't given I'd be just like you ... wouldn't know where to begin.

However in general the idea that the teacher has the knowledge and the learners proceed by lucky guesses rather than by reasoning appeared to hold sway :

Sherrill, a good student, is asked to demonstrate an example on the board. This she does in much the same manner as DB, chalking and talking.

DB (sitting at desk) : Excuse me Miss ... why did you put 55 degrees there?

but Sherrill doesn't answer, and instead seeks to change the number rather than deal with the question. She randomly attempts to insert 55 degrees in other angles in the diagram.

DB has to intervene with explanations.

The magical right answer operating at year 8 had been transformed by year 10 into a mixture of luck and the teacher's powers of explanation. The girls' locus of control is definitely external - they explain away their right answers by reference to luck, but they also challenge the teacher with their incomprehension in terms of "*You didn't explain clearly enough!*"

Year 10 : Commercial : standard level maths : JJ's classroom.

This is a group of girls who have elected to do commercial studies, a traditional avenue for girls in this school although less popular in recent years as the job prospects are not what they once were. The girls are not necessarily less able than those in the advanced class - some of them had the option to go into that group - but the standard of mathematics is decidedly lower. The noise level during maths lessons is high. Once again the girls assert their right to make public their lack of understanding as though this is a direct responsibility of the teacher, and little to do with their own effort, as in :

JJ is reviewing a topic that has been previously introduced. When he shows a different method there is a storm of protest : "I don't get it" they call out en masse. JJ stresses his willingness to go over working methods "OK I'll do it again" but this seems to aggravate the situation as by now many of the girls seem committed to the "I don't get it" position.

It seems that by professing a lack of understanding the girls gain some control over what happens in the lesson. The teacher, JJ, confronted with this type of student protest, will persist in demonstration at the board during which very few students are paying attention.

At times the teacher became frustrated by their inattention and would ask

JJ : Joanne, where'd I get that 5 from?

Joanne : I dunno.

Joanne's neighbour : Gee, she's honest! (ripples of laughter from other girls).

JJ resumed his demonstration at the board.

When the class are at last set to work on worksheets, there is still the frequent protest :

Girls at the back : Mr J., I don't get this!

JJ works the example on the board but the girls still have problem with it.

Girl (to neighbour) : What in the world is he talking about?

Neighbour : I'm waiting for you to explain it to us.

First girl (loudly) : How are we supposed to do it?

Again the onus is clearly on the teacher to teach, and this means to explain, to make it clear. The work they were doing was solving simple equations at a level that did not seem to warrant the mystification that was loudly being claimed. When another teacher came in to collect some books, the talking and calls of "*I don't understand*" increased in volume, and died down somewhat when the visitor departed. One girl made the charge explicit : "*You haven't told us how to do this yet!*", but most were content to voice their incomprehension.

At times the girls in this class appear to interject in an attempt to permit some personal input, but the teacher makes it very clear that all communication is to be work related.

After setting them to work on solving equations , came the call

Girl : Mr J., can you tell us if the answers are in decimals or fractions ... or anything?

JJ : I'm working on them right now and so far I've got fraction answers ...

Girl : And if you use a calculator can you answer as a decimal?

JJ : Yes that's alright.

At this the questioner subsided - when asked later why she would use a calculator to work out the answer to $3x + 5 = 38$, she grinned and said happily "*Oh I'm too dumb to work it out for myself!*"

In this classroom there was a distance between teacher and students - and this created a challenge to which the girls did respond as they invented ways of bridging the gap in their

repeated attempts to engage the teacher in some personal exchange. As he worked at the board there would be comments from the group on his dress, questions about all manner of things such as his food preferences, weekend outings, but the only topics that drew a reply were those concerning mathematics. His attempts to control the class were usually by giving a large number of detentions and yard duty, a response that did not endear him to the girls and was also totally ineffective in terms of modifying their behaviour. At times he made the distance explicit, as in

JJ : We're revising fractions, largely because you're not very good at these ...

Cherie : Oh Mr. J. we're alright ... we try

Although this classroom was distinctive in that the general level of control exerted by the teacher was spectacularly bad, as was the level of performance of the students, the girls can still be seen as positioning themselves as learners and actors in the situation in ways which were very similar to those in classes at Midstone Girls' characterized by a much higher degree of discipline and work, such as the previously described advanced maths class. Girls in both classrooms operated within a distinctly collective group ethic and in both rooms mathematics was presented as a subject that was important, impersonal and difficult. The ways in which the differences in classroom treatments reflected teachers' perceptions of their students and attitude to mathematics will be discussed further in the section talking with teachers. The processes observed in mathematics classrooms were both like and unlike those observed with these groups in other subjects.

Year 10 English : FL's class.

This class was the same as DB's advanced mathematics group. FL had been teaching senior English at Midstone Girls' for several years and was committed to fostering a delight in English literature in her students, as well as equipping them to write competently. She was a kindly respected figure in the school and her love of literature was widely

recognized. She believed that girls' education was facilitated in an all girls' environment.

Some excerpts from the field notes :

The class is studying Romeo and Juliet, and the teacher, FL, introduces the play by initiating a discussion of differences between the sixteenth and the twentieth centuries. The homework had been to find out about pastimes in the sixteenth century and several girls volunteer fencing, jousting, rapier work, hunting, hawk-assisted hunting etc. . When asked about current pastimes the girls volunteer gangs, motorbike riding, football etc. . In both cases all the pastimes mentioned are those to do with male pursuits, a feature which is not raised in the class discussion. If women were mentioned at all it was in terms of their beauty or their marriageability. Marriage customs were also discussed in readiness for the playreading. During lessons for the next two weeks the class watched a well produced video of Romeo and Juliet. Discussions at the end of the sessions centred on how the girls reacted to one or other of the central characters, culminating in the final scenes which were the occasion of much weeping, including FL.

Feelings were celebrated in this section of the English course, creating an atmosphere markedly different from that of their other lessons, notably mathematics. The girls clearly enjoyed the play and entered into the experience undaunted by difficulty with language. Nor did they appear selfconscious about the extent of personal involvement with the central characters. The discussions were characterized by a high degree of contribution - although essay writing on the topic was less happily attempted. At the same time it must be said that despite the evident success of this play within the English curriculum, the manner in which it was taught was highly traditional and operated at odds with some of the messages of the rest of the school in that it positioned the girls as onlookers and also as potential romantic heroines rather than newstyle women into computers and other non traditional activities.

Year 10 : Science : JC's Class.

JC is the senior science teacher. He has been at the school for several years and knows some of the girls from previous years. The atmosphere is friendly, relaxed and yet work oriented. The girls ask many questions - in fact all the student-teacher interaction is initiated by the girls in one lesson. JC is committed to teaching girls in single sex classes and had initiated such a setting at his previous school. However he does not see any point in forcing girls to do maths and science, which he believes are the difficult subjects and only appropriate for the brighter students.

Classroom interaction style is similar to that which operated in the maths class with the teacher/expert and the students waiting to be informed. Although questions are much more likely from the group that has emerged in the maths classroom as the bright ones, the girls once again take up the role of demanding help and injecting a personal element into their demands, e.g.

Sherrill (having waved her hand for some time) : Mr C. (aggrieved) .. I've been waiting ..

MC : Oh, I'm sorry, Sherrill ... how could I possibly ignore you?

At another time one of the girls was apologetic for asking so many questions, as in

Megan : Mr. C. ... sorry! This is the last time!

There are clear communication lines in this classroom and it is the teacher's setting of a work oriented agenda which operates with group support.

Year 10 Commercial : DK's shorthand class.

This was the group that had performed disastrously in JJ's maths class. The atmosphere in shorthand was vastly different. Here it was heads down quietly working, interspersed with teacher led exercises and tests. It may be argued that the career relevance of the subject caused the girls to attend and yet many of them had no hope of using their

shorthand in the workforce, being most aware that the demand for this skill had become virtually nonexistent. Much more to the point was the cool businesslike style adopted by the teacher and her clear expectation that they behave themselves and get on with the work in hand. Because the nature of the subject required careful attention to sounds talking was at a minimum. The teacher's expertise was evident; she had worked for ten years as a shorthand typist in a senior clerical position. The girls reported later that they felt they had to work hardest in this subject. They did not like the work, but they respected the teacher's competence. The expert-novice position was evident in this classroom and thus fitted with the girls' adopted learning position. Instruction was detailed and nor was there the need for understanding - the acquisition of the skill was the goal clearly set.

In summary, classrooms at Midstone Girls were characterized by a higher degree of difference than at Midstone High, and the difference appeared to be associated with the differences in teaching style and expectations, more than differences between subject areas, although these also existed. The impression was of classroom groupings being more united in their different responses to the differing environments i.e. the same group of girls would be noisy in P.E., self conscious in English, outrageous in Science and reasonably work oriented in mathematics.

E. : Talking to Teachers.

Interviews with teachers at Midstone Girls' revealed a fundamental division that existed between views of girls' education. This division has long been the subject of debate in the histories of women and education and had to some degree been resolved by the setting up of some girls' schools as committed to academic education and others to providing education in domestic science and traditional women's areas. On the one hand, in the legacy of the technical division in which the school had originated, there was the position that education at Midstone Girls' meant a training in life skills as would befit women

destined to become wives and mothers. The skills connected with running a household were seen in this view as essential components in girls' education. The opposing view was that girls should be encouraged to fulfil their potential and aspire to as fully rigorous and academic an education as possible. This view was strengthened by statistics showing that women's participation in the paid workforce had greatly increased such that the majority of the girls at Midstone could anticipate being in paid work for most of their adult lives. Rendering them employable was taken on by the school as part of its responsibility. While few of the teachers still held exclusively to the first position, many of them were located somewhere between these opposing views, in that they espoused the academic orientation but at the same time felt that the girls 'weren't up to it'. Some cases in point :

The principal, MR, was strongly committed to improving the academic education of girls and had publicly claimed that single sex schooling was the preferred path in this endeavour. However, there were particular problems at Midstone Girls' that emerged as a direct result of its position as a girls' school. The practice of primary school principals counselling their less able girls to enrol at Midstone has already been noted. There was also a problem at staffing level in that MR reported that the school had several staff members who had been placed at Midstone because they had not been coping in the 'real' world of a mixed school. Having described these staff members as 'emotional cripples', MR also identified another department strategy which was to place teachers nearing retirement at her school as a means of 'gentling' them out of the teaching force. MR felt that in order to be effective in adapting Midstone Girls' to her vision of an ideal educational environment for girls, she had first to persuade the regional office to cease the practice of using the school as a 'dumping ground' for the less able students and staff. At the time of the study this had not happened. MR felt that the open caring atmosphere which operated at the school had both positive and negative effects. While at one level the warm relationships between teachers and students and fostered in the whole school orientation was seen as a good thing, MR was also concerned that for some of the staff the girls were seen as needing to be protected rather than prepared for living.

In general the teachers who were more recent appointments at the school shared the principal's philosophy of the importance of an academic education for girls and were positive about the benefits of a single sex environment. Both MC and PS welcomed the principal's commitment to maths education and had deliberately applied to come to Midstone to teach girls. Others were less clear. SM had been appointed to 'the only school I hadn't applied for' but felt he had settled in well. He was still surprised at what he described as '*how little they know and how uninterested they are*', a static perception that seemed to rest on the female quality of the group rather than the teacher's role in arousing interest. AS had come to Midstone because of the promotion opportunity - he was the maths senior - but he held very negative views about his students. "*I taught some fairly slow boys at ... Tech before I came here but I never had them as dumb as some of these girls!*" he said during interview. JJ felt that the press to involve more girls in maths and science was inappropriate given their lack of interest and ability. DB felt that maths standards had fallen during her seven years at Midstone. In different ways all of the maths staff interviewed felt that their subject was an important indicator of student ability and that there were real problems in the task of teaching maths to the less able. All of the staff were aware of the school's getting more than its 'fair share' of less able girls, and certainly the maths-science staff frequently mentioned this factor as one of the problems they experienced in teaching at Midstone Girls'.

Among the humanities teachers there was also some resistance to what was seen as 'forcing all the able girls to do maths and science'. MM was particularly vocal in her judgement that the '*new emphasis on competition and achievement - to be seen equal to the boys - is educationally disastrous*'. However the social education teachers and the school counsellor were very supportive of the new directions, and felt that MM was overly protective of her girls. MM was bitter about the lack of support for some of the courses she had developed such as the one on 'mothering skills' and inclined to resent the press for new directions.

Midstone Girls' school staff represented a whole range of positions on the issue 'girls and education'. As can be seen from the preceding section individual teaching philosophies gave rise to different styles of classroom treatments which meant that there were real differences in the classroom experience of different classroom groupings, even within the same subject discipline. The fact of the all female student gender context meant that teachers tended to describe their educational theories in terms of their relation to girls as a group. The concept of the individual was less a feature of teacher talk in the girls' school than at either of the schools previously discussed, a perception that resonates with Walkerdine's claim that the "individual" is far from a gender neutral educational concept, but rather is geared to normative descriptions of males (Walkerdine,1984a). At Midstone there was a strong group element operating as a feature of the classrooms described. The girls as a group responded to the individual styles of their teachers.

F : Knowledge and the curriculum.

The positioning of particular subject areas within the timetable is one way in which the valuing of certain areas of knowledge becomes obvious. Thus in primary school, as was the case at Midstone Primary, maths is normally taught in the mornings, art in the afternoon. At Midstone High maths took up more lessons per week than other subjects, both at year 8 and at year 10. At Midstone Girls' this was not the case. The year 8 students at Midstone girls had one less maths lesson per week than their peers at Midstone High, and the girls at the girls school had the same number of maths lessons per week as they had in science and English. The male deputy principal at Midstone Girls', who was also in charge of the timetable, explained the allotment in the following terms :

" Look we recognize that the majority of these girls will not be doing maths in senior school, so why make them suffer a subject they don't care for any more than is necessary?"

Apparently the maths staff were offered one more class at year 8, but the maths senior

declined on their behalf, saying

AS : Let them do something they're good at, like history or geography, rather than require them to do something at which they're no good - and are never going to make it.

By year 10 the maths allocation varied with the standard of the class with the advanced group having seven lessons per week and the standard group only five.

In terms of content of the maths curriculum , profound differences were immediately evident between the level being undertaken at the girls' school compared to the mixed high school. Only in the year 8 advanced class was the maths content comparable to what was offered at Midstone High, and given that the girls' school students had one less lesson per week it would seem unlikely that comparability would be maintained even by the end of year 8, much less afterwards.

In areas other than maths and science the girls at Midstone Girls' had more opportunities for choice and fewer restrictions when compared to the year 8 classes observed in the mixed high school. For instance at year 8 level students at Midstone Girls' could opt for both history and geography, rather than choosing one or the other, and there was a wider choice of languages as Italian and Greek were possible choices along with German and French. The school staff had developed curriculum innovations in social education and living skills in recent years and the general attitude to curriculum innovation was a good deal more flexible than that encountered at the mixed high school.

Because of the small numbers staying until year 12, (at the time of the study there were 40 year 12s out of a total student body of 650), the school curriculum appeared less dominated by the demands of the tertiary sector than at the mixed high school. The negative aspect of this feature was that girls who did want to undertake the standard academic curriculum, especially if they chose maths and sciences, found that they needed to do extra work to

make up for the teaching time they had missed in the junior high school years. As has been noted above this situation was a source of friction for some of the teachers, most notably those responsible for senior maths and science.

G : Sport at Midstone Girls' High.

Organized sport was much less a feature of life at Midstone Girls' than it had been at Midstone High. This situation was no doubt partly due to the large number of bus travellers who had to leave directly after school and were hence unavailable for training sessions. There were some school teams but the Physical Education staff were committed to a position in which regular physical activity took precedence over the promotion of sporting teams. The physical education teachers were strongly in favour of the girls only environment, saying

You can get them to perform even without the 'proper gear' - they are so much less self conscious.

They do get to use all the facilities here - at other mixed schools the boys always commandeered the facilities.

Again the clear implication from such comments is that the girls' response is influenced by the gender context - it is the presence of boys that makes them self-conscious - but that the boys' propensity for 'commandeering' is part of the male nature, a given that is beyond the realm of possibility for teachers to affect. This type of slippage in which teachers give a mixture of psychological and social explanations for gendered behaviour was a constant feature of discussions with teachers on the subject of gender. It is the contention of this work that such slippages are a result of the ways in which gender is represented in educational discourse as operating as a psychological variable or as a social construct, and either way as an immutable force.

There was not a strong parental interest in school sport at Midstone Girls', a contrast with the two previous schools in which school sport had developed a strong parental following

largely in connection with the boys' football teams. Neither did sport play a central part in assemblies and news bulletins, which at Midstone Girls' tended to contain items of community interest - such as planned excursions for a particular class with students reporting, or announcement of school visitors or the return of students or teachers who had been absent for some time.

Despite the relative lack of attention to organized sport, the girls at Midstone Girls' appeared to engage in physical activity to a much higher degree than did the girls at the mixed schools. It seemed that without the male presence the symbolic value of sport as signifying performance in the public arena was missing. The absence of boys did not render them unimportant however, and as will be discussed in section I, 'the boys' were a constant focus of discussion and meaning making to the girls at the girls' school.

H : Some points of comparison between the schools.

Life at Midstone Girls' was in many respects more similar to life at Midstone Primary than at the mixed high school. The whole school orientation in which teachers were positioned as guardians as well as the imparters of knowledge was a strong feature of both the primary and the girls' high schools. However the different orientations within the primary school, noted in chapter 4, in which the male staff typically operated at a more distant level, albeit within the generally nurturant ethos of the primary school, was re-evoked in the girls high school by the maths-science staff. Many of the latter were male teachers - 7 out of 12 - and their teaching style in interaction with subject content emerged as less personal, less concerned with aspects of daily living than other subjects.

In other respects there were similarities between attitudes at Midstone Girls' and those at the mixed high school. In both schools the girls expressed negative attitudes to mathematics, as in

Tammy : You'd have to be really weird to like mathematics!

but whereas at the mixed high school the girls also regarded maths as an important subject in which boys were brainier, at the girls' high school the girls were not so impressed by the importance of mathematics although they were equally likely to describe it as an area in which boys excelled. Girls at Midstone Girls' gave a range of subjects as 'important' and also listed a range of subjects as 'the one I work hardest in'. In other words their attitudes were less informed by the unofficial school subject hierarchy which places mathematics as both difficult and important than were the girls at the mixed high school. Girls at both schools were inclined to see maths as a boys' subject , along with science.

Such expressions must be read against the fact that Midstone Girls' did not have the strong academic reputation of Midstone High and relatedly that a smaller proportion of both year levels interviewed saw themselves as likely to complete secondary schooling, even fewer doing maths at year 12. However this finding does lend support to the argument that in the current secondary school curriculum in Australian schools, the concept of academic worth is constructed in terms which have pronounced gendered associations such that to be academic means to study particular subject combinations which are seen as both difficult, important and male appropriate (Gill,1984; Fomin, 1985).

Another aspect of classroom processes at the two high schools connected with different outcomes concerns the understandings the girls gained of their own ability in mathematics. The pen and paper testing in which all classes were engaged at the end of the observation period included an item for the high school classes which asked the respondent to imagine they were in a maths class of 30 students and to give themselves a rank number in terms of comparing their performance with that of their peers. (See Appendix II) Not only did this item give rise to pronounced and predictable gender differences, with the overwhelming majority of the boys placing themselves in the top half of the class and a similar majority of girls placing themselves in the lower half (see Table 6.1), but also and possibly more importantly the girls in the girls' school appeared to have a much more realistic

understanding of their position in class than did the girls at the mixed school. As shown in Table 6.2, the girls from Midstone Girls' who were identified by their teachers as the "best five" in their class tended to have given themselves a high ranking, whereas at the mixed school the boys who appeared in the teacher's 'best five' had assigned themselves a high rank, the girls who were in this group were unlikely to have done so. The suggestion is that the processes described in the mixed classroom tend to mask the girls' perception of their own ability at the same time as highlighting that of the boys. The situation in the girls' school was such that without the presence of the boys, the girls obtained a clearer idea of how they ranked, although this did not mean they regarded the subject any more favourably than did the girls in the mixed high school.

