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**Parents' Gendered Influences on Child Development in  
Middle Childhood and Early Adolescence**

Anneka Linsey Dawson

Thesis submitted for the degree of Doctor of Philosophy

University of Sussex

June 2011

### **Statement**

I hereby declare that this thesis has not been, and will not be, submitted in whole or in part to another University for the award of any other degree.

Anneka Dawson

17<sup>th</sup> June 2011

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UNIVERSITY OF SUSSEX

Anneka Linsey Dawson

Thesis submitted for the degree of Doctorate of Philosophy

**Parents' Gendered Influences on Children's Development in Middle Childhood and Early Adolescence****Summary**

This thesis examined the influence of parents' gendered attitudes and behaviours on three different aspects of development in middle childhood and early adolescence through three papers. The first paper explored the longitudinal influence of parents' gender-role attitudes and division of household responsibilities on children's gender development. Results showed that parents' gender-role attitudes and division of household responsibilities were predictive of children's gendered personality traits, gender-role attitudes and feminine preferences for activities, but not their masculine preferences for activities. The second paper investigated the influence of parents' gender-role attitudes and division of household responsibilities on children's ability self-concepts. Parents' gendered attitudes and behaviours were not predictive of children's ability self-concepts. However, children's own gendered attitudes and behaviours were associated with these self-concepts. Children's higher feminine preferences predicted lower maths and sports self-concepts and higher English self-concepts. In addition, higher masculine preferences and personality traits predicted higher sports self-concepts. Finally, the third paper explored the influences of parents' gender-role attitudes and division of household responsibilities on sibling relationship quality, and marriage and parenting as mediators of this association, which is unique to the literature. Families with more egalitarian division of household responsibilities had more positive and less negative sibling

relationships than traditional families. Using structural equation modelling, parenting, but not marriage was found to act as a mediator. Papers 1 and 2 used a longitudinal sample of 106 families with two siblings and their parents from the South East of England. Paper 3 used just the first wave of data from this study which included 124 families. This research highlights the importance of taking a family systems approach to examining child development, and emphasises the need to explore the father-child and sibling relationships in addition to the prevalent focus on mother-child relationships. In addition, multiple dimensions of gender were explored for parents and children rather than just examining sex differences. This added extra depth to the analysis and aided in understanding the complexity of these associations. The diverse nature of influences of parents' gendered attitudes and behaviours on these three areas allows comparisons to be made that contribute to the literature on parental influences and our understanding of child development in middle childhood and early adolescence.

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## **Chapter 1: Introduction**



## **Introduction**

Parents' gendered attitudes and behaviours are established predictors of children's gender development (see Ruble, Martin, & Berenbaum, 2006 for a review). However, the breadth of influence that parents' gendered attitudes and behaviours has on other important areas of children's development such as family relationships and ability self-concepts remains relatively unexplored. This thesis aims to close these gaps in the literature and build on the existing knowledge of children's gender development, by examining how division of household labour and parents' gender role attitudes influence children's gender development, ability self-concepts and family relationships. The purpose of this initial section is to provide an overview of the existing research that examines the influence of parents' gendered attitudes and behaviours on children, and also to evaluate theories of children's gender development in middle childhood and early adolescence. The four goals of this overview are: to provide a background of the literature on parents' gendered attitudes and behaviours and related theoretical perspectives; to examine the different theoretical perspectives underlying family research that incorporate parental influences; to discuss a selection of theoretical perspectives on children's gender development; and to review literature on ability self-concepts. Finally, the overview will end by describing the aims of the thesis.

### **Parents' Gendered Attitudes and Behaviours**

Over the past sixty years since the Second World War there have been shifting expectations for male and female roles, particularly in relation to the increase of women in employment. This has led some researchers to postulate that there is now a more equal division of household labour and more egalitarian gender role attitudes for both men and women (Burt & Scott, 2002; Pleck, 1997). In

particular men are now more accepting of women working and contributing financially to the family after the women's movement (Burt & Scott, 2002). This is due to a large increase in egalitarian attitudes around the 1960's and 1970's which has continued to date, although the rate of change has declined (Burt & Scott, 2002).