TABLE 6.1
Percentage students in each ranked group
(Real numbers in brackets.)

<u>Rank</u>	<u>GIRLS</u>		<u>BOYS</u>
	<u>Girls' School</u>	<u>Mixed</u>	
0- 5	10 (6)	10 (4)	28 (11)
6-10	30 (18)	10 (4)	28 (11)
11-15	31 (19)	17 (7)	15 (6)
16-20	16 (10)	31 (13)	14 (5)
21-25	5 (3)	19 (8)	8 (3)
26-30	8 (5)	14 (6)	8 (3)
<u>N</u>	<u>61</u>	<u>42</u>	<u>39</u>

While this measure makes no claim to be a rigorous indicator of students' perceptions of their own mathematical ability, it does indicate gender differences in self rankings that are consistent with the general argument of the thesis, namely that schooling processes operate in ways that support understandings of public success and achievement as male appropriate in the environment of a mixed school. The tendency of the boys to overestimate their ability was evident in the many more boys placing themselves in the group of high achievers than were listed in the teachers' rankings, and in the presence of boys the girls in the mixed school tended to underestimate their ability (Table 6.2).

TABLE 6.2

Teachers rankings compared to student self-ranking

Midstone High School : Year 8 Mathematics classes

<u>Standard Level 1</u>	Top Group : 3 girls (15, 20, 26) 1 boy (6) Low achievers : 3 girls (19, 20, 27) 2 boys (5,15)
<u>Standard Level 2.</u>	Top group : 5 girls (5, 10, 15, n/a, 23) Low achievers : 3 girls (n/a, 19, 25) 2 boys (12,21)
<u>Advanced Level .</u>	Top group : 2 girls (5, 18) 3 boys (2, 3, 3) Low achievers : 3 girls (10, 20, 25) 2 boys (18, 28)

Midstone Girls' High School : Year 8 Mathematics classes

<u>Basic level</u>	Top group : 5 girls (10, 15, 15, 20, 24) Low achievers : 5 girls (12, 15, 20, 30, 30)
<u>Standard level</u>	Top group : 5 girls (2, 3, 4, 5, 17) Low achievers : 5 girls (7, 15, 15, 17, 18)
<u>Advanced level.</u>	Top group : 5 girls (4, 7, 9, 10, 10) Low achievers : 5 girls (14, 15, 20, 20, 25)

Midstone High School : year 10 mathematics classes

<u>Standard level</u>	Top group : 3 boys (1, 1, 5) 2 girls (15, 26) Low achievers : 2 boys (7,15) 3 girls (25, 27, 30)
<u>Advanced level</u>	Top group : 3 boys (1, 3, 6) 3 girls (8, 10, 20) Low achievers : 2 boys (n/a, 15) 2 girls (14, 15)

Midstone Girls' High School : year 10 mathematics classes

<u>Standard level</u>	Top group : 5 girls (3, 4, 12, n/a, 30) Low achievers : 5 girls (15, 30, 30, 30, 30)
<u>Advanced level</u>	Top group : 5 girls (1, 2, 3, 2, 3) Low achievers : 5 girls (15, 20, 25, 30, 30)

I : Students speaking.

A striking feature of the interviews with girls from Midstone Girls' was the way in which the girls responded to questions about life at school. Their responses were more carefully thoughtful and aware of others than had been the case in the other two schools. It was as though the interviewer was raising issues that had constituted discussion topics among themselves and hence they had well developed opinions on issues such as the experience of being in a girls' only environment, their attitudes to particular teachers and subject areas, and their general response to schooling.

The year 8 students at Midstone Girls' registered the transition to high school as one which involved more and harder work than primary school, as had their peers at the mixed high school. However the girls were prepared to admit that while in general the high school teacher's role was more distant than the primary teacher's position, *'there are some you feel quite close to'* - a perception which was consistent with the generally pastoral approach adopted by the girls' school. A much more important feature of their high school experience was the absence of boys. All the girls at Midstone Girls' had attended a coeducational primary school and were therefore used to the dynamics of mixed classrooms. In the interviews many girls expressed the feeling that life in mixed schools, coeducation, was 'normal', and their situation at Midstone Girls' was therefore not normal.

Rose : I really noticed it (the absence of boys) when I first came here ... you get used to it after a while I suppose.

However for some the non presence of boys was a continuing negative feature of life at Midstone Girls', as in :

Samantha : Oh we miss the boys! (Others, Cheryl, Jane and Melissa nod in agreement.)

JG : Why? What do you miss about them?

Cheryl : Oh they used to muck about and do such naughty things ... some of the boys in our class last year were real devils... (chuckles)

JG : But aren't some of you and your classmates up to all sorts of tricks?

Cheryl : Yeah, we do ... but it's not nearly so much fun as it was watching the boys ... (Again the others nod their heads in agreement.)

It seemed as though during their primary schooling the girls had positioned themselves as audience, as the watchers rather than actors in the public classroom arena, and that they were comfortable in that position and almost resented being thrust into the spotlight in the all girls situation. At the same time announcing that you 'miss the boys' was a way of declaring oneself somehow sexually maturing, an orientation that took on special significance in the all female environment. At times this was made explicit, when in response to the question 'why did you come to Midstone Girls?' Julie said :

Oh my dad wouldn't trust me around boys!

a statement which the speaker relished as though indicative of newly acquired sexual power, and somewhat surprising given that the speaker was a plump young-looking 12 year old. Elements of sexuality threaded through the girls' conversations, especially in response to being in an all girls setting. While the girls from Greek and Italian backgrounds were among the most vocal about their preference to be with the 'guys' and resentful of the single sex environment, other girls had a different problem. It appeared that the non-normal nature of the girls' school created some embarrassment for the girls in weekend social situations involving male peers and their practice was to disguise the fact that their school was a girls' school :

Cherie : It's embarrassing - if someone asks me 'where d'you go to school' at the weekend I say I go to Midstone High - I leave out the "girls" part 'cos it sounds strange.

Jane : Yeah, it's not fair - other schools don't have 'girls' in their name so why do we

have to?

Melissa : If I'm asked I say "Where do you go to?" and then if they say Kelly Bay High I say 'Oh I go to Weeroona' and get out of it that way.

JG : But what's the problem with saying you go here?

Jane : They say "a girls' school!" "That's weird - you must be queer!"

Melissa : Yeah and they say we're all lesbians at this school. Lesbian bitches.

For these year 8 girls the task of acclimatising themselves to their high school clearly involved questions of public image and sexuality in the world beyond school in ways which were more difficult than getting used to schooling processes in a girls only environment. The sense of embarrassment at the non-normal nature of the girls' school was much more a feature of the year 8 interviews than the year 10s. However some of the older girls were also critical of the single sex environment in that they felt it resulted in girls becoming 'boy mad'.

In other cases year 8 girls gave positive reasons for choosing a girls' school that were consistent with some current educational argument, but here too the construction of themselves as somewhat sexually preoccupied was a continuing feature, e.g.

Priscilla : If there's no boys you sorta learn more 'cos you don't have boys on your mind.

Tania : Mum said you can't really concentrate with boys around ... you worry about what you look like ..

Mandy : I like single sex better because I'm shy and it's easier to do your work without boys mucking around and distracting you ...

Susan : Since year 7 when boys and girls start to like one another it's hard to concentrate on your work.

In these statements it seemed as though the girls were echoing things they had been told by their parents (as with Tania) or by their teachers rather than having discovered such things through their own experience. The year 10s adopted a slightly different approach which

involved a developing understanding of gender roles in terms of their own experience, as in

Philippa : Boys try to be naughty on purpose, 'cos that's how to be great, whereas girls try to be good.

Carrie : In primary school girls are good and boys are bad, but here without boys girls can take over the boys' role.

Philippa : At the beginning of year 8 I thought it was a bit funny (to have no boys) but by now we get a better chance.

Lisa : Yes in year 8 I didn't like it being all girls ... but it doesn't really bother me anymore.

Sarah : You don't have to worry about how your hair is, or getting changed in the classroom, or things like that ...

Lisa : We just let our hair down because there are no guys around ... we know that one day we'll have to settle down ...

While the year 10s were more vocal than the year 8s about the benefits of a single sex education as seen in the above examples, there were other year 10s who took a different position :

Renee : Boys would make it more exciting.

Erica : And the girls wouldn't be bitchy if there were boys around ... I'd rather be at a mixed school where they're all good friends. Some of the girls here are boy mad ...

In many respects the girls' understanding of the advantages and disadvantages of going to a girls' school reflected the ambiguity and complexity of the research literature that has addressed this question (Gill, 1988). They were aware of and enjoyed the freedom and protection afforded by the all girls environment, and experienced the awkwardness of the institution's being at odds with life in the real world, especially at year 8. Some of them registered an awareness that the artificial constitution of the girls' school rendered the boys as especially important by the fact of their absence, resulting in some of the girls becoming 'boy mad'. While popular accounts of girls' schooling frequently include allusions to the

salience of 'the boys' in terms of the girls' preoccupations the impression is of young people caught up in inexorable sexual forces rather than one of girls' reacting in fairly predictable ways to the heightened valuing of male activity, male experience and indeed male presence. While accounts of boys' schooling in single sex environments usually include reference to girls and sexuality it is not usual to describe boys as a group as 'girl mad'. The point here is simply that the issue of single sex schooling gives rise to different effects in terms of the focus being on males or females, and that these effects are constituted by the connection between schooling and the wider society.

One particular aspect of the curriculum at Midstone Girls' which drew repeated negative comment from the year 10s concerned the press from the social education teacher for the girls to think of employment in non-traditional areas. Programs to attract girls into such areas have attracted a good deal of publicity (see for example, Foster, 1986) and it was not surprising to discover that considerable support for such initiatives was to be found in the environment of a girls' school. Some of the year 10 girls strongly resisted this move :

Samantha : This school's trying to turn us into macho women !

Roberta : Yes they are .. they keep on about women in this, women in that ...

Samantha : I hate it ! They want us to do mechanics! Why can't we just be normal?

Roberta : Yeah we just want to be normal and have fun..

At this stage the group burst into the pop song "*Girls just want to have fun*", in evident enjoyment of being able to give vent to their resistance.

Erika : It's too much. They still want us to be pretty and neat too ... this school is so ... they don't ask you ... there's so many pamphlets around about car mechanics ...

Sally : Yeah we've gotta be plumbers ... and ladies too .. and non-traditional ...

JG : And what do your parents think about this?

Erika : Oh they're glad I'm not like that! (The others agree, nodding.)

Once again in this example it is the non-normal aspect of the non-traditional activities press

which is being resisted by these year 10s. The girls had come to terms with being in a girls only environment and were aware of the advantages in terms of the freedom it afforded them, but they were also eager to identify with the standardly accepted feminine and traditional version of woman, a discourse they happily identified with their song : *Girls just want to have fun*. It was as though they were prepared to accept the school's official message while at school but regarded it as clearly inappropriate for life beyond school in which the older traditional discourses operated.

Questions about their experience of schooling gave rise to interesting comments about their perceptions of teachers. Many comments were in terms of the perceived personalities of the teachers, as in :

Lilian : Oh Mr T. .. he didn't show any emotion .. he's hopeless ..

Cassie (talking about maths teacher) : Have you noticed the sarcasm? She always says things like "I'm so glad you came .." if you're a bit late, or "I can't believe you don't understand .." when you're having trouble getting something.

At times the girls consciously used their awareness of teacher's personal style to have fun at their expense, as in the following excerpt from the year 10s :

Cassie : With Ms. T. ... everything we do is brilliant to her! Last week we acted crazy for a scene and she thought it was great. We didn't know what we were doing we were just fooling around, and afterwards Jill said "Could you understand the absolute meaning of that bit?" and she said "Oh yes I picked up that point .." and it was all rubbish.

Feelings were continually referred to in these discussions - the girls spoke easily of how they felt in particular classes usually in response to the persona of the teacher, but also taking account of the group. Even in the case of the unfortunate science teacher, DL, whose lessons were frequently the sites for the girls' maximising their powers of

distraction and determined non-attention, the comment came repeatedly : *Oh I feel sorry for Mr. L. really .. 'cos he can't control us.*

The girls' responses to different classrooms were generally in terms of the quality of their experience, rather than the usefulness of the knowledge area or the sense of learning accomplished. The situation recalls Willis' analysis in which he saw the 'lads' opting for the short term gains such as their power in the classroom and having fun instead of the longer term advantages such as getting qualifications (Willis,1978). For the girls at Midstone Girls' the quality of the personal encounter in the classroom took precedence over other functional aspects of schooling. This attitude had both positive and negative consequences. Firstly it was important for teachers to take account of the girls' demand for some sort of personal encounter in the classroom and to reveal something of themselves as human beings and not just impersonal bearers of knowledge. Some of the teaching observed at Midstone, especially in the areas of humanities and languages, provided an excellent example of teacher and class developing a knowledge area in which the learning was informed by personal constructs as well as abstract principles. The girls expressed negative attitudes to subjects which were taught in impersonal abstract terms - as was the case in several of the maths-science classrooms. It appeared to be a question of balancing new knowledge or skills with a particular approach. In discussing their difficulty with science lessons the year 8 girls said :

Rose : Science is hard - but I think that's mostly because of the teacher, the way he goes on and he can't control us ...

Saadia : I like talking about it . I think you learn more that way - I never read through my notes.

Rose : Yes all we do is writing notes from the board - we're never going to really understand it like that.

In this excerpt the girls' comments are in line with sophisticated learning theory in terms of

their expressed need to translate the information in terms of their own experience in order to understand it. At the same time their position is also one of seeking some personal connection with the area being taught, some way of making the knowledge their own and maintaining a balance between the work and themselves as learners.

At other times the personal intruded so that learning was not fostered. This was seen to happen in MM's English classes in which her desire to protect the girls caused her to emphasize their lack of confidence and reluctance to take the initiative such that these aspects of their behaviour became confirmed rather than challenged. Elsewhere in classes such as AS's mathematics the teacher's relaxed friendly manner and slow pace contributed to an atmosphere in which mathematics learning was unlikely to proceed.

The year 8 girls at Midstone Girls' talked about their understandings of gender in the institutional structure of schools in ways similar to some of the Midstone Primary students. In discussing the primary school experience the following exchange occurred :

Stephanie : In primary school as you get higher there's more men .. sort of like the ladies uh women or whatever .. teach like the preps 'cos they basically know how they feel - you know - sort of like mother instinct. When you're older it's more stricter...

Deborah : Women are more softer on little kids aren't they? They understand and things like that ...

Some of these year 8s also felt that there were differences between the male and female teachers at Midstone Girls', e.g.

Liane : Men teachers treat you with more respect - you are more individually treated, whereas with women teachers you are more 'one of a bunch'.

Most of the girls felt that there were not generalizable differences between male and female

teachers, but that it all depended on the individual. At the same time it was clear that some gender effects of institutional structure do impinge on students' developing awareness of the possibilities for men and women in the world, such that women are seen as more appropriate for working with small children and possibly less appropriate for leadership positions. As noted earlier some of the year 10s asserted that the female principal had been 'let have a turn' by the male deputy principal, and even after she had been working as principal for over six months one year 10 commented in interview : *I always thought men were leaders. I never thought a woman could run a school.*

J : Summary

The fact of being in a single sex environment was clearly related to the girls' having a clearer sense of their presence in the world of school and their understanding of processes connected with learning. Without the restrictive effect of male presence (an effect which incidentally , at least by high school, may well have related more to what the girls were thinking than to what the boys were doing) Midstone Girls' High School provided opportunities for girls in a wider range of school related behaviours than was the case at the mixed high school. Girls at Midstone Girls' engaged in more physical activity in the schoolgrounds, participated more fully in the construction of classroom processes than did their peers in the mixed high school, and they were aware of this :

Mandy : Girls are naughtier in single sex!

It is important to note that contributions to classroom interaction were still restricted to some class members and that there were girls whose silence was comparable to that of some of the girls in the mixed school. However in the absence of the clear gender division which operated in the mixed classroom these silences were not interpretable as a function of being girls but rather in terms of particular personality constellations. The differences in style of classroom contribution between the girls at Midstone Girls' and the students at Midstone High emerged as more noteworthy than the amount of contributions themselves. The girls at the girls' school appeared very ready to admit "I don't understand!" whereas in

the classes observed at Midstone High this statement was relatively infrequent. Given that several of the teachers revealed an understanding of learning in which gender and ability were important and interrelated variables, the Midstone Girls' classroom interactions could be interpreted at face value as evidence that these girls were in fact less intelligent and not able to grasp the work. In fact many of the teachers, particularly among the maths-science faculty, appeared to have accepted this explanation, fitting as it did with the understood recruitment practices at the school. It is argued here that the situation is a good deal more complex than this interpretation would suggest, and that the girls' responses are better understood as a response to features of their situation, in the following terms :

The classroom groupings at Midstone Girls appeared to be much more malleable than the groups observed in the mixed schools. At Midstone Girls' the same class would react quite differently with different teachers. To some degree this was one of the shared understandings of schoolgirl culture within which the girls operated. Not only was there a sense of some teachers being 'stricter' and more in control than others but here there was also a group cohesion that was afforded by the gender context wherein all the girls acted together to be 'shy' with MM, outrageous with DL, quiet with SM and businesslike with DK, in ways which generally confirmed the impression the teachers had of them in the first place. Thus the classes worked to mirror the constructs brought by the teachers of the classroom and of their role in it. This is not to suggest a straightforward Pygmalian effect was at work here (Rosenthal and Jacobsen, 1976) but rather that the teacher's expectations together with the complicity of the girls only grouping led to the outcomes described.

At the same time these teachers involved the girls more as co-constructors of the learning experience. Questions of "where were we up to?" are a fairly familiar feature of classroom life and they occurred frequently at Midstone Girls'. In addition there was the practice of checking for understanding "Would you like me to go over that again?", again a fairly common feature and one which revealed the teachers' expectations of the girls' ability and the task difficulty, leading into the "I don't get it" response also commonly heard. In many

lessons the girls were able to virtually set the pace by their demands for more explanations or their calls for more time to copy notes or work out problems.

Conversations with the girls revealed that their responses to particular subject areas were usually couched in terms of their impressions of the teacher associated with that area. While the dominant feature of classroom experience for the girls was the persona of the teacher, for the teachers it tended to be the fact that they were all girls, as evidenced in the frequent use of "Ladies", their difficulty in remembering everyone's names, their readiness to accept the proposition that girls are not interested in or specially good at maths-science and that the school had more than its fair share of less able girls. Even teachers who professed a strong belief in the virtues of single sex teaching in the interest of female academic achievement had also incorporated some aspects of the protectionist approach of MM in the sense of also believing that the girls needed the compensatory environment of the girls' school. Consequently there was a cyclical effect wherein the teachers' preconceptions of particular problems within the all girl school environment were confirmed by their experience of classroom teaching within that environment. The positions taken by the teachers with respect to girls and education represent the range of ways in which psychological theory has treated 'sex differences' and sociological theory has presented the concept of disadvantage. The static determinism of the theory was reflected in the teacher's analysis of the gender context in which they worked and their acceptance of the question of girls as learners as a problem.

That girls are socialised in ways that render them more aware of and susceptible to environmental effects than boys is a long standing psychological truism given empirical legitimacy in the field dependence embedded figures work of Witkin (Witkin et al., 1962; Witkin et al, 1977). The concept of interpersonal awareness which is the personality variable related to the cognitive effect of field dependence resonates with the concept of empathy as developed by Gilligan in her critique of Kohlberg's moral development theory (Gilligan,1982). Thus the malleability of the classroom groupings at Midstone Girls' can

be seen as operating within a discourse of feminine behaviour whereby girls and women behave in a manner that is responsive to the particular social context. Such behaviour is more revealing of the terms of the discourse than of the girls' capacity as learners. This is not to argue that within a discourse of femininity girls are not positioned as learners. They are, but the focus of their learning is directed towards traditionally accepted feminine behaviour, learning how to appear attractive and to behave in ways that are friendly and compliant. As the Midstone High girls said in interview : *We might know things - but it's not subjects!*

In many respects Midstone Girls' High operated in ways more similar to Midstone Primary than had Midstone High. The whole school orientation was maintained, as was the pastoral atmosphere whereby the school took on a guardianship role vis a vis the students. The personal aspects of learning were not downplayed as they had been at the high school and the pursuit of impersonal forms of academic merit was not a feature of the classroom experience at Midstone Girls'. In terms of the analysis presented in the previous chapter Midstone Girls' avoided many of the schooling features identified as contributing to the construction of gender as a process of oppositional location such as had characterized student experience at both of the mixed schools previously described. However there were aspects of life at Midstone Girls' which maintained the gender location of the students at both the overt and covert levels.