In the past traditional gender roles have been wives doing the majority (if not all) of the household tasks and the child-care, with husbands being the main breadwinner. Research in the 1980's suggested that although there had been some small changes in division of labour compared to the past, men were still only contributing towards 30% of household work (Pleck, 1985). Other researchers considered that there had not been any change at all and that the division of labour in the 1980's was the same as it was in the nineteenth century (Cowan, 1987). Berk (1985) found that another important factor is what tasks men and women actually do, as evidence suggests that women generally do the more repetitive routine tasks such as cooking and cleaning, whilst men do more infrequent, irregular tasks such as household repairs. Lamb (1987) found that women spend three to five times the amount of hours actively involved with the children in comparison to men, and Berk (1985) found that women do two to three times more family work than men. More recent research has shown that paternal involvement has increased over time with fathers being more engaged in family life (Pleck & Masciadrelli, 2004). However, Sanchez and Thompson, (1997) found that women still bear the responsibility for more household chores, decisions and childcare and Lachane-Grzela and Bouchard's (2010) review of studies on household labour between 2000- 2009 showed that women were still responsible for the majority of household labour. This could be because men are still more traditional than women in their attitudes and less happy with changes that challenge traditional male roles, including taking part in

traditionally feminine household tasks (Burt & Scott, 2002). This extra responsibility for women of housework on top of working led Hoschild (1989) to coin the phrase the ‘second shift’. Women have the first shift of a day’s paid work, and then the second shift of housework and childcare both at the start of the day and when they return home. Research has shown that there has been a vast increase in men who hold more egalitarian gender role attitudes from the 1970’s to the 1990’s (Bond, Galinsky, & Swanberg, 1998). This means that the gap between women’s and men’s beliefs is closing over time, but research is still mixed about current gender role attitudes with some studies finding that women still hold more egalitarian beliefs than men (Crouter, Whiteman, McHale, & Osgood, 2007) and others finding no significant differences between men’s and women’s attitudes (O’Shea & Kिरrane, 2008).

This thesis explores both parents’ gender-role attitudes and division of household labour as McHale, Crouter, and Whiteman (2003) stated that:

“Research and theory suggest that the study of gender roles in marriage may be a fruitful line of inquiry in efforts to map the family’s role in children’s and adolescents’ gender development.” (p139)

Furthermore, research from the family literature and self-concept literature suggests that parents’ gendered attitudes and behaviours may also influence family relationships and children’s ability self-concepts (Parke & Buriel, 2006; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006).

### **Gender Role Theories**

The functionalist approach is used frequently in sociology research based on the work by Becker (1981) and Parsons (1949), and suggests that the family works best when husbands and wives adhere to gender role specific tasks. This leads to

higher marital quality as the family functions well and is stable (Brennan, Barnett, & Gareis, 2001). Building on the functional approach, the independence model posits that as women become more financially independent, they are less invested in the marital relationship and family functioning, threatening marital stability and thus marital quality. In contrast to these traditional approaches, feminist theorists (for reviews of feminist family research see Fox & Murray, 2000; Thompson & Walker, 1995) have argued that more egalitarian division of household labour is important for more positive marital relationships as spouses feel supported and work together more as a team (Pina & Bengston, 1993). For example, if a woman has more egalitarian values, then her husband not doing enough household labour could also increase marital conflict as they will not feel supported (Benin & Agostinelli, 1988).

### **Family Theories**

#### **Ecological Theory**

Originally described by Bronfenbrenner in his book, *The Ecology of Human Development* in 1979, ecological theory posits that there are five different types of system which interact with each other to influence peoples' attitudes and behaviours. These are microsystems, mesosystems, exosystems, macrosystems and chronosystems. Microsystems are a person's everyday setting, and for children this would be the home (or classroom). The microsystem consists of roles, relationships and daily activities and research suggests that these three elements in the family predict individual differences in child development (Barber & Eccles, 1992; Stevenson, 1991). Mesosystems are connections between microsystems such as the link between home and school for children. Exosystems are the larger social systems such as neighbourhoods and can also include aspects of the environment such as parents' work place, which do not directly involve the child but can have a

significant indirect impact on their life. Macrosystems are the contexts for all these other systems and include cultural and societal values, roles and beliefs, and include groupings such as ethnicity, religion, socio-economic background and cultural beliefs. Finally, chronosystems are the element of time and can include time in the life span (e.g., middle childhood), life events (e.g., school transitions) and historical time (which may interact with aspects of the macrosystem such as culture).

This thesis examines part of the children's microsystem by testing the links between parents' gendered attitudes and behaviours and children's own gender development and ability self-concepts (Papers 1 and 2). Gendered attitudes and behaviours consist of division of household labour (roles and activities parents share in the household such as child-care, cleaning and decision making), as well as parents' gender role attitudes which are reflective of parents' individual beliefs and also cultural background. In addition, another area of the microsystem was examined through an investigation into how parents' gendered attitudes and behaviours interlink with parenting and the marital relationship to influence children's sibling relationships (paper 3). All three papers also take into consideration the importance of the stage in the life course to the research; middle childhood to early adolescence has its own unique set of experiences and level of cognitive development which provide the framework for all three studies.

### **Family Systems Theory and Spill-over Hypothesis**

Family systems theory was derived from the ideas behind family therapy which started in the 1930's with Nathan Ackerman (Combrinck-Graham, 1990). Family therapy includes different members of the family within therapy and often can be led by the child/ children within the family. Family therapy does not assume that families are the cause of problems, but recognises the influence and support that

families can provide. Minuchin (1974) posits that how a family is organised and structured is essential to its development. Boundaries are important in this theory, with Minuchin stressing the need for a distinction between the different subsystems within the family such as the marital dyad and the parent-child dyads. Identifying the different relationships structures within the family is essential in gaining understanding of power distributions and communication within the unit. All members of the family are understood to be interdependent and influence one another.

The spillover hypothesis (Engfer, 1988) is closely related to family systems theory and ecological theory, as they all call for a wider examination of family relationships due to interdependence and overlap between the multiple family relationships. The spillover hypothesis stipulates that behaviours and qualities of one dyad can ‘spill-over’ to other relationships within the family. For example, the quality of the marital relationship could impact both parent-child relationships and sibling relationships. There are various theories attempting to explain the processes behind spillover. For example, Erel and Burman (1995) argue that the marital relationship is at the centre of family relationships, and influences other family relationships through the parent-child relationship. They theorise this is because positive and supportive marital relationships enable parents to be more emotionally available to their children, whereas negative and disruptive marital relationships leave parents distracted and consequently less attentive to their children. Four mechanisms of spillover have been theorised based upon research from family systems and social learning perspectives (Erel & Burman, 1995). First, parents ‘scapegoat’ problems from within the marital relationship on to the child, moving the focus of the problem away from the marriage to the child’s behaviour instead. This

can reduce conflict in the marital relationship but leads to poor parent-child relationships instead. Second, a social learning theory perspective suggests that children will model their parents' behavioural style in the marital relationship. For example, if the relationship is warm and caring, then more positive emotional behaviours are modelled for children, whereas if the marital relationship is highly conflictual, then more negative emotional behaviours are encouraged. Third, socialisation theorists (Easterbrooks & Emde, 1988) suggest that marital disagreements about how to discipline children will lead to poorer marital relationships and inconsistent discipline of children. This will also contribute to poorer parent-child relationships due to unclear boundaries, and can lead to children taking advantage of inconsistent parenting. Finally, a sociological perspective suggests that there are multiple routes for transference of behaviours between the marital and parent-child relationships. Problems in the marital relationship may consume parents' time and energy, leaving the child relatively neglected. Alternately, the parent-child relationship may influence the marital relationship, by taking away the focus from the marriage to the children. Finally, a stressful influence outside of the family may impact across several family sub-systems.

Family systems theory and spill-over hypothesis guided this thesis by encouraging an examination of child development within the family context, and considering multiple family relationships from multiple perspectives.

### **Children's Gender Development**

The development of children to be masculine or feminine has been of widespread interest to researchers since Freud in the early twentieth century, and at present there are many conflicting theories. Gender differences can result in vastly different lives for boys and girls, from playmates and toy choice in childhood, to

choosing which subjects to study at school and which career to pursue as an adult. Examining gender differences and the possible causes for their development is therefore an important area for developmental psychologists. Deaux's (1993) definitions of sex and gender are used throughout this thesis with *sex* based upon the categories of male and female and are used when referring to sex differences which rely purely on biological category. *Gender*, in contrast, is how masculine or feminine the child is on different dimensions such as preferences for gendered activities and gendered personality traits. Gender differences thus relate to differences on these gendered dimensions.

This review sets to ground this research by firstly examining sex differences in middle childhood and early adolescence and secondly, exploring the different theories of how gender develops in early to middle childhood including an evaluation of each perspective.

### **Sex Differences**

There are several extensive reviews of sex differences in the literature (e.g., Perry & Pauletti, 2011), so the sex differences discussed here are relevant to the three areas of child development in this thesis. First, sex differences have been found in aspects of children's gender. For example, differences in interests in gendered activities and toy choice as young as eighteen months continue through early and middle childhood (McHale, Kim, Whiteman, & Crouter, 2004; McHale, Shanahan, Updegraff, Crouter, & Booth, 2004; Ruble & Martin, 1998). Research has also found differences in personality traits with boys displaying more instrumental traits like independence and competitiveness, which are considered *masculine*, and girls displaying more expressive traits like gentleness and patience, which are considered *feminine* (Antill, Russell, Goodnow, & Cotton, 1993). For example, Eisenberg,



Fabes, & Murphy (1996) found differences in emotionality with girls displaying more sadness and fear and boys displaying more anger. In addition, differences in gender stereotypes have been reported with boys holding more rigid views of the sexes throughout middle childhood (Antill, Cotton, Goodnow, & Russell, 1994). This may be partially down to the stigma attached to boys performing gender counter-stereotypical tasks that does not exist to the same degree for girls, and research has shown that boys' gender identity requires a higher level of gender conformity than girls (Egan & Perry, 2001). Jackson and Tein (1998) found that boys had more traditional attitudes regarding men's and women's roles and White and Brinkeroff's (1981) study of 669 boys and girls aged 2-17, showed that gender-typing begins very early in household roles. In fact, there is evidence that sex differences start at birth (Matlin, 1987; Quiery, 1998), and that stereotypes in play are found at preschool-age with boys being more aggressive and competitive, and girls being more co-operative and facilitative of others (Cramer & Skidd, 1992). Therefore examining children from an early age through to early adolescence when far-reaching academic choices are made is important.