Firstly the very existence of the girls' school underscored the special nature of its students. All the girls had experienced coeducational primary school and had understood it as the normal natural form of schooling, and hence coming to Midstone Girls' produced particular issues not the least of which was justifying the choice to their former classmates. Having taken up positions within a discourse of schooling that was constructed in coeducational terms the year 8 girls at Midstone Girls' High had to reconstruct their understanding of schooling in the light of their current situation in a girls' school. Similarly their teachers, who had developed an understanding of teaching in a coeducational environment and been

trained in educational discourse in which the 'child' as universal subject was presented in male appropriate terms and 'the girls', if they appeared, were presented as problem, were rendered highly aware of the gender composition of the student group insofar as it was atypical, being all girls. The environment thus produced was one in which gender construction was seen to thrive; the constant barrage of reference to the 'special' nature of the school and the gendered position of girls as learners were examples of the way in which this environment was constitutive of gender difference. Thus the girls' school practices constituted gender in the absence of male students, just as surely, although in different ways, as did the practices within the coeducational school. In the absence of boys the girls were more inclined to generalise about males: "*Boys always get the attention ...*", "*Boys are always mucking around ...*". These girl students understood the reason for the establishment of their school, and for their attendance at it, in ways that added to the depiction of the student world as comprised of two gender distinct groups, an understanding in which they positioned themselves as females in need of the protection of the all female environment so that they could proceed with their learning.

The investigation of the curriculum content at the girls' school reveals that in fact the learning experiences afforded these girl students were in some respects similar to those offered at the mixed school. Mathematics lessons were by and large taught in traditional relatively impersonal ways and the subject was regarded as one in which student ability was most clearly connected with achievement. Given the timetable comparisons between the high schools it would appear unlikely that the girls from the girls' school would be as successful in senior mathematics examinations as those at the mixed high school. Nor did the girls from Midstone Girls' appear more favourably inclined towards the subject. The fact of the girls only environment did not appear to transform the traditional functioning of mathematics and science lessons. However in the area of humanities and social education there did appear to be a more positive affect relating to the all girls environment.

It is obviously inappropriate to come to any definite conclusions about the value of girls'

schools on the basis of this investigation. The description of Midstone Girls' presented here relates to a particular moment in the history of girls' education, a story that has been changing perhaps more rapidly than that of education generally. The structures within which the school operated were seen to restrict its transformative potential. And yet there were also glimpses of transformative possibilities... . The story is ongoing.

CHAPTER 7

(T)READING THE MEASURES.

Argument. That the material in this chapter is supportive of the analysis contained in the previous chapters, viz.:

- i) that girls' response to schooling changes with years in school, whereas for boys it stays much the same;
- ii) that gender differences in orientation to particular subject areas become more pronounced with time in school;
- iii) that girls' confidence and positive self-concept diminishes during high school.

As set out in chapter 3 this research has adopted a multi-method approach, and as such buys into an important methodological debate which continues to be the focus of attention in educational research (see for example Lecompte and Goetz,1982; Smith and Heshusius,1986; Richards and Richards,1987). The debate can be summarized as follows: while there is an increasing number of researchers who argue for a mixed methods approach on the basis that the case being put forward can only be strengthened by the use of a variety of evidence on its behalf, there are others who see such a combination as untenable, claiming that the sorts of knowledge produced by quantitative methods is so fundamentally different from that produced by qualitative enquiry that it is impossible to conflate information gained from the different approaches. Besides this there is the contention that the qualitative/quantitative distinction is itself a false dichotomy (as in Walker and Evers,1984) and that most research falls somewhere in between. In general quantitative studies include reference to real-life examples of interchanges, actions or thinking to illustrate the conclusions or levels of significance that are described. Similarly many qualitative researchers seek to include numerical data, albeit of a less rigorous kind than that of their more strictly empiricist colleagues, in order to add weight to their evidence and to advance their claims for generalizability. To this end the earlier chapters of this work have included evidence from interaction monitoring, head counts, seating plans and average responses in order to give a more complete picture of the students' actions and thinking

with respect to gender. However the larger question remains, viz. "Do measures that are treated as quantifiable and statistically manipulable give evidence of features which can be understood in terms of the lived experience of teachers and students? Does the test situation relate to real life?" The following sections are offered somewhat tentatively, not in Smith and Heshuis' phrase to 'close down an important conversation', a concern shared by the writer, but rather in the hope that some more light can be shed on the issue, and that the potential and limitations of both research approaches can be more clearly delineated, as can the possibility of their combination.

Since much of the focus of this work falls under the rubric of 'attitudes' - given the broadest definition of attitudes as working at both the conscious and subconscious level and revealing themselves in action and projection as well as self recognition - it was seen as appropriate to investigate the usefulness of standardized attitude measures as a quantitative inclusion to the work. At first the researcher turned to a variety of attitude measures which attempted to tap the gender construct. Such measures are often termed measures of sex role, sex typing or sex role stereotyping. The majority of these were rejected on first inspection as they readily fell into the trap of setting up the paired oppositions they purported to measure. Given what is now known about students' understanding of question and answer routines, a schedule which asks for adjectives to be selected which describe boy students - and then girl students - is inviting bipolarity rather than measuring it. Such measures would appear to be most inappropriate for use with young students who are schooled after all to anticipate and provide (or not as they choose) the Right Answer. Other researchers, most notably Bem (1974) in her use of the concept of androgyny are still working within a masculine/feminine framework, even though androgynous individuals may be high in both areas. Again as this study attempted to tap gender-related attitudes in the making, it was considered inadvisable to use Bem Sex Role

Inventory type questions. The context of this work has not been on gender distinction between individuals *per se*, but rather gender distinction in response to a particular social environment, namely that of school.

Attention was focussed next on measures of school and classroom environment, but these were also rejected as being too wide a net from which to glean evidence of gender construction. It was then proposed to look at measures of student response to school environment, as this perspective seemed nearest to that of the research framework. School satisfaction is the general heading which encompasses many such measures. The aim of these measures is to identify student responses to school environments and to describe group responses in terms of categories such as

- (a) school satisfaction, including general enjoyment of school and positive relationships with teachers;
- (b) alienation from school, meaninglessness and powerlessness;
- (c) school related anxiety.

Each category is usually presented as a continuum with individuals able to rate themselves positively or negatively on such terms. The question of school satisfaction subsumes several issues which are central to this study, viz.:

Do boys and girls experience school differently?

If so what features of school give rise to this difference?

Are certain behaviours and attitudes to school more typical of boys than of girls? And vice versa?

Do these differences change with time in school?

Do these differences emerge in relation to particular subject areas?

An attitude measure which dealt with questions such as these seemed to be appropriate to

the present study.

A. Introducing the instrument.

The measure selected for inclusion had been developed over some years (1976-1979) in Brisbane by Power and Cotterell (1979). The particular focus of the Power and Cotterell study was the effect of transition from primary school to high school on students' attitudes to school. Aspects of the different school environments (e.g. open plan or traditional classroom) were investigated in terms of their effects on the transition experience. The measure was considered appropriate for use in the present study because it had proved useful and appropriate for use with a group of Australian school students only a few years before the present work. The range of ages in the Brisbane study was highly comparable to the majority of the subjects in the present study. The issue of transition was of interest to the present work in terms of its potential gender implications and the further question of their effect on school satisfaction. While the focus of the Power and Cotterell study was on transition from primary to secondary school and school structure in terms of classroom organization, there were some incidental findings which related to student gender, as in

*"Girls moving from self-contained primary classrooms grew dramatically in confidence (0.9 S.D.) during the transition period. In that girls are significantly lower than boys in confidence it would appear that such a transition represented the optimal path for girls in our sample."
(Power and Cotterell, 1979 , p.138)*

The study did not attempt further investigation of how these gender differences came about, although the authors did not hesitate to make recommendations about changes in school

organization 'to improve girls' confidence levels'. The problem of seeing girls as lacking, as deviates from the model of the "ideal student" who also happens to be male, has been dealt with elsewhere in this work. Suffice it to note here that such a perspective has permeated much of the writing on Australian education in recent years. While it is important to see that gender is included in the analysis, all too often the issue is speedily dealt with in terms of 'fixing up the girls'. Despite these qualifications the Power and Cotterell study does provide some useful points of comparison with the present work.

The measure, called by Power and Cotterell 'Student Attitude Scales' or SAS, falls into two sections. (See Appendix II for a full outline of the measure.) The first section, SAS Part A, consists of 36 statements about attitude to school to which students are asked to respond as True, Uncertain or False. These responses were then converted to numerical scores as 1, 2 and 3 respectively. As is standard practice in such measures, the direction of some of the statements was deliberately varied so that at times a 'true' answer denoted a favourable response while at other time a 'false' answer was the more favourable. This variation was taken into account before processing and conformed to the generally accepted coding pattern of a high score representing the positive direction in all cases. The second section, SAS Part B, contained 7 headings, namely School, English, Mathematics, Social Studies, Science, Teachers at High School and Teachers at Primary School. Beneath each heading were five sets of bipolar adjectives: interesting-dull, good-bad, easy-difficult, useless-useful and confusing-clear. The students' task was to locate themselves at some point on the 7 point scale between each of the adjective pairs. For the purposes of processing these locations were assigned a value from 1 to 7 and the directions were ordered so that once again a high score reflected a favourable orientation to the particular issue. In this way the measure investigated general attitude to school broken down in terms of some of its components, i.e. attitude to particular features of school such as subjects and

teachers at different levels. As such it appeared particularly pertinent to the present investigation.

Power and Cotterell analysed the results of Part A in terms of four interpretable factors seen as contributing to the overall profile of student attitudes. They named these factors :

- 1) General school satisfaction;
- 2) Social satisfaction ;
- 3) Work satisfaction; and
- 4) Confidence.

Items on the original instrument were seen to relate to one or another of these subscales and thus each of the four dimensions formed a part score for each subject. Aggregates developed on these subscales formed the basis of the comparative analysis of the Power and Cotterell study, and in this manner questions such as "Does student work satisfaction become affected by the transition from primary to secondary school?" were addressed.

A similar method of analysis was applied to Part B and this revealed factors which were clearly associated with the seven headings, and two additional factors, namely a 'usefulness' factor and an 'easy-clear' factor. Using the sub-scales constructed in terms of these dimensions, Power and Cotterell were able to compare year 7 students' attitude to particular subjects with that of year 8 students at two points during their transition year. This aspect of the measure was particularly relevant for the purpose of the present study, especially insofar as it would allow for a comparison of gender differences in attitudes to particular subjects across the transition from primary to high school, as well as between two stages in high school (year 8 and year 10).

While much of the objection to the use of quantifiable data focusses on the arbitrariness of the assignation of value and the application of ratio and interval scale manipulations to concepts that are not readily amenable to quantification, Power and Cotterell were able to show the usefulness of comparisons of student profiles generated by such techniques. Such use of comparison sidesteps to some extent the problem of describing concepts such as attitudes in terms of absolute value. The interest in this work then derives not so much from the essence of what was measured, but from the differences between results of the same measure used at different times with the same groups (year 7s and then year 8s in the present work) or on different populations at the same time (as in comparing year 7 girls with year 7 boys). Of course measures alone cannot account for the differences that are observed, although they can indicate likely correlates of change. It seems that qualitative investigation is also necessary if the task is to explain how differences occur.

The design of the present study sets up a number of possible comparisons, viz.:

- year 7 girls as compared with year 7 boys;
- year 8 girls as compared with year 8 boys;
- year 10 girls as compared with year 10 boys;
- year 7 students as compared with year 8 and year 10 students;
- year 8 girls in coeducational high school compared with year 8 girls at an all girls school;
- year 10 girls in a coeducational setting compared with year 10 girls in a single sex setting;
- all girls compared with all boys.

Using comparison techniques would seem to be a legitimate use of an instrument such as the SAS measure. There is no claim made about the absolute value/score of the attitudes thus measured, but rather interest is focussed on the differences in attitude profiles between males and females across years in school, and on possible attitude changes of both sexes across time.

(T)READING THE MEASURES: 7

In all 373 students took part in the attitude testing and Table 1 provides a breakdown in terms of sex and year level.

Care was taken to use the attitude measures at the last meeting with each class grouping in order to preserve the maximum possible naturalism of the observations and interviews. All testing took place in normal classroom settings in which the researcher had been present for some 4-6 weeks before running the tests. The only exceptions were in the case of students who were absent on the day of the testing and who on their return to school approached the researcher with a request to do the test! In these few cases they filled out their answers at a

TABLE 7:1 : THE SAMPLE N=373

	<u>PRIMARY SCHOOL</u>		<u>SECONDARY SCHOOL</u>			
	Year 7		year 8		year 10	
Total	111		143		119	
Gender	Boys	Girls	Boys	Girls	Boys	Girls
Mixed School	58	53	37	106	29	90
Mixed School	58	53	37	45	29	37
Girls' School	-	-	-	61	-	53

lunchtime session. It was evident at all levels that students enjoyed the opportunity to reflect on their experience of school in both the interviews and in the willing and cooperative manner in which they approached the attitude testing.

B : THE RESULTS : PART A

STUDENT ATTITUDE SCALES : PART A

The first part of the test consisted of a 36 item questionnaire which was intended to tap general attitude to school. The four factors derived from the Power and Cotterell procedure formed the basis of an initial hypothesis for statistical processing of the present study. A principal components factor analysis followed by a varimax rotation and a scree test were performed on the results of Part A in the present study and the four subscales which were derived were highly similar to those of Power and Cotterell. The four factors accounted for 41.6% of the variance associated with the instrument. The item loadings associated with the four factors are shown in Table 7:2. Subscales were developed by assigning items to scales with a cut off loading of .30. The logical cohesion of the items associated with the subscales is immediately evident from their grouping, as set out in Table 7:3, and is supported by the Cronbach reliability scores reported in Table 7:4. While it seems perfectly feasible to claim that school satisfaction is made up of a combination of features to do with attitude to teachers, sense of achievement, positive relationships with peers and so on, the usefulness of the subscales for the present purposes is that they provide a basis for a more precise identification of a gender difference in response to schooling, if one exists. It was anticipated that some variation on the subscales would be associated with differences in school and year level as differences in this respect had shown up in the Power and Cotterell work.

TABLE 7:2 : ITEM LOADINGS ON FACTORS, SAS PART A.Factors derived through principal components analysis followed by varimax rotation

<u>ITEM</u>	<u>FACTOR 1</u>	<u>FACTOR 2</u>	<u>FACTOR 3</u>	<u>FACTOR 4</u>
A01		41		45
A02		50		
A03			59	
A04	67			
A05	51			
A06				53
A07		66		
A08		57		
A09			34	
A10	49			
A11		38		
A12	35			
A13			46	57
A14	45	40	31	
A15		75		
A16		51		
A17	60			
A18	46	35		32
A19				62
A20	30	36	38	
A21	40			
A22	57			
A23			70	
A24		74		
A25		33	33	
A26			42	55
A27	34		46	
A28		63		
A29	33		53	30
A30	59			
A31	62			
A32				67
A33			51	44
A34	51			
A35				35
A36			70	

Note : The decimal point on the item loadings has been dropped to aid clarity.

TABLE 7:3 : STUDENT ATTITUDE SCALES, PART A.

SUBSCALE 1 : GENERAL SCHOOL SATISFACTION

- A01 I look forward to coming to school each day.(R)
- A04 I like my teachers.(R)
- A05 A lot of what we are supposed to do at this school doesn't make sense.
- A10 My teachers are helping me to learn and understand.(R)
- A12 You have to be lucky to get good marks at this school.
- A14 I do not really enjoy anything about school.
- A17 Some teachers are really against me.
- A18 The way this school is run leaves me so confused I don't know where to turn.
- A20 In this school people like me don't have any luck.
- A21 What happens in this school goes on no matter what the pupils do.
- A22 I wish we were free to do things our own way instead of being told exactly what to do.
- A27 I like school better than most other kids.(R)
- A29 It's hard for me to do as well as my parents and teachers expect.
- A30 My teachers are friendly towards me. (R)
- A31 A good deal of school work is just to keep us busy.
- A34 My teachers take into account what I need and what I am interested in.

SUBSCALE 2: SOCIAL SATISFACTION

- A02 At times I feel lost and alone in this school.
- A07 Other kids in the class try to include me in whatever they are doing (R).
- A08 Nobody in this school listens to the suggestions I make or the things I say.
- A11 In school I am often able to work with people I like.(R)
- A14 I do not really enjoy anything about school.
- A15 At this school I don't have as many friends as I would like.
- A16 Normally I feel quite relaxed at school (R)
- A18 The way this school is run leaves me so confused I don't know where to turn.
- A20 In this school people like me don't have any luck.
- A24 I am accepted and liked by most of the kids in my class.(R)
- A25 I think that people like me will never do well at this school no matter how hard we try.
- A28 Nobody in this school seems to notice me or care what happens to me.

SUBSCALE 3 : WORK SATISFACTION AND ACHIEVEMENT

- A01 I look forward to coming to school each day.(R)
- A03 I have trouble keeping up with my work.
- A09 I would feel happier at school if I wasn't expected to do so much on my own.
- A13 During exams I worry that I might fail or do badly.
- A14 I do not really enjoy anything about school.
- A20 In this school people like me don't have any luck.
- A23 I am making good progress with my work. (R)
- A25 I think that people like me will never do well at this school no matter how hard we try.
- A26 During exams I worry a lot about how I am doing.
- A27 I like school better than most other kids. (R)
- A29 It's hard for me to do as well as my parents and teachers expect.
- A33 When exams are due, I feel quite confident I will do well.(R)
- A36 I am quite satisfied with how my schoolwork is going. (R)

SUBSCALE 4 : CONFIDENCE

- A06 I'm afraid to tell the teacher when I don't understand the work.
- A13 During exams I worry that I might fail or do badly.
- A18 The way this school is run leaves me so confused I don't know where to turn.
- A19 I tense up when teachers ask me questions in class discussion.
- A26 During exams I worry a lot about how I am doing.
- A29 It is hard for me to do as well as parents and teachers expect.
- A32 I am often afraid I will make a fool of myself in class.
- A33 When exams are due I feel quite confident I will do well.(R)
- A35 I get upset when teachers don't come to my help when I need it.

Note: (R) indicates that the direction of the item was reversed.

In each case a high score indicates a positive attitude and a low score indicates a negative one.

TABLE 7:4: STATISTICAL DESCRIPTION OF SUBSCALES

	<u>Number of items</u>	<u>Range of scores</u>	<u>Mean</u>	<u>S.D.</u>	<u>Reliability</u>
Subscale 1	16	16-48	36.35	5.76	.78
Subscale 2	12	12-36	31.03	4.67	.83
Subscale 3	13	13-39	29.53	5.32	.83
Subscale 4	9	9-27	18.72	4.27	.78

Note : All reliabilities are Cronbach alphas.

(T)READING THE MEASURES: 7

The subscales were labelled with the constructs generated by Power and Cotterell, namely General School Satisfaction, Social Satisfaction, Work Satisfaction and Achievement, and Confidence. The justification of this labelling derives from the clustering of items associated with the subscales being highly similar to that found by Power and Cotterell, and also from the logical cohesion of the items within each subscale. T-tests formed the statistical basis for comparisons between the groups as it was felt that these tests allow the researcher to 'stay close to the data' and are less underwritten with assumptions of numerical accuracy than the more sophisticated measures (in the sense of the interval scale relating to a quantifiable entity). T-tests also allow the researcher to identify the location and direction of significant differences between groups in ways which may be masked by other procedures. A further qualification relating to the use of t-tests should be registered, namely that although such procedures are generally used for comparing independent samples, some of the comparisons being drawn here involve groups which are not totally independent (for example the boys and girls from Midstone Primary who were tested in year 7 and again in year 8). However the numbers of students involved for whom the results would not be entirely independent was small and the perceived usefulness of this procedure was felt to outweigh this concern.