Second, sex differences in academic achievement, perceptions of academic competence, as well as the interest and value children place on different academic subjects have been investigated by Eccles and colleagues (Eccles & Wigfield, 1995; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Eccles-Parsons, Kaczala, & Meece, 1982). Results from this research suggest that boys have more interest in, value more highly, and perceive themselves to have more ability in sports, maths and science. Girls in contrast have more interest in, value more highly, and perceive themselves to have more ability in English, art and music. However, research on sex

differences is by no means conclusive, and there has also been a multitude of studies finding no sex differences for ability self-concepts (e.g., Stipek and Gralinski, 1991)

Finally, sex differences have been found in family relationships with more positive sibling relationships, characterised by more warm and intimate interactions, found in sister dyads in comparison to brother dyads or opposite-sex siblings (Kim, McHale, Osgood, & Crouter, 2006; McCoy, Brody, & Stoneman, 1994). McHale and colleagues (1999, 2000) have found that parents consistently spend relatively more time with children of their own sex. However, Pike, Coldwell, and Dunn (2006) found that there were no significant differences in parent-child relationship quality between girls and boys, so these differences in time may not be leading to differences in actual relationship quality. Perry and Pauletti (2011) summarise that there are more obvious sex differences in peer relationships by adolescence than in family relationships.

Overall, there is still a great deal of disagreement on the extent of sex differences. Hyde (2005) in a meta-analysis of sex differences on psychological attributes, has suggested that in fact there may be more similarities between the sexes than differences. Hyde (2005) argues for a gender similarity hypothesis, and found that apart from a few well-documented cases such as differences in motor performance and physical aggression, that effect sizes of differences are quite small. However, Lippa (2006) argues against this and suggests a gender reality hypothesis which stipulates that there are differences between the sexes -- some are small, some are moderate and some are large. For example, large differences for interests and occupations have been found (Lippa, 1998, 2005, 2006). Therefore sex differences continue to be of interest to researchers.

Gender research historically viewed masculinity and femininity as two ends of a single dimension (Perry & Pauletti, 2011). However, Bem (1981) argued for two separate factors for masculinity and femininity. In current research, exploring sex differences alone is considered to be reductionist as gender development is now widely recognised as multi-dimensional (McHale, Shanahan, Updegraff, Crouter & Booth, 2004; Perry & Pauletti, 2011). In particular, gendered interests in activities and jobs, gender role attitudes and gendered personality traits have been proposed as important gender dimensions for children (McHale, Crouter, & Tucker, 1999). Moreover, high correlations have not been found among these domains, and therefore no one dimension can fully represent a person's masculinity or femininity (Perry & Pauletti, 2011). This thesis investigates links between gendered interests in activities and jobs, gender role attitudes and gendered personality traits, and also examines the unique influences that different gendered dimensions can provide for ability self-concepts.

Theoretical perspectives of gender development are evaluated in the following literature review as children's gender development is a key aspect of this thesis. Dimensions of children's gender are dependent variables in Paper 1 and independent variables in Paper 2. Five relevant theories have been chosen as follows: first, evolutionary theory with its roots in Darwinian ideology, and biological theories are explored. Second, Freud's (1905) psychoanalytic theory that first proposed parental influence on children's gender development is examined. Third, social learning theory, which is based around the work of Mischel (1966) and Bandura (1977) and has been a popular school of thought since the 1970's is reviewed. Fourth, a cognitive-development approach to gender development is explored that is based around Kohlberg's (1966) work. Finally, Bem's (1981) gender

schematic theory which draws upon both the social learning and cognitive development approaches is evaluated.