TABLE 7:5 : STUDENT ATTITUDE SCALES : PART A. (N in parentheses)

Comparison of mean scores of gender groups on the subscales

	<u>Male</u>		<u>Female</u>
<u>Subscale 1</u> General School Satisfaction	36.7 (115)	— n.s. —	37.3 (224)
<u>Subscale 2</u> Social Satisfaction	30.7 (119)	— n.s. —	31.2 (236)
<u>Subscale 3</u> Work and Achievement	30.2 (123)	— p<.05 —	29.0 (232)
<u>Subscale 4</u> Confidence	19.7 (122)	— p<.005 —	18.2 (243)

The first comparative analysis concerned the investigation of differences between all male students and all female students, as shown in Table 7:5.

While the subsequent comparisons which look at more particular groups of students provide more finely grained comparisons it is immediately evident from Table 7:5 that there are gender differences associated with attitude to school. Across all students surveyed, males were significantly more likely to rate their attitude towards themselves in terms of confidence and work and achievement more highly than were females. The finding that male students tend to regard themselves and their potential more favourably than do female students is in keeping with a body of literature on schools and self esteem, as well as with the findings of the Power and Cotterell study (Smith, 1976; Taylor, 1981). When these results are divided according to school and year grouping further differences emerge as shown in Table 7: 6.

A preliminary note. As noted in the previous chapter the girls' high school students were in some respects a qualitatively different group from the primary school students and from those at the mixed high school. (In the latter case the mixed high school students mirrored the middle class composition of the primary school group.) While in the original design the intention had been to compare the year 8 girls' high school students with those at the primary school this was not a comparison of the same order as that with the mixed high school year 8 and the primary school and so is not shown in the following tables. For the same reasons the boys' scores are compared only with the girls from the mixed school, in that the population of the girls' school is so different as to disallow comparisons which

would seem to indicate differences produced by the sex of the student subjects. On many of the scales the difference between the attitudes of the girls at the mixed high school in year 8 as compared with the year 8 girls at the girls' high school is immediately evident, and is understood to come about as a product of the different group composition as well as the different gender context of the school environment. What is most interesting, however, is the lack of significant differences between the girls' attitudes at both schools by year 10 on three of the four subscales.

SAS PART A : Subscale 1 : General School Satisfaction.

TABLE 7: 6: Subscale 1 : General School Satisfaction.

Comparison of group means by sex.

	<u>Male</u>		<u>Female</u>	
	<u>Mixed school</u>		<u>Mixed School</u>	<u>Girls' School</u>
Year 7	36.8 (54)	— $p < .005$ —	40.3 (49)	
	 <i>n.s.</i>		 <i>n.s.</i>	
Year 8	36.9 (33)	— $p < .04$ —	40.00 (41)	— $p < .005$ — 36.3 (51)
	 <i>n.s.</i>		 $p < .005$	 <i>n.s.</i>
Year 10	34.7 (28)	— <i>n.s.</i> —	35.7 (35)	— <i>n.s.</i> — 34.1 (48)

The results on this subscale indicate that the girls were significantly more positive than the boys about school in the mixed schools in years 7 and 8, although the year 8 mixed high school girls were significantly more positive than the girls at the all girls' school in year 8. As has been described in the previous chapter year 8 presented particular issues for the girls at the girls' high school in that they had to adjust their understanding of how school worked and their place in it as a direct consequence of the all girls' environment. While many of the girls revealed in interviews that they were decidedly ambivalent about, if not

definitely opposed to, attending that particular school in year 8, such reactions tended to have subsided by year 10, and consequently the decline in reported levels of school satisfaction is less at the girls' high school than at the mixed high school. The level of school satisfaction reported by the girls in the mixed high school can be seen to decline significantly between years 8 and 10. In fact by year 10 there are no significant differences between the three groups surveyed. There is some support for the contention here that primary school is typically more satisfying for girls than for boys, as in the theory of the 'feminized classroom' (Sexton, 1979), but there is also support for the position that has been advanced in previous chapters, namely that high school operates as a 'cooling out' process for girls wherein they come to understand that their achievements and orientations are not as important as those of boys. Table 7:6 gives evidence of the different degree of changed perception associated with gender which does suggest that there are different processes at work as students pass through high school. This result sets the pattern for subsequent results. Boys' responses are relatively unaffected by transition to and progression through high school. The girls who went to the mixed high school were similarly unaffected by the transition as revealed by this measure, but their progression through high school was accompanied by a significant decline in their reported levels of general school satisfaction. The year 8 girls at the girls' high school were significantly less positive about school than the girls at the mixed high school, and for this group there was not the significant decline on this measure which was associated with the girls' experience at the mixed high school.

SAS PART A : Subscale 2 : Social Satisfaction.

For both boys and girls social satisfaction remained relatively constant across year levels. The only difference that emerges as significant is that between the year 10 girls at the mixed high school and those at the girls' school at this level. It would appear that the girls at the

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mixed high school had a higher level of social satisfaction than did their peers at the girls' high school. While the items which make up this subscale invoke concepts of being known, being heard and feeling secure, and no significant differences emerge, the ways in which these constructs are played out in male and female groups are very different as has been shown in the previous chapters. The point here is that the instrument used in the survey did not allow for the identification of some of these gender differences.

Table 7:7: Subscale 2 : Social Satisfaction

Comparison of group means by sex

	<u>Male</u>		<u>Female</u>	
	<u>mixed school</u>		<u>mixed school</u>	<u>girls' school</u>
Year 7	30.8 (55) — <i>n.s.</i> —		31.6 (49)	
	<i>n.s.</i>		<i>n.s.</i>	
Year 8	30.9 (36) — <i>n.s.</i> —		32.0 (49) — <i>n.s.</i> —	30.5 (57)
	<i>n.s.</i>		<i>n.s.</i>	<i>n.s.</i>
Year 10	30.1 (28) — <i>n.s.</i> —		31.9 (36) — <i>p</i> <.04 —	30.3 (50)

SAS PART A : Subscale 3 : Work Satisfaction and Achievement.

On this subscale the patterns of development of work or achievement related satisfaction show marked gender variation. During year 8 the difference in favour of the girls on this measure reached significance for the group attending the mixed high school. In fact the first year of high school at the mixed school represents a peak for the girls in the study on

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this measure. At this time they are significantly ahead of both comparable groups on this score, namely the boys in year 8 at the mixed high school and the girls who are in the same year at the single sex school.

Table 7: 8 : Subscale 3 : Work Satisfaction and Achievement
Comparison of group means by sex

	<u>Male</u> <u>mixed school</u>		<u>Female</u> <u>mixed school</u>		<u>girls' school</u>
Year 7	30.6 (58)	— <i>n.s.</i> —	31.2 (48)		
	<i>n.s.</i>		<i>n.s.</i>		
Year 8	29.8 (37)	— <i>p</i> <.07 —	31.7 (43)	— <i>p</i> <.001 —	28.5 (54)
	<i>n.s.</i>		<i>p</i> <.001		<i>p</i> <.03
Year 10	29.9 (28)	— <i>p</i> <.05 —	27.5 (36)	— <i>n.s.</i> —	26.3 (51)

(The point has been made in the previous chapter concerning the recruitment practices operating at the time in the girls' high school which caused the school to attract and enrol a higher proportion of slow learners than was found at either of the other schools, a factor which certainly affected some teachers' perceptions concerning achievement and potential of the students as a group.)

By year 10 the gender difference in favour of the girls at the mixed school is reversed and it is the boys who are significantly ahead of the girls on this measure, although the boys' scores have not altered significantly across the three measuring times. For both groups of girls however there is a significant decline in the sense of work satisfaction or achievement from year 8 to year 10, with the decline being most pronounced in the mixed school. Overall results on this measure support the main contention of this work, namely that there

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are processes at work within schooling that have different effects on male and female students. The lack of change in the boys' profiles on this measure suggests that for the boys the school presents a fairly straightforward understanding of its role in the negotiation of a sense of work satisfaction and achievement. For the girls it seems that there are changes in the understandings related to this measure which have particular importance for the early years in high school. If the situation encountered with this group of students is widespread it seems particularly unfortunate in that by year 10 when formal curriculum decisions are made regarding whether to continue with mainstream academic subjects, or indeed whether to continue with school at all, the girls appear to register a lower sense of achievement or work satisfaction than their male peers. This finding can be seen as supporting the position that the high school years are accompanied by girls' diminishing satisfaction with their work and sense of achievement, a process that has been described in chapter 5 as a 'cooling out' process.

SAS PART A : Subscale 4 : Confidence.

TABLE 7: 9 : SUBSCALE 4 : CONFIDENCE

Comparison of group means by sex.

	<u>Male</u>		<u>Female</u>	
	Mixed School		Mixed School	Single sex
Year 7	20.1 (58)	— <i>n.s.</i> —	19.9 (53)	
	<i>n.s.</i>		<i>n.s.</i>	
Year 8	18.8 (36)	— <i>n.s.</i> —	19.3 (44)	— <i>n.s.</i> — 17.9 (58)
	<i>n.s.</i>		<i>p</i> <.01	<i>n.s.</i>
Year 10	19.8 (28)	— <i>p</i> <.01 —	17.1 (36)	— <i>n.s.</i> — 16.9 (52)

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At year 10 the boys are significantly ahead of the girls on this measure, an effect which would appear to be more readily explained by the girls' diminution of confidence than any great increase in this dimension on the part of the boys. It is noteworthy that despite the previously noted social and structural differences between the mixed high school and the girls' school the differences between the groups of girls at year 10 on these last two subscales are very slight and do not reach significance. It would seem that girls' lower levels of confidence as compared to that of their male peers is an effect independent of the mixed or single sex setting by year 10. On the basis of this result it is not possible to claim that girls' diminution of confidence is brought about by the presence of males in their classrooms, nor is it possible to adduce any advantage brought about by the single sex setting. For the girls in the study, high school experience was accompanied by the increasing similarity of girls' responses regardless of school gender context.

In general the Student Attitude Scales Part A can be seen to provide some useful information about gender effects of schooling associated with changes in school types and year levels. The clear gender differences associated with achievement and confidence were not unexpected, having been encountered in a variety of previous studies (Power and Cotterell, 1979; Taylor, 1981). The male advantage emerging by year 10 on subscales 3 and 4 is to some degree masked within the more general school satisfaction measure and perhaps this feature can be used to explain why the difference in males and females responses to schooling and to themselves as learners remains somewhat elusive in the results of quantitative measures. The main source of interest for the present work to be gleaned from these results has to do with the changing profiles of boys' and girls' response to schooling, and the connections which can be made between these results and the points made in the preceding qualitative/descriptive chapters. In these earlier chapters it was

argued that boys and girls do respond to schooling differently and that these different responses form so much a part of the taken-for-granted social world of which school is necessarily a part, that they go for the most part unnoticed by the students and their teachers. The attitude results detailed here are further evidence of these gender differences and may be used to delineate their implications more precisely. From this part of the measure it appears that girls as a group have a more positive response to school at year 7 than do boys, but that the years of high school represent a diminution of girls' responses to the same level as that of the boys. On the other hand the boys, who in year 7 were not significantly more confident or satisfied in their work achievement than the girls, are not significantly affected on these dimensions by their progression through high school, whereas for the girls progression through high school is associated with a marked diminution in both confidence and work achievement.

C. THE RESULTS : STUDENT ATTITUDE SCALES : PART B

STUDENT ATTITUDE SCALES - PART B

Power and Cotterell (1979) had used a principal components factor analysis followed by varimax rotation to identify 8 interpretable factors from their results on the 35 items of this section of the measure. The same procedure, i.e. principal components factor analysis followed by varimax rotation of the results of the present study also extracted 8 factors (Kaiser normalization) which accounted for 67% of the variance. Table 7:11 shows the items loading on these eight factors with a cut off loading at .30.

The attitude measure used, SAS Part B, is given in full on the following page.

STUDENT OPINIONS

In the questions which follow you are asked to indicate how you feel about school in general and about some of the subjects you study, by marking an X along each line between the words given "interesting - dull", "bad - good", and so on. If, for example, you feel school is very good, you would put your X close to good (in the end brackets). If you feel school is average, you would put your X in the middle of that line.

Example :

bad () () () () () () (X) good

SCHOOL

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

ENGLISH

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

MATHS

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

SOCIAL STUDIES

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

SCIENCE

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

TEACHERS AT HIGH SCHOOL

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

TEACHERS AT PRIMARY SCHOOL

interesting () () () () () () () dull
bad () () () () () () () good
easy () () () () () () () difficult
useless () () () () () () () useful
confusing () () () () () () () clear

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Note: For subsequent identification in the factor analysis and the formation of scales, the items are numbered progressively from the top, B01 to B35.

Table 7: 11 : ITEM LOADINGS ON FACTORS, SAS PART B.

Factors derived through principal components analysis followed by varimax rotation.

ITEM	FACTORS							
	1	2	3	4	5	6	7	8
B01	34		38				45	
B02	31		44				43	
B03								62
B04							81	
B05		56						40
B06						85		
B07						83		
B08						49		45
B09						52		
B10						75		
B11	33	72						
B12	37	72						
B13		78						
B14		46					58	
B15		85						
B16					90			
B17					89			
B18					34			62
B19					77			
B20					56			47
B21	86							
B22	88							
B23	60							40
B24	73							
B25	73							
B26			77					
B27			82					
B28			66					35
B29			57				38	
B30			64					
B31				84				
B32				83				
B33				46				
B34				79				
B35				69				

Note : The decimal point has been dropped to aid clarity.

The factors thus derived closely reflected the seven headings which formed the structure of

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the measure, viz. Factor 1 = mainly Science, Factor 2 = Maths, Factor 3 = mainly High School Teachers, Factor 4 = Primary School Teachers, Factor 5 = Social Studies, Factor 6 = English, Factor 7 = School seen as good and interesting along with a rating of school, maths and high school teachers as useful, Factor 8 = School, English, Social Studies, Science seen as easy and School, Social Studies and High School Teachers seen as clear. The heading 'school' (B01 to B05) emerged as less discrete than the other headings as the items under this heading loaded on to Factor 1 (mainly science) and Factor 3 (mainly high school teachers) and intermingled with the perception of maths and high school teachers as 'useful' (Factor 7) and the perception of English, Social Studies and Science seen as easy and Social Studies and High School Teachers seen as clear (Factor 8). This is a logical outcome insofar as student responses to school must inevitably be developed around their responses to particular features of schooling as they encounter them. At the same time the result is suggestive of the importance of these two subject areas, science and maths, as well as high school teachers, being prominent in determining student response to school. The other property which emerges from the factor analysis relates to the discrete nature of the subject areas and in particular the fact that primary school teachers emerge as a group on one factor distinct from high school teachers who constitute another dimension. Such a result is supportive of one of the contentions of the present study, namely that the students perceive primary school ethos as quite distinct from that of the high school, here reflected in the different student attitudes towards the two groups of teachers.

The results of the Factor Analysis detailed above provide interesting information about the way in which attitudes to school are built up in terms of combinations and interrelationships between features of school experience and particular subject areas, such as the relation revealed between the tendency to connect positive attitudes to school and mathematics with a generally positive orientation to science (Factor 1). However, although there is some

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evidence for interrelationships, the major feature of the extracted factors is the considerable support they provide for the proposition that separate scales may reasonably be used to examine attitudes to science, maths, English, social studies and the two sets of teachers. The matter is of importance as the scales provide a quantitatively based perspective on schooling allowing comparison with that derived from the wealth of qualitative data already reported. There is also support (from factors 7 and 8 respectively) for the formation of two other scales - a useful scale and one concerned with easiness and clarity. In all respects the profile formed by this part of the measure conforms with that generated by Power and Cotterell (1979) who also used a useful scale and an easy/clear scale. The procedure followed to calculate scores for each scale was as follows:

1. Under each heading scores were calculated by assigning values from 1 to 7 for each bipolar dimension with the interesting-dull and easy-difficult lines reversed so that in all cases a high score represented a positive attitude.

2. Aggregates were calculated for all responses in terms of the five bipolar dimensions for the seven headings corresponding to those used in the measure, viz. school, English, maths etc. In addition a usefulness scale was calculated using the useful-useless scores from under each of the 7 headings and an easy-clear scale from the scores on the easy-difficult and the clear-confusing scores under each of the 7 headings.

Note: It was decided to include the scale School although as noted above this did not emerge as clearly associated with any one factor in the results of the factor analysis. The decision was taken on the basis of the scale's demonstrably high level of reliability, because the scale offered a comparison with the General School Satisfaction subscale in SAS Part A and because the Power and Cotterell work had used the scale School.

Table 7:12 reports the overall means encountered in association with the scales, together

with a measure of scale reliability.

TABLE 7:12 : SAS Part B: Statistical breakdown of scale scores.

	No. items	Range	Mean	S.D	Reliability
Scale 1 School	5	5 - 35	25.24	5.31	.76
Scale 2 English	5	5 - 35	23.8	6.71	.79
Scale 3 Mathematics	5	5 - 35	25.83	6.98	.87
Scale 4 Social Studies	5	5 - 35	26.69	6.4	.82
Scale 5 Science	5	5 - 35	25.09	7.21	.88
Scale 6 High School Teachers	5	5 - 35	23.13	6.39	.83
Scale 7 Primary Teachers	5	5 - 35	27.33	6.18	.81
Scale 8 'Useful'	7	7 - 49	39.41	7.00	.74
Scale 9 'Easy-Clear'	14	14 - 98	66.36	12.35	.80

Note : All reliabilities are Cronbach alphas.

The point of the measure for the present purpose is not to attempt to explain why for example the topic 'English' attracts a lower score than does any of the other subjects, but rather to look at differences between student groups in their responses to particular subject

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areas, teachers and other school related concepts. The following tables show the scores of particular groups in response to the scales in SAS Part B.

SAS PART B : SCALE 1 : School

The results on the first scale in Part B can be seen to support the findings from Part A of the measure, with the girls at year 7 more favourably disposed towards school than the year 7 boys, although there are no significant gender differences on this measure during the high school years.

TABLE 7:13 : SAS Part B : Student Attitudes to School
Comparison of group means by sex.

	<u>Male</u>		<u>Female</u>	
	Mixed School		Mixed School	Single Sex
Year 7	25.81 (53) — <i>p</i> <.05 —		27.85 (52)	
	<i>n.s.</i>		<i>n.s.</i>	
Year 8	25.68 (34) — <i>n.s.</i> —		26.60 (38) — <i>n.s.</i> —	24.84 (58)
	<i>n.s.</i>		<i>p</i> <.001	<i>p</i> <.05
Year 10	23.96 (28) — <i>n.s.</i> —		23.00 (36) — <i>n.s.</i> —	22.51 (49)

As noted in the discussion of the results of part A, the three groups at year 10 are highly similar in their attitude to school, largely due to the decline in satisfaction levels reported by both groups of girls. The boys' attitude to school does not change significantly during the three levels of schooling whereas the girls' does, with the girls at the mixed high school revealing the most pronounced decrease in positive response. Once again there is a strong indication that the processes that operate during the high school years affect male and

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female students differently, a finding consistent with other work in this area (see for example Taylor,1981).

Analysis of the subsequent sections of this measure, SAS Part B, demonstrates a possible relationship between the students' responses to school in general in terms of particular aspects of the formal organization of school, namely subjects and teachers. The first of these tapped by the measure concerns the subject English and the responses of the different groups are set out in Table 7:14.

SAS PART B : Scale 2 : English

TABLE 7:14 : SAS Part B : Student Attitudes to English.
Comparison of group means by sex.