### **Evolutionary and Biological Theories**

Modern evolutionary theory was formulated in 1988 by the Human Behaviour and Evolution Society (HBES), and is based around the original ideas of Darwin (Gross, 1996). This theory is an expansion of socio-biological explanations of gender differences as it not only examines genes and behaviour, but applies these to the minds of men and women (Gross, 1996). Although most modern theorists recognise that gender development is not entirely based on biology, research suggests that it is still an important contributory factor. Evolutionary theory posits that gender development differences are due to the differing role of men and women in reproduction. In the animal kingdom, males need to be able to compete for mates and females need to be able to rear children. Therefore evolutionary theory suggests that the development of gender differences is based on these different requirements for men and women. For men, this means being stronger, more aggressive, and having a tendency to dominate. For women, this means an emphasis on nurturing and caring behaviour and responding to the right mate. Modern evolutionary theorists also recognise the importance of culture and family on gender development, but suggest these are only secondary forces that make some people more gendered than others, but do not undermine the basic biological instincts as they were adapted to make reproduction possible.

Linked to evolutionary theory, biological explanations have also been given support in two main areas. Firstly, cross-cultural studies suggest that some gender differences do not vary much between national groups. For example, Schmitt, Realo, Voracek, and Allik's (2008) research on personality traits shows that women score

consistently higher on the personality traits of neuroticism, extraversion, agreeableness, and conscientiousness across 55 nations. This provides evidence for an underlying biological trend to gendered behaviour which is not culturally specific. Secondly, the impact of sex hormones on gender-typing suggests a biological basis to a preference for same-sex peers and differing interests in play activities (Ruble et al., 2006). Animal experiments have shown that exposure to male sex hormones in mammals increases aggression in males and females (Beatty, 1992). This is also thought to be true in humans. Research by Money and Ehrhardt (1972) examined girls with congenital adrenal hyperplasia (CAH) who were exposed to high levels of male sex hormones. These girls showed increased preferences for stereotypically masculine toys and boys as playmates rather than girls. Berenbaum (1999) reports that these differences in preferences for toys and playmates for those with CAH continues later into childhood through the level of interest in traditionally male activities, suggesting that there is a continued role for hormones. Both of these areas of gender development are shown very early in children at around two and three which adds support to these areas having a biological component. Due to the constraints of this review other biological explanations such as the sociobiological approach are not discussed.

**Critique of evolutionary theory.** Overall, evolutionary and biological theories provide an explanation for gender differences in interest in activities and self-concept. However, due to the multitude of research on social influences on children's development beginning most famously with Freud (1905), evolutionary and biological theories are too simplistic in their focus on purely biological differences.

## **Psychoanalytic Theory**

Psychoanalytic theory is based around Sigmund Freud's (1905) theory of sexuality that proposes that when children discover that their genitals are different to those of the opposite sex, this triggers a set of processes unique to their gender. Boys believe that girls have been castrated as they are unworthy of having a penis, and become fearful that this will also happen to them (Freud, 1925). This occurs at around 5-6 years of age, around the same time as what Freud called the Oedipus complex is present. The Oedipus complex for boys is when the love boys feel for their mother becomes sexual in nature, resulting in competition with their father for their mother's affection. This leads to boys fearing that their fathers will castrate them. To resolve the Oedipus complex and avoid potential castration, boys repress their feelings for their mother and identify with their father. Freud suggested a similar process takes place for girls he later called the Electra complex. Freud proposed that girls want to take the place of their mothers and have a child with their fathers. As their wish for their father's child is not fulfilled, the Electra complex can only be resolved with time. Girls at this age believe they have already been castrated, and they develop penis envy and believe themselves to be inferior to boys (Freud, 1925). Freud states that only at puberty does femaleness and femininity become important. At puberty, boys' desires become reproductive in nature, and they begin to act in ways that will help them succeed. In contrast, girls' desires become repressed at puberty. This theory states that gender differences are inevitable and "anatomy is destiny" (Freud, 1923, p178). Children identify with the same-sex parent, which leads to gender-typing of appropriate behaviours and attitudes.

**Critique of psychoanalytic theory.** Most of Freud's (1905) theory was based around his work with adults and their *memories* of childhood, which are

known to be unreliable (Fagot, Rodgers, & Leinbach, 2000). In particular, Freud supported his theories with 12 in-depth cases and 133 minor cases even though he had seen many more patients (Fisher & Greenberg, 1977). He claimed that it was difficult to generalize the research based on his theories, but instead urged researchers to examine case studies. This has led to widespread criticism over the validity of his theory. In addition, Freud's patients were all affluent, educated, and Viennese, which would suggest his theories are only relevant to a select population. Freud himself warned readers about the generalisability of his 1925 work as it is "based on a handful of cases" (Freud, 1925, p258).

However, Freud drew attention to the important role parents can play in gender socialisation, which has become an important line of research as it has implications towards children's academic achievement and careers (Durik, Vida, & Eccles, 2006). Freud (1905) focused on the sexual motivation behind identifying with same-sex parents. Theorists such as Parsons (1955) expanded this theory to also include the social importance of identifying with those of the same sex, a key concept in social learning theory.