	<u>Male</u>		<u>Female</u>	
	Mixed School		Mixed School	Single Sex
Year 7	19.70 (54)	$p < .005$	23.77 (51)	
	$p < .05$		$n.s.$	
Year 8	23.34 (35)	$n.s.$	25.54 (41)	$n.s.$ — 23.59 (58)
	$n.s.$		$n.s.$	$p < .05$
Year 10	22.68 (28)	$n.s.$	24.21 (37)	$p < .06$ — 26.60 (48)

The move to high school was accompanied by a significant improvement in the boys' attitudes to English and the previously noted gender difference occurring at year 7 was seen to disappear. Nor was the response of the year 10 students at the mixed high school significantly different from that of the year 8s. In the primary school 'English' typically

meant a lesson on grammar, syntax and sentence completion, as distinct from activities that the children found more pleasurable like reading and story writing. It is possible to hypothesize that the girls' more positive response to English in the primary years could be associated with their typically better developed verbal skills as well as their reputed tendency to happily engage in rule-following activities such as constitute the typical lesson on grammar. However high school English embraces written language, reading, debating and drama and hence it is possible to hypothesize that the subject heading would attract more positive responses from all students. It is noteworthy that on this scale the girls at the girls' high school in year 10 were significantly more favourably inclined towards English than were the girls in the mixed high school at year 10 and that the girls in the girls' school at year 10 were significantly more positive about the subject than at year 8. As noted in the previous chapter English at the girls' high school was treated in a way which was more flexible and adhered to the needs and interests of the students more closely than at the mixed high school. This feature may well reflect the more flexible curriculum design of the subject, as well as the quality of the teaching along with group composition. An example of this is a particularly memorable lesson sequence on Romeo and Juliet at the girls' high school. Class discussion revealed a broad engagement with the story and the Shakespearian language, as well as identification with the central issues. The class opted to give up a recess and part of a lunch hour to view a video production of the play and when the lights went up there was not a dry eye in the house - including that of the teacher! This type of shared involvement was much more typical of English lessons at the girls' high school than at the mixed high school. The situation with respect to attitude to mathematics was somewhat different as revealed in Table 7:15.

SAS PART B : Scale 3 : Mathematics

The results of the mathematics attitude measure revealed that by the end of primary school

the boys viewed mathematics significantly more favourably than did the girls in the study. The move to high school did not produce significant changes in the girls' response to the subject, although there was a tendency for the girls at the girls' school to have a more favourable response in year 8 than did those girls who went to the mixed school. However by year 10 the girls' responses are significantly less favourable to this subject than they had been at year 8, with no real difference between the girls at the mixed school and those at the girls' school. The difference between males and females at year 10 on this measure is more pronounced than it had been at year 7 or year 8.

TABLE 7:15 : SAS Part B : Student Attitudes To Mathematics
Comparison of group means by sex

	Male		Female	
	Mixed School	Mixed School	Mixed School	Single Sex
Year 7	29.15 (54)	— $p < .006$ —	25.67 (52)	
	<i>n.s.</i>		<i>n.s.</i>	
Year 8	27.24 (34)	— $p < .07$ —	24.73 (40)	— $p < .05$ — 27.25 (57)
	<i>n.s.</i>		$p < .05$	$p < .001$
Year 10	29.25 (28)	— $p < .001$ —	21.69 (35)	— <i>n.s.</i> — 21.18 (50)

There is a marked similarity between the boys' responses to mathematics, as compared with those of the girls, and their profiles on achievement and confidence in Part A of the measure which suggests that for boys performance in mathematics is related to a sense of achievement and confidence at school. The results on this part of the measure can be seen

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to confirm the study's particular focus on mathematics classes as centrally involved in the connection between gender construction and schooling practice.

SAS PART B : Scale 4 : Social Studies.

In the responses to the category 'Social Studies' (which was interpreted to include history and geography at the high school level) the students' responses revealed no significant gender differences. For girls there is a decline in attitude to this subject area from year 7 to year 8 and then an improvement by year 10 at the mixed high school. As with previous subject categories, the boys' attitudes are less likely to change significantly than are those of the girls. The girls on this measure show more volatility, are less likely to be confirmed in their attitudes than are the boys, a finding consistent with theories of girls being socialized in ways which make them more responsive to environmental conditions (Gilligan,1982).

TABLE 7:16 : Student Attitudes to Social Studies

Comparison of group means by sex.

	<u>Male</u>		<u>Female</u>	
	Mixed School		Mixed School	Single Sex
Year 7	28.08 (52) — <i>n.s.</i> —		29.62 (50)	
	<i>n.s.</i>		<i>p<.001</i>	
Year 8	23.69 (35) — <i>n.s.</i> —		25.28 (40) — <i>n.s.</i> —	25.60 (58)
	<i>n.s.</i>		<i>p<.05</i>	<i>n.s.</i>
Year 10	26.35 (29) — <i>n.s.</i> —		27.89 (37) — <i>n.s.</i> —	26.17 (48)

SAS PART B : Scale 5 : Science.

The pattern of girls' responses to school subjects undergoing more change with time in school than those of the boys is again apparent in the results of the next scale on the measure which looked at student attitudes to science, reported in Table 7:17. As revealed by this measure the boys, by year 7, have significantly more positive attitudes to science than do the girls. Once again the boys' attitude does not change significantly with time in school whereas the situation with the girls is somewhat different. The transition to high school was accompanied by a significant improvement in attitudes to science among the girls who attended the mixed high school.

TABLE 7:17 : Student Attitudes to Science

	Comparison of group means by sex		
	Male	Female	
	Mixed School	Mixed School	Single Sex
Year 7	27.33 (52) — $p < .04$ —	24.67 (51)	
	<i>n.s.</i>	$p < .028$	
Year 8	28.32 (34) — <i>n.s.</i> —	27.68 (41) — $p < .02$ —	24.59 (56)
	<i>n.s.</i>	$p < .002$	$p < .003$
Year 10	27.28 (29) — $p < .005$ —	23.46 (37) — $p < .03$ —	19.64 (50)

As recorded in the previous chapters the science curriculum of the two schools was rather different. At the mixed high school year 8 science was taught predominantly by women and the course involved a considerable amount of emphasis on nature study, botany, biology and zoology. Many of the lessons observed involved nature walks, discussion of pets and their habits as well as sessions on food and health. At the girls' high school the science teachers were all male and all science lessons took place in the laboratory. Here the emphasis was on basic chemistry and scientific experiment using the laboratory equipment.

It seems reasonable to suggest that the different responses to science as revealed by this measure reflected something of the different experience of the subject by the two groups of girls. By year 10 at both schools science had become a fairly intensive study involving the abstract concepts associated with physics and chemistry, and it is in the transition from year 8 to year 10 that there is a pronounced and significant decline in the girls' attitude to the subject, although not in the boys. The girls at the girls' high school in year 10 held a significantly more negative attitude to science than did the girls at the mixed high school. Once again the high school years are accompanied by a diminution of girls' positive response to an aspect of schooling, but not so for boys.

SAS PART B : Scale 6 : High School Teachers

While at primary school the girls in the study showed a more favourable attitude to the category High School Teachers than did the boys, and the difference was significant at the .05 level. The attitude of the boys had become more positive by the time they were in year 8, but then was to decline by year 10. For the group of girls who went to the mixed

school the sharp drop in the category for this group from year 8 to year 10 is highly significant.

TABLE 7:18 : Student Attitudes to High School Teachers
Comparison of group means by sex

	Male		Female	
	Mixed School		Mixed School	Single Sex
Year 7	21.42 (52)	$p < .05$	24.06 (51)	
	$p < .06$		<i>n.s.</i>	
Year 8	23.83 (35)	$p < .06$	26.17 (41)	$p < .07$ - 23.89 (56)
	$p < .08$		$p < .001$	<i>n.s.</i>
Year 10	21.41 (29)	<i>n.s.</i>	21.22 (37)	$n.s.$ - 22.17 (48)

There is a striking similarity in attitude on this measure for all three groups of students at year 10, by which time the gender distinctions observable in the earlier years on this scale have disappeared. A similarly high level of consistency was shown by the three groups of year 10s in the next scale, Primary School Teachers, shown in Table 7:19.

SAS PART B : Scale 7 : Primary School Teachers

The girls in the study left primary school significantly more favourably disposed towards primary school teachers than did the boys, a finding consistent with work in this area of children's attitudes (Walkerdine, 1985). This difference is maintained in year 8 when, if anything, the difference between boys' and girls' attitudes to primary teachers is wider, a position reflected in the boys' comment that high school was 'real work' and an avowed tendency to see primary school as 'babyish' (see interview with year 8 boys p.218).

TABLE 7:19 : Student Attitudes to Primary School Teachers.
Comparison of group means by sex

	Male		Female	
	Mixed School		Mixed School	Single Sex
Year 7	25.39 (54) — $p < .02$ —		28.13 (52)	
	<i>n.s.</i>		<i>n.s.</i>	
Year 8	24.49 (35) — $p < .01$ —		28.49 (41) — <i>n.s.</i> —	27.78 (59)
	$p < .06$		<i>n.s.</i>	<i>n.s.</i>
Year 10	27.32 (28) — <i>n.s.</i> —		27.94 (36) — <i>n.s.</i> —	28.04 (50)

By year 10 however it seems that increased maturity and distance allowed the boys to look more favourably on their primary school teachers and by this year their teacher ratings are very similar to those of the girls. Across each year tested the girls demonstrated a high degree of consistency in their favourable attitudes to primary school teachers. As noted earlier this coalescence of male and female ratings was a feature of the previous category, high school teachers, and it is also noteworthy that these students are considerably more positive about primary school teachers than about high school teachers.

SAS PART B : Scale 8 : The usefulness scale.

There are no significant gender differences in the students' response to seeing school as useful. For all students the transition to high school was accompanied by a pronounced decline in the tendency to regard school and subjects as 'useful', with this decline being

slightly more significant for boys than for girls.

TABLE 7:20 : The Usefulness Scale

Comparison of group means by sex

	<u>Male</u>	<u>Female</u>	
	Mixed School	Mixed School	Single Sex
Year 7	41.40 (52) – <i>n.s.</i> ———	42.39 (51)	
	↓ <i>p</i> < .01	↓ <i>p</i> < .04	
Year 8	37.59 (34) – <i>n.s.</i> ———	39.35 (40) – <i>n.s.</i> —	39.30 (56)
	↓ <i>n.s.</i>	↓ <i>n.s.</i>	↓ <i>n.s.</i>
Year 10	37.76 (29) – <i>n.s.</i> ———	38.64 (36) – <i>n.s.</i> —	37.85 (47)

By year 10 this rating had not perceptibly altered. Another interesting feature coming from this section was the finding that the mathematics/useful category was the highest scoring variable along this dimension, a finding reflected in some of the testing at primary school reported in chapter 4.

SAS PART B : Scale 9 : The easy/clear dimension.

The next scale was built up from scores on two of the sets of bipolar dimensions, namely easy-difficult and clear-confusing, that operated under each of the seven headings listed earlier. No significant differences between males and females appear on this dimension until year 10. For the girls in the study the transition from year 8 to year 10 is accompanied by a significant decline in their estimation of schoolwork as easy and clear, whereas for

boys the transition to high school saw a boost in their evaluation of these dimensions.

By year 10 the boys were significantly more likely than the girls to rate school subjects as easy and clear, a finding consistent with differences in work satisfaction, achievement and confidence reported in the earlier section of this chapter.

TABLE 7:21 : The easy/clear dimension
Comparison of group means by sex

	<u>Male</u>		<u>Female</u>	
	Mixed School		Mixed School	Single Sex
Year 7	64.29 (45)	— <i>n.s.</i> —	68.00 (46)	
	 <i>p</i> <.036		 <i>n.s.</i>	
Year 8	70.19 (32)	— <i>n.s.</i> —	69.86 (37)	— <i>n.s.</i> — 67.61 (51)
	 <i>n.s.</i>		 <i>p</i> <.005	 <i>p</i> <.02
Year 10	68.14 (28)	— <i>p</i> <.03 —	62.37 (35)	— <i>n.s.</i> — 60.95 (44)

D : IN CONCLUSION

The results of Student Attitude Scales : Part B complemented the findings from Part A, namely that the boys are relatively unaffected in terms of their response to aspects of school, self perceptions and subject areas by the transition to high school and by progression through high school. The girls on the other hand appear as a group to be much more volatile in terms of their responses on these measures. The reported emergence and/or disappearance of significant gender differences was mainly produced by changes in the girls' responses. For example, transition to high school saw the emergence of a

gender difference in favour of the boys in terms of work satisfaction and achievement, a difference that became more pronounced with time in high school. Progression through high school was associated with the gender differences emerging in favour of the boys in terms of confidence and the tendency to perceive school as easy and clear. In all of these cases the gender difference emerged as a result of the diminution of the girls' response on the particular measure, rather than from any real change in the boys' responses.

Some evidence for the validity of these measures is provided by the ways in which results on Part A were supported and confirmed by the results on Part B. At the same time each measure and its subscales identified a particular feature or subset of features of student response to schooling which was investigated for particular dimensions of gender difference (which is not to say that gender difference was found on all dimensions). In this way gender differences which emerged in terms of particular subject groupings, attitudes to school or teachers, or at particular year levels could be identified, contributing to a multifaceted picture of the connection between schooling process and gender distinction. The gender difference observed in the tendency of boys to be more likely to view school as easy and clear which emerged in Part B resonated with the finding in Part A that boys report significantly higher levels of confidence. In each case the gender difference did not emerge until year 10, suggesting that the high school experience is implicated in the production of these differences.

In Part B the differences in terms of male and female response to subject areas was most clear in the case of mathematics and science. Mathematics in particular constituted an area of clear and consistent significant difference in favour of males and one in which the boys' responses did not significantly alter with time in school, whereas those of girls did. The situation with regard to science was a little different in that at year 8 the gender difference

which had been revealed in the student responses in the previous year had disappeared, only to reappear in a more pronounced form by year 10, once again as a result of changes in the girls' responses with those of the boys staying much the same across all three years. The variation in the profiles of and attitudes to particular subjects is most interesting in that it shows that the familiar finding of, for example, girls being less positive than boys in their orientation to science, does not emerge *a priori*, but rather is developed in concert with other self and school related understandings. The fluctuation in the girls' responses to the category Science, with the year 8 girls at the mixed high school rating the subject significantly more highly than did any other groups of girls measured, leads to the suggestion that particular features of the science curriculum may cause the subject to be seen as more or less appropriate to girl students. The point here is that it is not the topic Science which inevitably draws forth gender different responses, but rather it is the way in which the topic science is interpreted and experienced which produces these gender differences. It has been argued that Science in schools is constructed in masculine terms in ways which routinely disenfranchise girls as learners (Kelly, 1985). The results of this measure in terms of the responses of the year 7 girls and the year 10 girls would lend support to such a contention. However the more positive response of the year 8 mixed high school girls, in whose case the curriculum was similar to those areas of science which are known to be of interest to girl students (Harding, 1983), indicates that a blanket assertion that science is inevitably a problem for girls as learners is unwarranted.

The diminution in girls' confidence with time in school and the possible connection between this and attitudes to mathematics suggests particular strategies may be useful in this area. By year 7 in the primary school mathematics had been identified as not only an important area of knowledge, but also one in which one's ability or lack thereof was a matter of personal and public awareness (as discussed in chapter 4). And confidence, as

tapped by this measure, is crucially related to operating in a public sense, being seen to do well - which was also a feature of the mathematics classroom processes here observed. For these subjects, science and mathematics, the girls' change in attitude correlates strongly with features of the curriculum in terms of both content and style of delivery, and would appear to be causally related to those features. Insofar as high school mathematics was publicly identified as difficult and an area in which ability mattered (as evidenced in the common entry test on the basis of which students were 'set' in groups) and that science operated in terms of a popular culture in which such knowledge was seen by the girls (and probably by the boys also) as a male appropriate area of study, one in which the boys 'know all the answers', the diminution in girls' responses to these subject areas is not surprising. The results presented here accord with many other studies of the relationship between gender and attitude to self and to subject areas (see in chapter 1). The clearest summary of the situation is presented by Eccles, an American researcher who has long worked at 'bringing girls to math and science':

Males' and females' attitudes towards math and English, and towards themselves as learners of math and English, diverge consistently in all studies of people over the age of 12.
(Eccles, 1989, p.40)

although in the present study the gender difference with respect to English only emerged in terms of the year 10 girls at the girls' school.

Looking at the year 7-8 transition period only, Power and Cotterell had found that:

Male students were more satisfied with science and more confident (less anxious) than female students throughout the transition period, while female students displayed higher levels of general school satisfaction, work satisfaction and more positive attitudes towards school, English, social studies and their teachers (both primary and secondary).

(Power and Cotterell, 1979, p.136)

This profile is to some degree confirmed by the present study in that at year 7 and 8 girls

(T)READING THE MEASURES: 7

were significantly ahead of boys in attitudes to teachers (Primary school and High school), English, school generally (in SAS part A though not in year 8 on SAS part B), whereas boys were ahead on science at year 7 and on maths at each of the levels tested. Taken together SAS Part A and SAS part B present a convincing and mutually supportive description of attitude change and development of students in response to schooling.

By and large the results presented here are supportive of the argument set out in chapter 5, namely that high school experience works in different ways for male and female students which result in a lessening of the contradictory messages for boys (as reflected in the lack of significant change in boys' attitudes here described) whereas for girls there is a heightening of the contradictions, resulting in a need to re-negotiate what school is all about (as reflected in the volatility of the girls' responses on some of the scales). The consistency of the boys' responses on the scales presented here indicates that they have worked out their position with regard to schooling during the primary school years and that high school entry and experience does not cause them to deviate substantially from that position. On the other hand the girls appear to undergo considerable reworking of their understanding of school and their position in it as they progress through high school. Strategies which they had adopted and found satisfying in primary school gave way to new understandings of what really mattered: "*We might know stuff ... but it's not subjects!*" They learnt to be dismissive of the strengths that they had developed in primary school: "*That's all it is in primary school ... good writing and neat books!*" Just what it is in high school is apparently less clear, except for the continual connection between being brainy and doing well in maths and science. And it is this uncertainty that is reflected in the measure of girls' attitudes to themselves and to school which reveals them as less positive as they proceed through high school.

The results of this study of attitudes in terms of mixed as compared with single sex schooling for girls must be seen as decidedly ambivalent. The traditional recruitment practices whereby the less able students were advised to seek a place in a girls' school, a practice noted in the previous chapter, can be seen to have had a distinct influence on the attitude profiles gained from these measures. At year 8 level the girls from the girls' school revealed significantly less favourable attitudes to science and to high school teachers than did their female peers at the mixed high school. However they were as a group more favourable towards mathematics than the girls at the mixed high school. Even more striking is the lack of significant difference between the groups of girls at year 10 - on all measures except English with the girls' school girls ahead, and science with the girls' school girls behind. Perhaps the most interesting result has to do with subject areas such as year 10 English and year 8 mathematics where the girls' school students seem to be more positively oriented than their peers in the mixed school. It may be that a girls-only environment has the potential to affect attitudes to subject areas in a more direct way than is possible in a coeducational setting. There are also implications for curriculum content which were noted briefly in the report. Curricula which are sufficiently flexible so as to allow for some personal identification on the part of both teacher and students appear to be associated with a more positive attitude on the part of girl students. Boys who are culturally positioned in ways which confirm their identification with maths-science are perhaps less likely to need the teacher's sponsorship in this regard. On the other hand the significantly less favourable response to science given by the girls at the girls' school could be read as supporting the position that science learning may proceed more effectively in a mixed environment. In this context it is necessary to recall the specific recruitment practices of the girls' school which produced an understanding of the student body as 'less able'. Mention has also been made in the previous chapter of the confirmatory effect of the girls-only environment in the case of teachers understanding a particular subject as beyond

the scope of girl students (as was seen to occur in the science classes in particular). Thus any result that revealed the girls in the girls' school showing a more favourable response than the girls at the mixed school is worthy of interest but cannot be taken as a simple result of the school's gender context.

Overall the single most disturbing feature revealed by these attitude scales has to do with the diminution in the levels of confidence, work achievement and attitude to particular subject areas (notably science and mathematics) which emerges as a feature of the girls' response to schooling by year 10. For the girls in this study, the transition to high school appeared to produce less change in general attitude than did the years in high school. Particular features of student experience at the two high schools studied may account to some degree for this. As noted earlier, the mixed high school was divided into junior and senior high school and year 10 was seen by students as being 'bottom of the heap' yet again! Teachers in year 10 stressed the need for hard work and bemoaned what several saw as the artificially large increase in level of abstraction and difficulty of the year 10 curriculum. Just why these features of school should affect girl students differently from the boys cannot be answered in terms of the descriptions generated by quantitative measures. Explanations must take into account qualitative features of the school experience and their effect on students.