### **Social Learning Theory**

Early social learning theories were based around the work of Mischel and Liebert (1966) who focused on parents' influence on children through controlling behaviour. This early theory was developed into an incorporation of the rewards or punishments that children receive for acting in a way that is appropriate or inappropriate for their sex, and learning by observing members of the same sex and modelling their behaviour. The theory was based around parents showing differential treatment of boys and girls when rewarding behaviour. Bandura (1977) theorised that children are most likely to model themselves on those most similar to them,

which in most families is the same-sex parent. This is therefore influenced by gender-differentiated practices of socialization of a particular culture. This is true not only for gender development, but also norms and values of a given society for all aspects of life such as moral behaviour and traditions. This theory posits that gender-typing is not inevitable. It also sets the child as a passive recipient of the environment, which contrasts against cognitive development theory (Kohlberg, 1966) that views children as constructing their own version of societal rules. Social learning theory recognises the wider context of children's development which fits well with a family systems approach, and is an important development on psychoanalytic theory. More modern interpretations of social learning theory have moved away from focusing on just same-sex modelling and discuss the importance of observational learning and children viewing models of both sexes in order to establish what is gender-appropriate (Bussey & Bandura, 1999).

**Critique of social learning theory.** Previous research has shown mixed support for gender differences in parent-child interactions, therefore questioning same-sex reinforcement and modelling. Maccoby and Jacklin's (1974) review of over seventy studies of gender differences found few differences in how parents treat boys and girls. This was in areas as diverse as frequency of interaction with children, to reactions to gendered behaviour such as aggression. Critiques of Maccoby and Jacklin's (1974) review suggested that not enough emphasis was given to the actual quality of the studies that were compared (Block, 1983). However, Maccoby and Jacklin's (1974) findings were also supported by Lytton and Romney's (1991) meta-analysis which evaluated over 172 studies conducted in the 70's to 80's. However, differences were found for encouragement of gender-typed activities and interests and fathers were more involved in gender socialisation particularly with sons (Lytton



& Romney, 1991; Maccoby & Jacklin, 1974). Family researchers suggest that future research should explore within-family differences in parental treatment of girls and boys (as opposed to the between-family studies that were reviewed) as gender socialisation has not been fully explored (McHale et al., 2003).

### **Cognitive-Development Theory**

Cognitive theories of gender development first became widespread with the publication of Eleanor Maccoby's (1966) book, *The Development of Sex Differences*. Maccoby used Kohlberg's (1966) cognitive developmental theory to explain how gender differences are formed (Martin, 2000). This is based on children being an active agent in their environment, creating their own realities and structures in a process of cognitions. The theory posits that children are information processors who use stereotypes and heuristics to enhance their understanding of the world. These ideas were originally used in Piaget's work and were adapted by Kohlberg (Martin, 2000). Piaget focused on an individualistic approach, which looks at individuals as separate from each other and responsible for their own actions. Once children realise what gender they are at around two to three years old, they can seek to find out the ways they are meant to behave by observing others (Kohlberg, 1966). Therefore how children understand gender shapes their gender development. Kohlberg (1966) argued that it was not until later in development, when children understand gender constancy (the permanence of categorical sex), that their motivation to become gender-typed increases and children self-categorise by their gender. Self-categorisation by gender means that children value what is gender congruent more than what is not, and therefore they partake in gendered activities and act in a gender consistent way. However, more recent research has suggested that only an awareness of one's own gender is required for them to choose gendered toys and same-sex

playmates (Carter & Levy, 1988). Therefore gender constancy is not as essential for early gender development as Kohlberg theorised, but may help with more complex gender understanding later in development such as helping children respond to information on what is gender appropriate (Ruble & Martin, 1998).

**Critique of cognitive developmental theory.** Cognitive developmental theory does not state why gender is more important than other categories such as race, religion etc., and assumes that gender is particularly salient in our society (Bem, 1983). However, this assumption is culturally specific and for some cultures alternate categories, such as caste, may be far more important (Bem, 1983). Secondly, cognitive-development theory does not place as much importance on the context of learning about gender as social learning theory, which is in contrast to the multitude of research on the influences of family, peers, and schools on gender development (see McHale et al., 2003). Another criticism of cognitive-development theory is based around the construct of gender itself. As previously discussed, gender is now recognised as multidimensional (McHale, Crouter, & Tucker, 1999), and this is seen as a challenge to cognitive theories. Gender behaviours should all be consistent if they are based around cognitions, but this is not always found in individuals. However, Martin (2000) theorises that cognitions do influence behaviour, but that some cognitions are more powerful than others, and therefore the dimensions of gender are influenced by a wide ranging set of complex cognitions. Bandura (1986) took account of the omissions of both social learning theory and cognitive theories, and introduced cognitive social learning theory which placed more emphasis on a person's own involvement with their development but with more emphasis on context of learning such as through the family system.