For many of the students at the girls' school, year 10 represented the last year in school, the end of the 'marking time', and they eagerly anticipated the freedom, the clothes and the status of the post-school world. Their teachers were aware of this too, particularly one mathematics teacher who stated his position in an interview

"It's clear to me that these girls shouldn't be doing mathematics. They haven't the ability and they're not interested. There was a time when it was understood that mathematics was only for the bright students, but now there's some democratic notion that everybody should have mathematics. With this class you can see it's

a waste of time..."

That such a position could be developed, and left unchallenged, in the environment of a girls' school resonates with the ways in which constructs such as ability, power and mathematics appear in the wider society. Certainly the year 10 standard set girls were not about to challenge the correctness of the teacher's position. They were not good at mathematics - and they quickly learned that their teacher did not expect them to be. Not operating in an accepted classroom discourse in the sense of asking 'intelligent' questions, their frequent requests for help were interpreted as trying to 'get at' the teacher. In one class on simple equations there was a barrage of "*Where do you get X?*" "*Where do you put X?*" "*What's X anyway?*" - none of which drew an answer from the teacher who, back to the class, continued writing ever more lines of 'problems' on the board. Finally in a desperate attempt to engage in some sort of dialogue one of the questioners called out

"Hey Mr.J.. where'd you buy your shoes?"

The girl was sent from the room amid much laughter from the others who also felt the frustration of the questioner and identified with it. This class scored the lowest on the attitude measure for mathematics. It seems reasonable to suggest that the measure did indicate something of their orientation to the subject.

Inspection of the results of the attitude measure has at times revealed features that did not emerge from the qualitative accounts of classroom interaction. The degree of difference between year 8 and year 10 is one example of this. Elsewhere these results have worked to underscore impressions highlighted in the descriptions in the previous chapters. Attitude measures cannot account for the differences revealed. Since accounting for the development of gender differences in schooling was the designated focus of this study, it is clear that the use of an attitude measure alone, however sophisticated the measure and however recursive its administration, would not have been appropriate. At the same time it

seems that such a measure has been useful in its confirmation of earlier understandings, and that, taken in tandem with the interaction account, it enables practices to be identified and monitored and generates further bases for reflection.

The sorts of knowledges afforded by qualitative and quantitative approaches are different. These differences have been the subject of considerable debate in educational research. The position taken here is that, while recognizing these differences, it can be useful to allow contributions from both dimensions in the effort to gain a more complete and accurate picture of schooling practice and gender effects associated with it. It has been argued that these knowledge dimensions are so different that to put them together is to make a fundamental error of major proportions (Smith and Heshusius, 1986). For the purposes of this study it is claimed that within limitations this can be done. The actors/students/subjects are in fact the same people who were subjected to qualitative and quantitative investigation. As noted earlier a mixed methods approach such as this has been attempted only rarely for pragmatic as well as ideological reasons. It may be that the problems of a mixed methods approach will emerge as the data base grows. Meanwhile the epistemological soundness of the approach is not assumed, and nor is the debate dismissed. Ultimately it must be left to subsequent researchers to decide whether or not there are benefits to be gained and if the merit of such benefits outweighs the danger of building a case on disparate cornerstones. Although the present study has opted in favour of a mixed method approach, the conversation is still open...

CHAPTER 8

DRAWING CONCLUSIONS

Argument : (i) That gender relations are a continuous feature of the environment of the school and the classroom, and that the forms of gender relations here described are peculiar to the processes of organized learning and instruction;

(ii) That educational concepts which have arisen in the current climate of progressive pedagogy are gender laden insofar as they urge a particular form of educational practice in which the 'natural' is privileged in ways which disallow the perception of the gendered nature of such a construction;

(iii) That the discourses which make up the academic study of education have either been gender blind or have provided certain sorts of explanations of an order which is more likely to produce actions and perceptions which confirm gender distinction rather than challenge it.

The first section of this chapter will concentrate on taking an overview of the processes described at the three different schools and analysing the implications of these processes for the school's role in the construction of gender in students. The second half of the chapter will be devoted to a discussion of the theoretical basis of this research in terms of the theories and positions identified in chapter 2.

Section A

Gender relations as a continuous feature of schooling practice.

When children enter school they have come to understand themselves as male or female and that these are two important independent and discrete categories. This situation is what is meant by the claim that the children on their arrival at school in their first year have already been pre-inserted into the discourses of masculinity and femininity. Of course there will be an enormous range of meanings and locations possible within those discourses, and so to say that they are already operating within a discourse does not imply any fixed or reified

pattern of thought and responses. At the same time gender as constituted within the family has a particularist aspect in which family meanings are recognized as peculiar to that location by the family members, whereas the school represents the child's first encounter with the more universal meanings of the wider society (Delamont, 1983; Stanworth, 1983).

The children on entering school have yet to learn what the categories of male and female, masculinity and femininity, mean in terms of the process of learning and being in the school environment. The primary school provides an important site whereby the young people effect a translation of what it means to be male and female into acceptable forms of schoolboy and schoolgirl behaviour. While such a translation is never effectively completed (for such would imply a recognized endpoint) it clearly is a progression in that by the time the children are approaching the end of their primary schooling, as was the case for the focus group in the study, they have incorporated and display a wide range of gendered behaviour. So much has this behaviour become a part of their and their teachers' taken for granted assumptions of how things are and ought to be that they are largely unaware of its gendered nature. At the same time they are led to understand the school as operating in ways that are fair and 'not sexist', an ideology that works to mask the gender divisions that are actually occurring. In this way the boys report that '*everybody*' plays football, apparently unaware that the everybody claim leaves out some boys and all the girls. The girls say that the boys are disruptive and naughty, but reserve their more trenchant criticism for a girl whose behaviour does not conform to the accepted schoolgirl pattern. And their teachers fervently claim that their commitment to 'individuals' ensures that the students in their classes are not treated in sex specific ways :

To me they're not so many girls and boys; they're just a bunch of individuals.

The progression noted in the previous paragraph in which boys and girls interpreted and re-interpreted the message of schooling in gendered ways was seen to continue and change during the transition from primary school to high school and then with time in high school. For boys the predilection for 'mucking around' which they had established in primary

school as male-appropriate behaviour continued in the first year of high school in keeping with their 'less mature' developmental status, but also became associated with challenge to the teacher's knowledge as well as powers of control. By year 10 'mucking around' was translated into their use of humour. For the girls in the study the primary school years were associated with quieter behaviour and rule following. On entry to high school both groups of girls appeared less sure of their role, but by year 10 they had apparently taken on a clearer understanding of appropriate schoolgirl behaviour in terms of their particular school environment. And so the level of schooling had implications for the ways in which gender was constructed.

The role of opposition in gendered behaviour.

One of the key themes of poststructuralism is that meanings are constructed in relational terms, that is meaning is not a fixed entity but rather derives from the positioning of one feature within a discourse as it relates to other elements within that discourse (Weedon,1989). In the primary school gender relations are constructed in terms of opposition, with the girls more sure of what they are not than what they are, and the boys likewise. The meaning of these positionings can be seen to derive directly from their oppositionality, rather than from any intrinsic feature of girl or boy. In this practice the participants, both teachers and students, give substance to the feminist and/or psychoanalytic insight that to be male or masculine in our culture is not to be female or feminine (Chodorow, 1978; de Lauretis, 1987; Harding, 1987). Added to this oppositionality is the value-laden nature of the discourse which places the male as superior and requires that the female be inferior in order to structure the male superiority (Weedon,1989).

At the secondary school the discourse of opposition continues but becomes less strident as the students are caught up in gendered positions vis-a-vis knowledge areas. By this stage

they have some substance to support their notions of what they are and what they are not. They are more aware in high school of the connection between gender distinction and knowledge areas and tend to account for it in terms of 'naturally given' abilities and proclivities, as when the year 8 girls at the mixed high school said *Boys are brainier .. they've got all the answers.* By year 10 the girls were seen to take on another gendered position with relation to the boys in their class wherein they adopted a nurturant role commenting on the boys' maturity and development almost in the manner of possessive parents. By this stage gender difference has become so accepted and internalised that there is no need for the oppositional stance that characterised the primary school behaviour. And by year 10 the girls recognize their complicity in the adoption of gendered behaviour : *It's not that we couldn't ... it's just that we don't.* In this statement the girls reflect the ideology of progressive pedagogy which operates as though the students are freely choosing individuals in which freedom means freedom from overt control. This is precisely the freedom that Walkerdine has identified as "*a sham*" (Walkerdine, 1986, p.54) and at the same time it is the condition identified by Bourdieu as essential for schools to do their work (of sorting and selecting) effectively.

The absence of a genuine law ... must not lead us to forget that any socially recognized formulation contains within it an intrinsic power to reinforce dispositions symbolically.

(Bourdieu,1977b,p.21)

At the girls' high school the students were also aware of the oppositional stance taken up by boys and girls in primary school as they had all experienced coeducation in primary school before attending the girls' school. The degree to which the opposition operated in ways that were self confirming was revealed in the girls' frequent reports of '*missing the boys*' in year 8. In other words without the support of knowing what you were not supposed to be - because that's what the boys were - the girls were left relatively unsure of how to behave. At one level this lack of definition induced a regression to behaviour such as skipping which were identified by the older girls as *babyish* but can be read as the year 8

girls experimenting with behaviours in order to establish acceptable patterns.

In another sense "missing the boys" could be seen as indicative of a developing sexual awareness which was accentuated by the lack of opportunity to try out new ways of being around the opposite sex in the all female environment. Thus "missing the boys" became readily re-interpreted by the girls as indicating a sexual awareness celebrated in registering the desirability of males and their ways of being.

In positioning themselves as sexually aware the girls were also expressing a resistance to the protection afforded by the girls' school at the same time as they experienced fewer constraints about how to behave within that environment. The girls at the girls' school were much less likely to report lunch hour as boring than the girls at the mixed school, and they were also seen to engage in a far greater range of activities than did the girls at the mixed school. And yet, as was demonstrated in chapter 6, the real world 'where the boys are' takes on particular impact in the 'artificial' environment of the girls' school.

The natural and the normal as constructs.

It was clear from the comments of the girls in year 8 at the girls' high school that they were acutely aware of what they saw as the 'unnatural' nature of the all girls' environment. Just why the girls' school environment appears artificial whereas that of the coeducational school appears normal and natural is another example of the way in which currently accepted progressive pedagogy has redefined schooling by ascribing 'naturalness' to a mixed sex situation and 'non naturalness' to a single sex situation. Naturalness then becomes constructed in terms of the difference in gender context between that of the girls'

school and the mixed primary school which constituted their first school experience. The girls' comments were indicative of an assumption that the mythical 'real world' is more like the mixed school environment. And yet there are countless situations in the real world in which, despite the efforts of equal opportunity, populations are characterized by one sex - from the male dominated front bar to the afternoon supermarket, the factory floor in a sewing firm to the line workers at General Motors. The point is not to condone the fact that these situations exist, but rather to demonstrate the construction of the 'natural' that operates in schooling. All of which begs the question of why schools should presume claim to the natural at all; the practice of requiring children to attend and causing them to behave in fairly rigid ways for a certain period of their young lives relates more to the current values and mores of Western culture than to any intrinsic 'naturalness'.

By year 10 the girls in the girls' high school had re-negotiated acceptable behaviour in terms of their environment and their practice both inside and outside the classroom revealed a greater range of behaviours than had those of the girls at the mixed high school. This is not to say that all the girls at the girls' school behaved more loudly or actively than all the girls at the mixed school. Some of the girls' school students were as quiet in classrooms and as non-contributive as some of the girls in the mixed school. In the environment of the mixed school, however, such differences were compounded by always allowing for the interpretation of behaviour as male or female appropriate. In addition, because of the aforementioned construction of the non-natural environment of the girls' school, coupled with the powerful myth of the essential self within which the self is also seen as sexed (Connell,1987), the girls from the girls' school appeared to regard their school as providing a temporary haven within which they could suspend the pressing concerns of their real selves as young women-in-the-world. Hence they resisted the application of schooling ideology, of being active, powerful and non-traditional, to the world beyond school in which they planned to reassert their position in an identifiably feminine discourse which they read as appropriate for life in the real world.

Personalizing and Individuating.

A key theme to emerge from the study is the way in which in primary school the accepted practice is both personalized and individuated - teachers assert that they know and are personally known to their students. Because of their positioning within the discourses of masculinity and femininity the boys readily appropriate the concept of individuation and seek to stand out as individuals whereas the girls respond to the personal style of teacher-student interaction as it fits well with the discourse of femininity. In both cases the adoption of an individual or personal interaction style provides a solution to the impossible and yet fundamental precept of progressive pedagogy - that the teacher must aspire to a one-to-one relationship with each of the class members in a group of around 30.

The picture of girls and women responding to a personal learning style resonates with one of the epistemological positions, namely *subjective knowledge*, discussed by American researchers, Belenky et al., in their book Women's Ways of Knowing (Belenky, Clinchy, Goldberger and Tarule, 1986). Although the American work does not associate different styles of learning with different pedagogical forms as is being done here, it is of interest that Belenky et al. seek to give legitimacy to a personal or subjective factor as found in an investigation of learning styles used by women. This is not to say that girls and women necessarily and only respond personally to learning, but rather that such a response has been shown to be in the repertoire of female responses to learning and that it appears in this study as a result of the insertion of the girl students into the discourse of femininity and the contradictions implicit in classroom construction. Nor does the theory imply that girls and women are limited to a personal response to learning (although Belenky et al. include a subjective element in their highest form of learning, *constructed knowledge*) but they do contrast *subjective knowledge* with both *received knowledge* and *procedural knowledge*,

forms which bear close relation to the more usual conceptions of knowledge and learning (and which correspond to the impersonal learning style adopted by the boys and the teachers within the high school maths science classrooms).

Boys' experience at the coeducational high school was seen to build on the individuated student-teacher interaction style commenced in the primary school whereas for girls the less personalized interaction with teachers was the cause of some dissatisfaction - *Here you're just another number*. These different orientations were compounded by the impersonal stance typical of teaching in certain knowledge areas, most notably mathematics and science, in which the girls' disenfranchisement from the accepted classroom interaction style was further emphasized. At the same time the boys' less personal but more individuated demands were seen as appropriate within the understandings that operated within maths learning. And the knowledge areas which gave rise to these differences were also understood as having a position as valued and difficult male appropriate knowledge. At the girls' school where the girls had more opportunity to make their preferred learning styles known but where maths classes tended to continue in their traditional ways (the discourse of mathematics teaching was unchanged) the girls reflected their teachers' understanding that they did not enjoy and were not good at learning in these areas and thus the effect of the all girls environment was not sufficient of itself to reposition the girls as learners within the discourse of maths classrooms.

To sum up this point, the impersonal style of presenting knowledge in high school fitted well with the individuated positioning vis-a-vis the teacher that was adopted by the boys from at least midway through primary school. The girls who had also learned that overly dependent behaviour was not appropriate as they advanced through the primary years had learned and participated in a style of student teacher interaction in which they felt personally known, close to their teachers (summed up by one year 8 girl as *'like a mother'*). This sense of personal identification with the teacher had provided an entry into the knowledge

areas for the girls in primary school. Consequently in high school they were less able to respond to an impersonal construct of knowledge in which the teacher as facilitator did not evince or encourage a personal response to the topic. They were less likely to be 'caught up' in this discourse as it stood to some degree at odds with the style of learning within which they had happily participated in their primary school years. In this way girls' much reported superiority at 'rule-following' and neat work can be read as deriving from a personal allegiance with the teacher (and the hope of personal recognition for their achievement) rather than indicating a lack of initiative, of 'breaking set', of creativity.

Evidence for this reading of the girls' looking for some sense of personal engagement with the knowledge being taught comes from the frequent desperate attempts by some of the girls in the girls' school to provoke a personal involvement with their science or maths teachers - which frequently resulted in their simply provoking the teacher! The mixed high school teachers' readiness to write off the girls as lacking initiative and the girls' hiding their level of achievement are further indications of the same issue. The girls' not talking in class but actually having the answers and the marks suggests that they were unsure of what to do with the knowledge and skills, so much were the accepted routines at odds with their understanding of how to be in school. And the girls' frequent claims of "I don't get it!" in both high schools represent one way that the personal as a construct was permitted within the accepted classroom discourse. Such claims provided scope for the "I" and the realm of feeling, both constructs noticeably absent from the interactions in maths-science classrooms. It was not surprising that it was in these classrooms that the claims were most frequently heard. That females are evaluated more positively following failure and less favourably following success has been an enduring puzzle in motivational psychology and one that has consistently arisen in the research (Gill,1980). The problem of female achievement has led to a variety of innovative theories which seek to account for female 'underachievement' as a phenomenon which runs counter to the prevailing social values. Were such phenomena to be understood as the product of females taking up positions and

being positioned within a discourse of femininity in which femininity is constructed as antithetical to achievement , especially in 'male-dominated' areas such as maths and science, the researcher would be oriented to looking at features of the discourse rather than at the female psyche for explanations.

Gender and performance.

Another line of analysis which describes the gender distinction in student behaviour observed at all the levels of schooling covered in the investigation is concerned with the public and private aspects of performance. With students' passage through school performance is transformed within the discourse of schooling to be increasingly associated with some form of public achievement. In the primary school students reported that they were less likely to be praised, to be given stars or rewards in the senior years than when they were in the junior primary. As they advanced through high school not only was public recognition a rarer occurrence, it was also deemed much more important and these students were dismissive of the rave reviews they associated with the junior school years. There are gender implications in this development. Girls are recognized as good performers during the primary school years but they tend to downgrade this type of performance as they progress through school, as do the boys and their teachers. And so the comment came from the year 10 girl:

That's all it is in primary school - good writing and neat books!

But, as Walkerdine has pointed out, such features *are* part of the school's message - the virtues of neatness and legibility are stressed throughout and especially in the primary years (Walkerdine,1986). By responding to this message the girls cooperate in a devaluing of their work which ought, within the terms of the commitment of progressive pedagogy to self expression, to be more slapdash and individual - in other words more like that of the

boys. It is the very rule breaking that is more typical of and condoned as appropriate behaviour in the boys in primary school that is connected to behaviours which are seen in the secondary school as indicative of high levels of originality and intelligence.

Performance in the public sphere becomes more valued than private success. There are several aspects of the present study which reflected the gendered understandings connected with performance. An example was the difference between teachers at the primary school in the way they worked at achieving class cohesion; in this case the female teachers adopted a close caring style within the classroom 'I'm looking after each and every one of you and what a great class we are' and engaged in strategies wherein the groups would become closer through working together. The male teachers in contrast concentrated on more public aspects of performance; their classrooms were seen in public events, performing for schoolwide audiences, having their achievements registered beyond the classroom. In this way the male teachers' behaviour reflected the positioning of males within the school structure, in which the principal, deputy principal and sports teacher had official whole school responsibility. And the boys at primary school were seen to be whole school personalities much more frequently than girls - their teams were featured in assemblies and newsletters, their successes praised and their misbehaviours reprimanded. Boys were known across age and year levels much more than girls. In the classrooms observed it was not uncommon for boys to be unsure of the names of some of the girls - as was the case for the teachers at the girls' school. On the other hand the girls routinely knew all the boys in the class by name and could comment on aspects of their personality. And as for the boys, they were 'everybody', the whole school.

In the mixed high school the boys' participation in organized sport and their activities in the schoolgrounds continued the public aspect of performance which had originated in the primary school. With the more impersonal teaching style and the more distant relationships with several teachers the classroom became an arena for public jousting as well, a routine

characterized by "Why not?" "Isn't it ..?" "Couldn't you have ...?" from the boys and one from which the girls withdrew. Whereas in primary school the boys had challenged the teacher's control through their predilection for 'mucking around', general noisiness and rule-breaking, by high school the boys' questions and challenges were seen to fit in with understandings of intellectual ability, while at the same time able to be read as a bid for control. Of a similar situation Walkerdine wrote:

And the downplaying of this aggression in reasoned argument is itself an interesting transformation of power. Here it is the knower who can win and apparently topple the teacher, through argument. Disciplining becomes knowing.

(Walkerdine, 1986, p.59)

The girls withdraw from the public arena of the classroom which is characterised by this sort of contestation and contradiction. As a consequence they are seen as less intellectually active and if they do achieve good marks on tests are almost blamed for hiding their lights, for masking their intellectuality. They are less likely to be associated with the public sphere of school performance, and less likely to be known or noticed. One consequence which was identified in the case of the girls in the present study was that in the coeducational classroom the girls themselves are much less clear about their ability as learners than are the boys in these same classrooms or the girls in the girls' school (reported in chapter 6).

While performance is here used as a generic term to describe all sorts of student behaviour, including the gender differences in educational outcomes which provided the impetus for the study, it is also argued that it is a more useful way in which to view differences in particular sorts of performance such as talking in class, which does not operate as a characteristic all by itself, but is better seen as one aspect of the more general construct. The well documented gender differences in student-teacher interaction, which were replicated in the present study largely as a result of the boys' more frequent questions, interruptions and demands for attention, have sometimes been construed as indicating that the boys as a group receive more teaching than the girls (Spender,1980,1982). This

interpretation appears overly simplistic from the perspective of this work. It is the different location of males and females in terms of particular and valued areas of knowledge that is reflected in the gender differences in classroom interaction. Such differences do not emerge as a phenomenon unrelated to other aspects of school experience, but must be seen as one of the ways in which male and female students position themselves and are positioned in terms of public performance. It is here argued that the importance of such gender differences in public performance relates directly to issues of power and control. The boys in the study typically exerted more power over what was to happen in the course of a lesson by having a higher degree of control over what was said and who should say it than did the girls, a power that was symbolically realized by male dominance in the daily experience of the schoolyard. Through this experience the boys took up positions of prominence and asserted their 'natural' right to do so. At the same time the girls in attending to the boys' behaviour constituted themselves as audience, as the givers of attention rather than its recipients. That males and females are differently positioned in terms of attention giving and getting has been recognized by social scientists, for example, in a sociological analysis of the relation between attention and power, Derber wrote:

Men and women learn to pursue attention differently and expect and accept it in different amounts. In all patriarchal societies, women are typically assigned the attention giving roles and men the attention-getting ones. Accordingly attention-giving becomes defined as a 'feminine' skill and responsibility, with men gaining attention as a privilege of their gender.

(Derber,1979,p.43-44)

The contribution of this work lies in its revelation of how these differences are produced in schooling and hence their relation to concepts within currently accepted teaching practice.

At the girls' school the girls did challenge the teacher's control in the classroom and were afforded a much larger role in the determination of lesson pace and content than were the girls in the mixed high school. However their challenges were not made in the same

manner as those of the boys. Whereas the boys began with "Isn't it...?" "Why not?" the girls' frequent comment was "I don't get it!". The boys presented a picture of engaging with the intellectual work of the lesson while the girls positioned themselves very much as the uninitiated, dependent on the teacher as a source of knowledge. While both types of intervention implied a critique of the teacher, in the case of the boys it was in terms of a challenge to the authority of knowledge and control held by the teacher, whereas with the girls the teacher's status as the bearer of knowledge was not in question, although the skills of communicating that knowledge were. The girls' requests for more explanation served to reinforce the teacher's position as the keeper of the knowledge and at the same time the teachers' impression that the girls were neither good at nor interested in that particular area.

The overarching contention of this work is that for boys the passage from primary to secondary school is not marked by change in the role of boy/student, whereas for the girls in the study the primary school had presented one way of understanding schooling but it was one that was not appropriate for the years of high school. The girls had therefore to renegotiate their understanding of girl/student in keeping with the change they experienced in schooling ethos. Their repeated complaint in year 8 at the mixed high school of finding lunch times and recess 'boring' with 'nothing to do' is symptomatic of their feeling unconnected to the project of the school, a situation which had not arisen in primary school in which their relationship with their teacher was mirrored in their relationship to their friendship group, characterized by close personal contact and accessibility. This connection to the teacher was important for the girls in the primary school in that it allowed them access to the official power structure despite the fact that they did not perform as public individuals in the ways of the boys. In the present study the girls' school presented less of a contradiction to the girls' understanding of their place in school than did the mixed high school and yet the educational practice at this school was fraught with other contradictions relating directly to issues of education for girls. Here the girls had to renegotiate their place in a school without boys, and in many respects they accomplished

this more adequately outside the classroom than inside. Inside the classroom the girls positioned themselves as the novices, awaiting explanation from the teacher/expert. Without the stimulus of the boys' challenges to the teacher's authority and modelling of active intellectual engagement the girls' efforts to establish personal involvement with their teachers positioned them as other than actively engaged learners.

The schooling experience at Midstone Girls' was of a different order to that which occurred at Midstone High. This situation was found to be sufficiently different as to disallow one of the comparisons that was built into the design of the study, as noted in the previous chapter. However the investigation was able to generate a better understanding of girls' school experience by the inclusion of the girls' school in the study; in other words the similarities of girls' responses and behaviours in class at both schools provided a broader basis for analysis than had only one been included. The striking similarity of girls' attitudes in year 10 between the girls at the mixed high school and those at the girls' school which was revealed by the attitude measure results detailed in chapter 7 could be taken to support the position that gender context is irrelevant in its effects on girls' response to education. This conclusion is unwarranted. Given the complexity of interacting variables described in chapters 5 and 6, it is clear that there is not a basis for a straightforward comparison between the schools. This is not to suggest that such a study could never be undertaken. On the basis of the present work there are clearly key features of the school as institution which would have to be comparable before such a project could be undertaken. The conclusion that is urged here on the question of the relative merits of single sex as opposed to coeducation from the position of girls and education is that a detailed close grained investigation of schooling at comparable schools would need to be undertaken before attempting any definitive statement about the effect of gender context on the learning experience of girls.

Progressive pedagogy and the construction of gender.

In currently accepted educational practice (here called progressive pedagogy because of the influence of principles of progressivism) education is conceived of as a process in which the child's essential self is developed and revealed in ways which foster the flowering of naturally given potential, for example :

*Schools should seek to provide opportunities for the greatest possible development of each student.
Into the eighties : Our Schools and their Purposes. Education
Department of South Australia, 1981 p.11*

There are two fundamental precepts associated with this style of progressive pedagogy. The first of these is that the environment be as close as possible to the 'natural' real world which is understood as characterised by the lack of rules and rigid procedures that had been typical of schools of an earlier era. In particular it is an environment in which the sexes are supposed to mix - the 'line down the middle of the playground' of earlier days is laughed about as symptomatic of wrong thinking on gender issues. In the absence of formal restrictions an unofficial gendered behaviour code is seen to flourish, as has been described in the two coeducational schools in this study. In this environment, following Bourdieu , the school's work of contributing to the students' locating themselves in gendered positions is able to be carried out, all the more effectively because it does not seem to be doing so. The girls' school is immediately at odds with the notion of 'naturalness' which is embedded in this concept and the consequences of this positioning have been discussed above.

The related fundamental precept in progressive pedagogy concerns the role of the learner who is supposed to be actively engaged in the learning and to be seen as so doing.

*Schools should encourage students, according to their level of development, to participate actively in the life of the school and its community.
Into The Eighties : Our Schools and their Purposes. p.11*

Because of the aforementioned considerations in which gender is centrally connected to aspects of public performance in schools, the gendered nature of this concept becomes evident. Boys as public persona are positioned in schooling in ways that make the likelihood of their being seen much stronger than that for girls. The boys' behaviour generally fits with the construct of active as well, whereas that of the girls does not. The boys in this study were more often noted calling out in class, running around in the schoolyard, in many respects taking up the relatively limited opportunities that exist in schooling for being 'active'. (Note the girls by choosing not to demand attention in class can also be conceived of as actively making a choice, but it is not the sort of activity that is understood by the concept of the *active* learner.) The girls at the girls' school were more active in terms of their playground behaviour, but their classroom activities did not fit the model of being actively engaged in learning.

Both these central concepts of progressive pedagogy are therefore far from gender neutral in that they

- * ignore the gendered discourses of masculinity and femininity into which the 'natural child' is always pre-inserted;
- * construct learning as coterminous with accepted and expected male behaviour;
- * constitute female behaviour as less worthy and seen as such by teachers and students.

This last point is particularly pertinent in that in the present study the years in high school were accompanied by the girls' developing an awareness that 'boys' were brainier and more attuned to the areas valued by the school and at the same time that their own achievements were less worthy, only *good writing and neat books..* Walkerdine, commenting on the way in which actual achievement by girls is not recognized, writes:

What I am concerned to demonstrate is the discursive production of femininity as antithetical to masculine rationality to such an extent that femininity is equated with poor

performance, even when the girl or woman in question is performing well.
(Walkerline,1986,p.268, emphasis in original)

The present work contained many instances in support of this position, from all levels of schooling. Some instances :

MB in the primary school, dismissing a girl's skill in writing with the explanation 'Her father's a journalist' while a boy's work, of apparently similar quality, was celebrated as a great achievement.

JW, in year 8 maths in the mixed high school, of a girl who was offering answers, some of which were wrong : *Oh she's just a lump of wood.* No boys were referred to by this teacher in this dismissive fashion, although their contributions were also a mix of right and wrong answers.

SM, geography teacher in the girls' school : *Now this is the part that's hard for you girls to understand ... or for any of us , I suppose.*

The problem solving experience as described at the various levels and schools also supports the claim that girls and boys are differently positioned by classroom processes in which they jointly engage. It was repeatedly observed that the teacher's presentation of a new topic or a problem would be accompanied by much more evident striving and volunteering of possible solutions on the part of the boys. Given that such a venture requires *risk taking* and *breaking set* (psychological constructs which have been associated with male behaviour and not female) the gender difference in outcome is not unexpected. However its explanation, it is argued here, is better given in terms of the totality of discursive practices brought to bear on the situation rather than in terms of the essential mental structures of males and females. The girls who 'wait to be told how to do it' are

positioned as less intelligent, lacking initiative, although at the same time they are responding to one of the covert school messages that demands obedience and rule following. The girls are being penalized for having learned their lessons too well. Again, from Walkerdine:

Indeed in progressivism girls are often held up as lacking : they seem to demonstrate either deviant activity or a passivity which means they must be found lacking in reason and compensated for this lack.

(Walkerdine, 1986, p.59)

The girls' school in the study was set up in a compensatory mode, and understood as such by many of the staff, either in terms of the girls being less able at particular knowledge areas, or needing the protection of an all female environment so that their learning could proceed. As has been shown in chapter 6, the girls at the girls' school were 'caught up' in this discourse as it afforded a similar sort of personal response to the one they had used in the primary school : *Oh, Miss B., you show us how to do it and then we'll know next time!* The teachers complained that the girls seemed unwilling (or unable) to 'take responsibility for their own learning', which is another principle of progressivism wherein the actively engaged learner participates in the definition of the learning goals and methods. And yet such a presumption that they should do so ignores the discourse of schoolgirl behaviour in which the girls position themselves and are positioned as the receivers of knowledge as opposed to the makers of knowledge.

The way of seeing girls as caught up within a particular set of practices which take their meaning from the fact that they are not those of the boys fits with other more standardly accepted approaches within psychology. The issues involved in the psychology of motivation have been discussed already and here it is the work in 'locus of control' that is relevant. In this work girl students are typically seen as more ready to internalize responsibility for failure (I'm not good enough!) and to externalize responsibility for

success (I was lucky! It was an easy test!) whereas the reverse is true for boys in that they internalize responsibility for success (I'm good at this!) and externalize responsibility for failure (It was a freak question. I was sick that day.). The gender differences in locus of control have been understood as one of the more robust gender differences in the psychology of attribution theory, being frequently replicated (Dweck,1978,Leder, 1982b). However, attribution theory does not attempt to account for the development of such differences apart from a loose association with role theory, and thus the results are seen as causally connected with the sex of the subject. The point here is that such responses are to be understood as consistent with the theory that the girls and boys are operating within the ways of thinking and acting which form the habitus of their particular gender group, in fact its discursive practices. By linking these key central concepts, namely that of *habitus* and that of *discursive practices*, there is a theoretical basis for explaining not only how the gendered messages are transmitted, but also why the young people respond to them in the ways they do. A more complete discussion of this theoretical point will be given in the second section of this chapter.

The dangers of relevance.

Another principle of progressivism is that learning should be seen in relation to daily living applications and not experienced as memorizing a series of abstract rules and concepts which are entirely removed from actual situations. This is a precept of enormous commonsense appeal and one which fits with learning theory generally. However the focus on relevance has been seen to have disturbing implications in the investigation of gender construction in schooling.

In the primary school it was frequently noted that attempts at relevance opened the classroom door to the gendered and sexist practices of the world beyond school, the video lesson in chapter 4 being one example. When such practices become enmeshed with

classroom knowledge and practice they thereby achieve a legitimacy that is even more powerful given that it transcends the school's commitment to be seen to be operating in a fair and equal society.

In the high school, attempts to relate learning to real life were frequently seen to give rise to similar problems, for example the image of the geography teacher's mother sewing in the sun, or the discussion of youth activities in the context of a lesson on Romeo and Juliet, in coupling a male ordered world view to the official topic, thereby rendering it part of the covert message of the lesson. Even in the introduction of humour, which always functions as a cultural construct and often in Western society involves reference to sexuality, there are strong gender messages. For example, the maths lesson in which the story of the rescue of the beautiful princess was told, albeit in a lighthearted joking way to add interest, also added gendered positioning. The use of humour as a form of social control which was very much in evidence in several of the high school classrooms as a means of teacher control was taken up by male students as a way of controlling the girls (Riddell, 1989). Boys ridiculed girls for wrong answers, for 'stupid' questions whereas the girls were not seen to treat the boys in this way. Boys were identified as 'not being afraid to make a fool of themselves', which was seen as worthy behaviour. By year 10 the girls reported that they were prevented from entering into the humorous aspects of classroom discourse in that they had been appropriated by the males : *They don't like anyone to crack a joke except them*. Once again the sense is one of the girls conforming to this aspect of male control, just as they had done in terms of the boys' monopoly of the sporting fields : *It's not that we couldn't ... it's just that we don't*. In the analysis of humour in the classroom the very style of discourse shows an attempt to relate to accepted ways of being and reveals the gendered positions which such discursive styles set up. The position being urged here is not one which views knowledge being best transmitted in humourless abstractions but rather that the participants in schooling, teachers and students, become more aware of the gendered nature of the discourses in which they engage and that they make these discourses

available to scrutiny and renegotiation.

Gender and social skills.

The negotiation of group membership, which is part of the school's self-assigned responsibility to develop socialization skills in students, was seen to take place in different gender-distinct ways at each of the three schools studied. In the primary school the oppositional discourses of masculinity and femininity created the two tribes playground situation described in chapter 4. Gaining membership for a new boy involved running up and joining in the game, whereas for a new girl there was a greater need for sponsorship and to call on the empathy and goodwill to afford entry to the more tightly knit smaller social group. Within the classrooms the teachers undertook to promote social cohesion and they sought to ensure children were included within the gender defined friendship groupings. A child who is an 'isolate' is identified as one having problems. In primary school friendship is compulsory. In practice this means that belonging within one or other of the gender groups is also a requirement of schooling.

The gender distinct social practices continued at the mixed high school outside the classroom but were offset to some degree by the level of within class bonding that arose as a consequence of the school's less pastoral approach. While the boys and girls of 825 for instance were rarely seen in the same section of the schoolyard, much less interacting outside lesson times, during formal school hours they operated at times as a whole group (especially in the presence of outsiders - teachers going to the wrong room, visitors, the baseball game) and at other times as one which was characterised by pronounced gender division. As they progressed through the school the opposition between the boys and girls

was transformed into more established differences in gendered positioning, with the girls taking a more nurturant role towards 'our boys' while they waited for them to 'mature'. In this the girls are taking on the understandings from developmental psychology which place the girls as earlier maturers, more socially adept and able to be care givers. Not only was this role expected of them by their teachers' frequent commendations of girls' behaviour as being exemplary, but it also afforded them some form of personal involvement with schooling process, and one which accorded well with the discourse of femininity. The girls' adoption of caretaking behaviour did not necessarily come from an inbuilt need to nurture, but rather from their participation within a discourse of femininity which allows for such behaviour as one way of establishing a sense of who one is, as well as affording some social power.

The girls' school provided to some degree a conscious interruption of the social practices of the students in that it required them to get to know and interact with a larger number of other students than they had done previously. Despite this the personal response style of interaction that had characterised girls' responses to teachers and other students in the primary school carried over into the girls' school, albeit with a wider base. In the girls' school too there was evidence of the girls' negative response to what could be regarded as the strength of their social skills in that they were quick to condemn girls' fights as *bitchy* whereas boys' fights tended to be mythologized as symbolizing honesty and amusing bravado. Thus the girls who were aware of their own power as the product of years of getting to know one another well and who therefore knew exactly how to be most hurtful if they so desired, discounted this learning and gave it a negative label, thereby reflecting the different valuing of male and female activities and pursuits.

All of the above points relate to specific ways in which schooling process can be seen to involve the positioning of males and females in gender distinct ways which places the two

gender groups in different positions in terms of learning and achievement. The following section is concerned with the theoretical ground covered in the thesis and develops the theoretical basis upon which the abovementioned claims rest.

Section B

The work now turns to an analysis of the theories introduced in chapters 2 and 3 in terms of their capacity to locate and explain the gender distinct themes and practices described in the subsequent chapters and summarized above.

On first inspection it appears that no one set of theoretical approaches would be adequate to explain the gender different behaviors here described. If, following psychological theory, one were to use the biological makeup of the individual and hence the sex to explain the behaviors, there would immediately be a need to address questions such as

- * why are the girls more physically active in the environment of the girls' school than in the mixed environment?
- * are the gender differences observed in classroom interaction explicable in terms of individual personality variables? How does gender interact with personality?
- * Can learning theory explain why the girls appear as a group to be successful learners in the primary school and yet not so at high school? Or can this be accounted for in terms of biological difference between male and female brains?

On the other hand there were also variations within groups, a feature which would seem to discount a purely sociological explanation. Some of the girls in the classes under scrutiny were highly achieving students, some of the boys were not macho football players, some of the male teachers were gentle approachable people and some of the female teachers were

authoritarian. The situation does not reduce to that of gender being simply reproduced in the school in ways that are consistent with structures in the wider society, which is precisely the point made in the critique of reproduction theory discussed in chapter 2. The following paragraphs will attempt to identify the theoretical location as it emerged from the analysis of the data contained in the previous chapters.

Gender and Difference.

The first point concerns the impossibility of approaching a work like this from the 'theory blind' position. There is an immediate partiality in the chosen topic and this carries meaning for the subsequent procedures chosen for the investigation. To focus on gender implies a difference perspective, and situates the work within a current debate in feminist theory about the value of taking up positions which emphasize either the commonality of female and male experience (the basis of the egalitarian argument for social reform) or the uniqueness of female and/or male experience (Bacchi,1990; Hare-Mustin and Maracek, 1988). This investigation has examined the different positionings taken up by boys and girls in schooling. Nor, however, can one deny the commonality of the experience of school at least in the sense that the boys and girls in the study were present in the same classrooms, were students at the same mixed schools, undertook the same subjects with the same teachers. In fact the suggestion is that both sexes' experience of schooling as presented here may well be important in shaping the gendered attitudes males and females display to themselves, to particular features of school and *to each other*. This last point is particularly important in that as has been demonstrated in the previous section, schooling provides the opportunity for girls to find out what being female means as a direct consequence of having the boys as the opposite reference point, and similarly for the boys. Not only are boys and girls inducted into the logic of binary opposition through their use of language, but in schooling they are drawn to experience it in the ways of moving and being seen as appropriate for one sex and not the other.

Chapter 2 demonstrated the dangers of a similar sort of binary logic operating within the social sciences which has hindered the attempts to generate an adequate theoretical base from which to address the question of gender. The individual emphasis which exists in much of the work in contemporary psychology has led to the development of a data base in sex difference research which reified certain capacities and attitudes as masculine and others as feminine. The adoption of such categories was long thought to be in keeping with healthy psychological development. Recent feminist work in the area has revealed the political nature of such constructions and has increasingly called for attention within psychology to be displaced from the individual to the social in the attempt to theorize gender.

The contribution of psychology.