## **Gender Schematic Theory**

Gender schematic theories became popular amongst researchers in the late 1970's and 1980's, and various different perspectives were taken to understand how individuals interpret their environments (Martin, 2000). Research by Bem (1981), Martin and Halverson (1981, 1987) and Markus, Crane, Bernstein, and Siladi (1982) explored schema theories, and there are only small distinctions between the perspectives. Bem's (1981) work has been the most influential of these perspectives, so the following discussion is based around her work. Sandra Bem's (1983) gender schema theory is a combination of cognitive-developmental and social learning theories. It states that children are active participants in organising information, but there is recognition that this information is derived from a particular culture and gender-typing is learned rather than inevitable:

“Children typically learn that gender is a sprawling associative network with ubiquitous functional importance through their observation of the many cultural correlates of sex existing in their society.” (Bem, 1983, p610).

Gender development starts by children learning maleness and femaleness definitions of anatomy, reproduction, labour divisions and personality attributes. Children learn to code the world around them according to a gender schema that is constantly evolving as they learn more about the world. A schema is a cognitive structure and a network of associations that guides perception (Bem, 1983), and schemas are formed around gender in particular as gender is functionally important in society. Children learn to apply certain dimensions of self such as 'strong/ weak' to only one sex, and thus build a self-concept based on gender. How well a person fits a schema starts to define self-worth, and there is an internalised motivation to conform to cultural definitions. Therefore gender-typed individuals are different

from those who are not gender-typed in that they base their self-concept and behaviour around gender.

**Critique of gender schematic theory.** Empirical research by Bem (1983) supporting gender schema theory has been heavily criticised (e.g., Morgan & Ayim, 1984) for a variety of reasons. Firstly, the sample size was small for both experiments (48 of each gender for each study), and they were all undergraduates who are not representative of the population in class or race. Secondly, gender was made salient to the participants as they filled out the Bem Sex Role Inventory (which asks participants to evaluate if they have gender-typed traits) before taking part in the questionnaires. Thirdly, the conclusions of the study regarding gender were not substantiated (Morgan & Ayim, 1984). However, gender schemas recognise the effect of the social network, unlike cognitive-development theory.

### **Conclusion on Gender Development Theories**

Theories of gender development are constantly evolving and new research is abundant in this area. However, each theory has its own strengths and weaknesses. Evolutionary and biological theories do not place enough importance on the social aspects of everyday life and the impact that the feminist movement has had on the differences between men and women. Psychoanalytic and cognitive theories do not place enough emphasis on the multiple family relationships in children's lives. In addition, there does not appear to be sufficient evidence for gender schematic theory. However, recent family research has found evidence for a social learning modelling perspective with maternal employment and division of household labour being important predictors of children's gender development (McHale et al., 2003). Therefore this thesis draws on social learning theory to a large extent because of the focus on the potential influences of parents on their children, and the links with the

systems approaches discussed above (ecological theory, family systems theory and spillover hypothesis).

### **Development of Ability Self-Concepts**

Due to established links between children's ability self-concepts with achievement, academic and career choices and overall self-esteem (see Wigfield et al., 2006 for a review), predictors of ability self-concepts (and not just academic achievement per se) are of importance to those investigating child development. This is particularly because sex differences in ability self-concepts (reviewed above) are consistently found in maths and science subjects, preventing some girls from pursuing careers in these areas which are potentially the best paid (Durik et al., 2006). Eccles and colleagues have pursued this line of research for over thirty years and their expectancy-value model of achievement related choices (Eccles-Parsons, et al., 1982; Eccles & Wigfield, 1995) incorporates correlates of ability self-concepts.