Given the prominence of psychology as a discipline in connection with educational questions it is not surprising to note that educational research has been heavily influenced by psychological questions and issues. Certainly the present work was to some degree informed by the sorts of questions that had been addressed in the psychology of sex differences and the more recent work on reconceptualising gender within psychology. The classroom observations were influenced by psychological theory in that there was a constant alertness to evidence of difference in cognitive style, especially in maths classrooms. The greater salience of boys in the classrooms which had originally been noted in American work within educational psychology, the gender differences in achievement motivation and locus of control also formed some of the focus of the research. Questions from the discourse of psychology entered in to the collection of data in the present study and also into the analysis.

There was another important way in which the present work was affected by psychological

discourse. This concerned the ways in which gender as a concept was discussed, interpreted and acted upon by the teachers and students in the study. As noted in chapter 3 the initial contact with each school was made in terms of girls and mathematics learning and, probably as a consequence of this sort of framing of the problem, the first interviews with teachers and administrators were characterized by discussions of whether or not the problem was explicable in terms of psychology: were there in fact cognitive differences between boys and girls? While all the teachers and administrators voiced the opinion that this probably was not the case, perhaps more as a result of their commitment to notions of equity than from memories of educational psychology, it has been shown in chapters 4, 5 and 6 that the practice in schools was frequently indicative of understandings of innate sexual difference. Biological determinism loosely conceptualised as connected to psychology operated as background noise in schooling discourse. And these meanings were picked up and echoed by the girls who said "*Boys are brainier .. they've got all the answers.*"

The other element from psychological discourse which was experienced in this study of schooling was the way in which the concept of 'development' was privileged in discussions with teachers and students. In the high school especially development was seen as centrally connected with maturity and sexuality, and it was in the high school that the schematic distinction between sex (innate, biological) and gender (socio-cultural) became totally blurred. In the mixed high school the teachers spoke of the girls' embarrassment as a consequence of their developing bodies as though this were a function of being female. The students also took on understandings of development as determining their social identity, best revealed in the year 10 girls' approving remarks about the way in which their boys had *matured*'. In the primary school development was seen by the students in terms of becoming school-wise, a positive feature as they laughingly dismissed behaviours seen as *juvenile*. The concept of development is centrally related to the structure of schooling with its division of students by age and relatedly developmental

level. And school success is associated with progression through the grades or levels. The point here is that the psychological concept of development carries with it the understanding that it is a good thing and, most importantly for this work, that it is a process of increasing gender distinction.

While the observational study was informed by the psychological themes mentioned above, it was also true that the usefulness of this orientation was limited to descriptions of behaviour rather than explanations of why the behaviour had occurred in the first place. For this, as noted in chapter 2, there are increasing calls within psychology for the concept of the social, the *cultural lens* (Bem 1987), in order to develop a theory of gender.

Sociological theory.

Turning to the discussion of social theory and the role of schooling as found in educational sociology, there is once again a need to acknowledge the usefulness of some of this theoretical location in the development of the argument presented in this thesis. Some of the problems with the orientation are similar to those encountered within psychology. One of these concerns terminology. Where psychology had initially concentrated on sex as a variable and gathered gender descriptors under its *sex* heading (on the basis that this set of adjectives was more commonly applied to males than females and vice versa) thereby blurring the distinctions that might have been made, educational sociology had a similar problem. Although in its use of *gender* educational sociology adopted the more socially aware term, it is also true that much of its data are concerned with numbers of males and females reaching particular levels of schooling, occupying particular positions within the workforce, in which case the variable is more correctly termed *sex*. Because the terms used also relate to the sorts of theoretical explanations offered, it seems important to demonstrate that the slippage between *sex* and *gender* is a continual feature of social science research and theorizing on this topic.

Redefining gender.

Ultimately it seems that the straightforward distinction between the terms, which was introduced in chapter 1, in which sex referred to biological difference and gender to socially produced differences, is no longer tenable. This definition attempted to construct a separation between the terms which in practice is consistently denied, albeit on changing grounds. At the same time the definition masked the relation between biological sex and socio-cultural gender, a relation that is the focus of much of the questioning around the topic. The conclusion urged in this work is that gender be seen as defined in terms of difference, such that gender is taken to designate the differences in practices, perceptions and attitudes which are constituted around biological sex differences and which take their meaning from such differences. Thus the gender difference that emerged in this work with respect to mathematics learning does not become important in or of itself until it is understood in terms of the different relationship taken up by males and females in terms of higher forms of knowledge and power in the world. And it is the connection between the mastery of mathematics and being seen as intellectually able which re-produces gendered positionings in maths classrooms, regardless of actual outcomes.

The teachers and school administrators in the present study displayed a similar sort of definitional slippage in discussing the research focus on girls and maths as though it presented either a question to be addressed through psychology (as noted above) or an acknowledgement that girls are identifiable as a group with particular educational disadvantage. In the latter case understandings from educational sociology had entered into the assessment of the functioning of schools, usually in connection with schools being destined to reproduce the inequalities of the wider society despite their efforts to counteract this. The effect of the teachers' communicating this understanding to their students was to confirm the impression of the girls as a group being determined by conditions beyond the

control of themselves or the teachers as was continually stressed in the earlier chapters, most especially in the case of the girls' school. In this way the discourses encountered in the professional training of teachers had been taken up in such a way as to relieve the teachers of responsibility to challenge the overarching determinist structures of either biology or social division.

The importance of sociological concepts also relates to the form of analysis presented here. In particular Bourdieu's description of the importance of the school operating as an autonomous institution has been addressed, in concert with his concept of cultural capital, whereby the schools function to reinforce structural social divisions while appearing to simply carry out their self assigned role as educational institutions. In addition concepts such as hidden curriculum, invisible pedagogy and symbolic violence which derive from the sociology of education have been useful here in orienting the researcher to adopt particular research methods which attempt to unpack features of commonly accepted educational practice and to discover 'what is really going on'. The classic reproduction theorists's formulation of the correspondence principle wherein classroom processes reflect broader social divisions formed the basis for adopting a participant observation approach to the research and interactionism as an analytic tool.

Reproduction or Adoption?

What was discovered , however, was that the situation was a good deal more complex than could be fitted into a straight reproductionist account. While in broad brush strokes the students were here seen to take up gendered positions, there was a great amount of variation within those positionings which required analysis. This difficulty highlighted the need to invoke Bourdieu's concept of habitus, seen in chapter 2 as a central if somewhat ambiguous concept, whereby people come to participate in and see themselves as members of social groups and at the same time their membership produces a cohesion within the

group. Thus the girls and boys described in the earlier chapters understood themselves as belonging to gender groups, not simply as a result of their innate disposition or prior learning, nor as a simple consequence of their teachers referring to them as Boys or Girls, but rather because at school they developed and practised understandings of how to behave, who to talk to, what to say etc. within gendered discourse.

It is the contention of this thesis that habitus, the 'rules of the game' (Bourdieu,1990), provides the theoretical common ground between some elements in the psychology of gender, structural sociology and poststructuralism. In order to investigate the concept of habitus, attention was drawn to the 'lived experience' of teachers and students, to what was in fact their discursive practices. Bourdieu has consistently insisted upon the indeterminacy of the concept of habitus, just as poststructuralism has stressed the multiple nature of meaning and the multiplicity of positionings available within discourses. In other words both approaches allow for a range of membership positions within a collectivity. There is also a boundedness which is important to recognize. There are many ways of participating within a discourse of femininity, but there is also a cultural logic which binds together the participants even at the same time as they seek to take up individually different positions.

Bourdieu has at times described habitus as the 'feel for the game', the mechanism whereby the rules of social custom become internalized to such a degree that they are not distinguishable from the person. The metaphor of the game is a useful one; there are rules but they are not immutable "*It's not that we couldn't ... it's just that we don't*". The rules are generated in a sense of complicity, not with any reified list of instructions, but by the active participation of all the players. This is precisely the point of post-structuralist theorists who argue that what may be felt, said or done in a given situation is always contained within the discourse which makes such words, feeling or action possible. In the concept of habitus, Bourdieu offers a theoretical explanation of why people are drawn into groups and the ways in which groups function. A focus on language and discursive

practice reveals how theoretically the subjects through their own actions become participants in social groups and how they come to understand who they are in concert with taking up positions within the discourse.

By focussing on discursive practices, this work has been able to show not only how the gendered messages of the school are transmitted, but also how they are taken up, and then how the discourse of schooling, as revealed in the conjoint practices of teachers and students, acts back on the participants to produce the gendered understandings here described. The focus on discursive practices is here combined with understandings from sociology such that discourse can be read as ideology-in-practice, revealing the processes whereby hegemony is achieved. Thus the fact that the boys understood themselves as public individuals by the last years in primary school was also accompanied by the girls' consenting to that definition, constituting themselves as audience and understanding the inequality as part of the proper order.

Ultimately then this work must be read in the post-structuralist tradition of borrowing theoretical concepts from earlier work in social science and applying them as appropriate. The post-structuralist interpretation being applied here is one that incorporates structured social division and attempts to look more closely at how such divisions come about. In so doing the work has made use of concepts and insights from psychology and sociology of education and has drawn on these theoretical fields. At the same time an attempt has been made to identify the limitations or potential black holes that exist within psychology and sociology with respect to a theory of gender. The resultant combination of theoretical approaches appears to offer a much stronger explanation of the processes of the construction of gender in schooling. It does not claim to be the only reading that could be undertaken from the data as presented. Undoubtedly researchers operating within one of the traditions in social science would be able to provide different readings. However the strength of the approach chosen in this work is that it does not reduce the outcomes,

namely the constitution of gendered individuals, to the overdetermined results of other theoretical approaches, but rather allows and invites this reading to be considered as a basis for further work.

Coda.

Had the results of this investigation been reported a decade ago it is likely that the manner of reportage would have been very different from the foregoing. More likely than not, the report would have emphasized the concept of culture and the account of schooling practice would have been given in terms of the students' being assimilated into the culture of the three schools described. The gendered responses that have been detailed would have been read as logical outcomes of the cultural experience the school had provided for the boys and girls in the study. Such was the location of some of the more interesting accounts of the school's role in gender construction as seen in some of the research reported in chapter one. And all such accounts, while eschewing the determinism of explanations given in terms of biological differences, have themselves opted for another form of determinism, one in which the biological givenness of sex is replaced by the somewhat amorphous concept of culture and operationalized in the process of socialization.

However the difference in the account presented here rests on more than terminology. What has been shown is the ways in which the students, themselves, participate in and construct the culture of schooling, here best understood in terms of its discursive practices. Starting from the fact of gender distinction being an outcome of educational experience, this work has revealed the student subjects actively engaged in the process of constructing the

gendered attitudes and practices which then produce the gender differences which define and delimit their school and post school possibilities. The crucial difference between the account rendered here and earlier accounts rests on viewing all of the participants in schooling as both determining the boundaries of possibilities for themselves while at the same time being determined or bounded by them.

Many of the programs and policies which have been designed and written to promote gender equity in education have been grounded in the earlier theoretical approach identified here. If the school culture is the cause of gender inequity, so the logic goes, then by changing aspects of that culture the inequity will be eradicated. And so programs aimed at getting girls to continue in maths education, to speak up more in class, to have their day on the oval have been vigorously supported. What such programs have failed to recognize, and why their success has been less than spectacular, is that it is the girls themselves who were and are active participants in a discourse in which they are positioned as other from the boys, a discourse which informs and allows the daily interactions of students and teachers, a discourse in which *the very act of their participation* renders them unaware of its political nature. (The connection between the discourse of schooling containing within it unconscious political locations and the classical Freudian idea of the Freudian slip whereby a feature of one's unconscious mind becomes inserted into one's speech is noted.)

The theoretical location which has been suggested here forms the meeting ground for concepts such as Bernstein's *invisible pedagogy*, Apple's (and others) *hidden curriculum*, Bourdieu's *symbolic violence*, all of which sought to identify ways in which in schooling the students learned and were taught messages other than the official school one of maximising the potential of all. The application of these concepts to the question of gender difference in schooling outcomes is a reasonably straightforward inference. However it too is limited to a determining notion of environment which is unlikely, it is argued here, to lead to genuine reforms. Schooling analysed in terms of its discursive practices can be

seen to operate at a variety of levels and with multiple positionings available to male and female students. The picture here is much more subtle than earlier accounts of male and female roles and role models. There are many ways of being male or of being female within the school environment, just as there are many ways of being a student, or of being a big kid or a little kid, or one from a wealthy family or from a poor family, or of being Italian or Greek or Vietnamese. And some of these overlap. At the same time, an analysis of gender as embedded in the discursive practices of schooling derives from the position of gender as a source of profound structural social division, as do analyses of class and race, albeit along different although interacting planes. As such the school produced gendered positionings revealed here in the discursive practice of schooling can be seen to relate directly to the power positions of males and females in the world beyond school. And the discourses of masculinity and femininity which the students bring with them to school are sustained by the larger structural divisions, although the ideology of schooling which is concerned with operating in fairness and equality works to mask those divisions. The connection goes for the most part unnoticed, except for the occasional insight such as that of the 10 year old footballer who sought to justify the all boys composition of his team with

Well you don't see many ladies playing footy on Saturday afternoons on the telly, do you?

As a consequence of this masking new forms of discourse arise, forms which are appropriate to schooling and appear to accord with the school's official promotion of equity. What this work has done is to reveal the ways in which these discursive practices work to produce and maintain the differences between males and females in terms of educational outcomes and which therefore sustain the structured gender differences which characterize the total social formation.

This conclusion may be seen as depressing in that it urges a perception of the embeddedness of gender distinction within the 'normal' ebb and flow of daily interaction

between teachers and students and among the students themselves. And yet such a perception must be seen as the first stage in any attempt to counteract the construction of what Davies has termed the male/female dualism (Davies,1989). At the same time such an awareness is a necessary but far from sufficient contribution to the process of deconstructing gender. What is needed also is a continued effort to rework language, to monitor behaviour, to name sexist practice for what it is and to provoke discussion in class whereby the 'unconscious' dimension of gendered discourse becomes conscious, and in so doing becomes available for contestation. Davies quotes Harre in this regard:

The task of the reconstruction of society can be taken up by anyone in any time in any face to face encounter. (Harre, 1979, p.405),

and adds :

But the trick is to have others recognize and accept the discourse through which the reconstruction is taking place.
(Davies, 1989, p.137).

This point seems centrally related to the work of teaching. Teachers, by virtue of their structured relation to knowledge-making, truth and hence power, have particular responsibility in terms of the avoidance of sexist practice, the recognition of it when it occurs and the promoting of forms of discourse which do not carry the male/female dualism as a central feature.

A theme running through this work has been the demonstration of ways in which binary logic works to privilege certain ways of thinking and to render other approaches out of the question. So too with teacher education in terms of its customary split between theory and practice such that the actual classroom interaction is seen as an area of management skills and clear communication in which the pure and effective transmission of knowledge is accomplished. The situation as described in this work is not quite so simple in that the gender-laden discourse which accompanies the transmission of knowledge produces understandings in the students of their gendered positions within a gender divided world and can both interfere with and/or enhance their position as learners. One recommendation

which flows from this work is that the study of the discursive practices of schools and classrooms be incorporated into teacher education courses and become central to the way in which education is theorized as well as practised. Only then will practices be able to be understood and reconstructed. As Foucault wrote:

The problem is not one of changing people's consciousness or what's in their heads, but the political, economic, institutional regime of the production of truth.

(Foucault, 1979:14 quoted in Lather, 1989,p.28)

APPENDIX I: Primary school survey.

Part 1: WRITING A STORY ABOUT A SCHOOL.

1. There is a character in the story who is always in trouble, a problem student. Nothing seems to go right for this person. What name would you suggest for such a character?
2. Write three adjectives to describe this person.
3. What grade or year level is this person?
4. What school subject gives this person the most problems?
5. Who is telling off this person continually?
6. There is another character in the story, a very good student. Everything goes right for this person. What name would you choose?
7. What is the good student's best subject?
8. How do other classmates feel about this person?
9. This time I need a name for one of the teachers. This is a warm approachable person, someone you could go to if you had a problem. What shall we call this teacher?
10. Another teacher. This one is an authority figure, someone many people are afraid of. What shall we call this person?

Part 2: Questions about you.

1. What would you say was the most important subject(s) you study at school?
2. Tell me your favourite subject(s).
3. What subjects are you looking forward to studying at high school?
4. What sort of job would you like to do when you finish school?
5. Do you feel sure that you will end up doing something like that?

Appendix II: High school survey.Student Attitude Scales:Part A.

Please show your answer to each question below by marking with an X. If you feel the statement is true mark the space after T. if you are uncertain mark the space after U, and if it is false then mark the space after F. For example if you feel happy at school then you might mark your booklet as follows:

I feel happy at school. T (X) U () F ().

- | | | | |
|---|------|------|------|
| 1. I look forward to coming to school each day. | T() | U() | F() |
| 2. At times I feel lost and alone in this school. | T() | U() | F() |
| 3. I have trouble keeping up with my work. | T() | U() | F() |
| 4. I like my teachers. | T() | U() | F() |
| 5. A lot of what we are supposed to do at this school
doesn't make sense. | T() | U() | F() |
| 6. I'm afraid to tell the teacher when I don't understand the
work. | T() | U() | F() |
| 7. Other kids in the class try to include me in whatever
they are doing. | T() | U() | F() |
| 8. Nobody in this school listens to the suggestions I make or
the things I say. | T() | U() | F() |
| 9. I would feel happier at school if I wasn't expected to do
so much on my own. | T() | U() | F() |
| 10. My teachers are helping me to learn and understand. | T() | U() | F() |
| 11. In school I am often able to work with people I like. | T() | U() | F() |
| 12. You have to be lucky to get good marks at this school. | T() | U() | F() |
| 13. During exams I worry that I might fail or do badly. | T() | U() | F() |
| 14. I do not really enjoy anything about school. | T() | U() | F() |
| 15. At this school I don't have as many friends as I would like | T() | U() | F() |
| 16. Normally I feel quite relaxed at school. | T() | U() | F() |
| 17. Some teachers are really against me. | T() | U() | F() |
| 18. The way this school is run leaves me so confused I
don't know where to turn. | T() | U() | F() |
| 19. I tense up when the teachers ask me questions in
class discussion. | T() | U() | F() |

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|--|------|------|------|
| 20. In this school people like me don't have any luck. | T() | U() | F() |
| 21. What happens in this school goes on no matter what the pupils do. | T() | U() | F() |
| 22. I wish we were free to do things our own way instead of being told exactly what to do. | T() | U() | F() |
| 23. I am making good progress with my work. | T() | U() | F() |
| 24. I am accepted and liked by most of the kids in my class. | T() | U() | F() |
| 25. I think that people like me will never do well at this school no matter how hard we try. | T() | U() | F() |
| 26. During exams I worry a lot about how I am doing. | T() | U() | F() |
| 27. I like school better than most kids. | T() | U() | F() |
| 28. Nobody in this school seems to notice me or care what happens to me. | T() | U() | F() |
| 29. It is hard for me to do as well as my parents and teachers expect. | T() | U() | F() |
| 30. My teachers are friendly towards me. | T() | U() | F() |
| 31. A good deal of school work is just to keep us busy. | T() | U() | F() |
| 32. I am often afraid I will make a fool of myself in class. | T() | U() | F() |
| 33. When exams are due, I feel quite confident I will do well. | T() | U() | F() |
| 34. My teachers take into account what I need and what I am interested in. | T() | U() | F() |
| 35. I get upset when my teachers don't come to my help when I need it. | T() | U() | F() |
| 36. I am quite satisfied with how my schoolwork is going. | T() | U() | F() |

Part B is given in the text in chapter 7.

Part C.

1. Which year has for you been the best year in school?
Why?
2. Which of the subjects you are studying do you consider the most important?
Why?
3. List what you consider to be the best three features of this school.

1. _____

2. _____

3. _____

4. In maths class you are in a group of around 30. If everybody were placed in order from highest to lowest (1= best, 30 = worst), where do you think you would be?

_____ (use a number)

5. What do you find most annoying about being at this school?

1.

2.

3.

6. Do you intend to complete secondary school?

If so, which subjects do you think you'll be taking in year 12?

1. _____

2. _____

3. _____

4. _____

5. _____

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