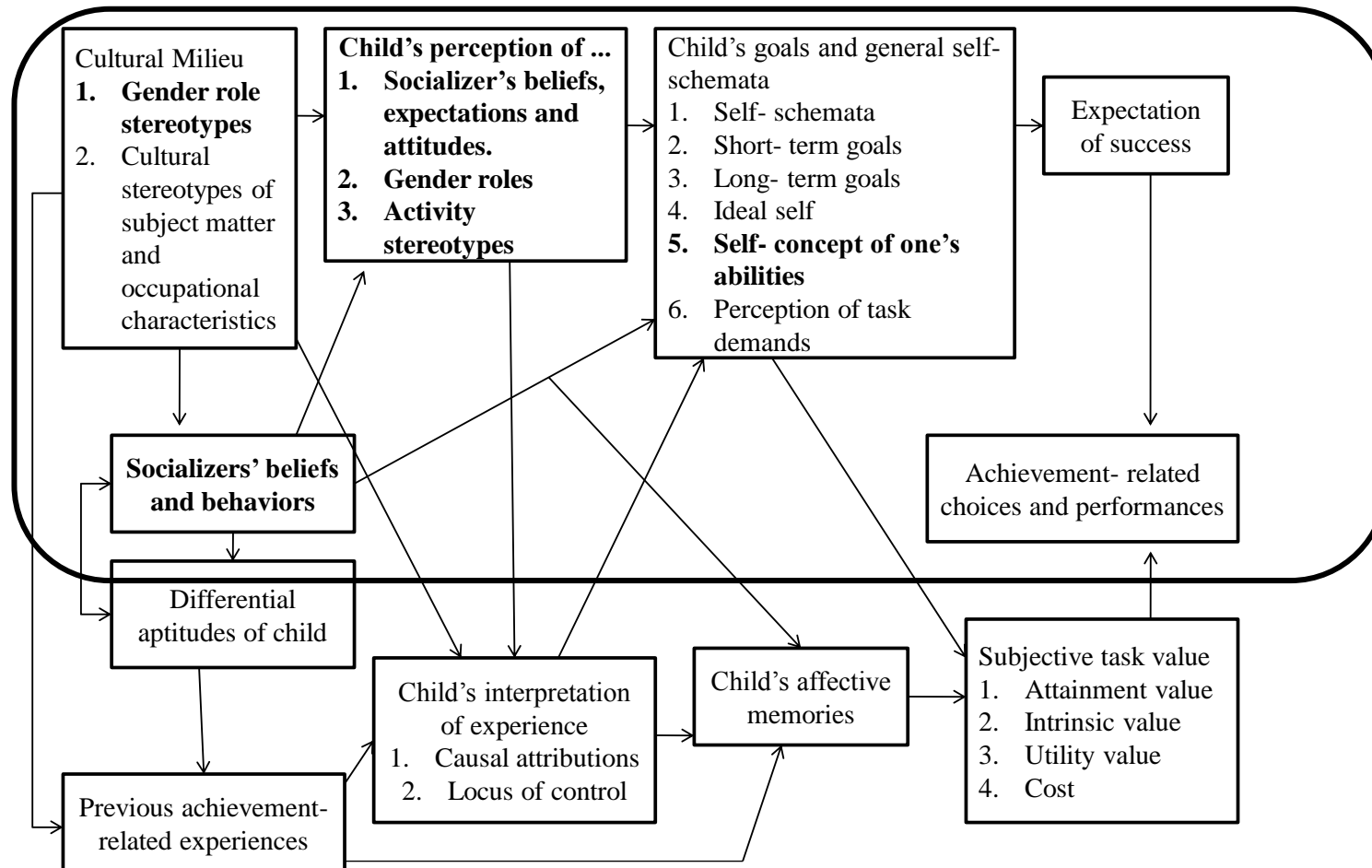
### **Expectancy-Value Model of Achievement Related Choices**

This model includes various correlates of achievement-related choices and performances. Cultural beliefs, socialisation agents and children's own qualities, attitudes and experiences are proposed to influence children's ability self-concepts which in turn influence achievement choices. Eccles and colleagues posit that children's perceptions of socialisers' beliefs, expectations and attitudes, alongside gender roles and activity stereotypes, are direct influences on ability self-concepts. Ability self-concepts in turn are thought to be directly related to expectations of success, subjective task values (incorporating attainment value, intrinsic value, utility value and cost). Finally, expectations of success and subjective task values are direct influences on achievement-related choices and performances. See Figure 1.1 for Eccles and colleagues' model of achievement-related choices. In this thesis two

portions of this larger model are examined: firstly, the influences of parents' attitudes and behaviours on ability self-concepts and secondly, the influences of gender roles and activity stereotypes (through gendered preferences) on ability self-concepts. The second line of investigation is also extended to include gendered personality traits that have been found to be an important dimension of children's gender (Ruble et al., 2006).

Figure 1.1

*Eccles and colleagues' expectancy-value model of achievement related choices*



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## **Current Thesis - Parents' Gendered Influences on Child Development in Middle Childhood and Early Adolescence**

### **Aims**

The overarching goal of the thesis was to examine the influence of parents' gendered attitudes and behaviours in three areas: children's gender development (Paper 1), ability self-concepts (Paper 2) and family relationships (Paper 3).

In addition, an aim of the thesis was to further research the associations among multiple dimensions of gender for both parents and children. Specifically, the links between division of household labour and gender-role attitudes were examined among the parents, and for children the links between gendered preferences for activities, gendered personality traits and gender-role attitudes were assessed (Paper 1). The final aim of the thesis was to examine the links between these multiple dimensions of child gender and ability self-concepts (Paper 2).

To this end, this thesis includes three papers that address these aforementioned aims. Below is a summary of the three studies.

### **Paper 1: Parental Influences on Gender Development across Middle Childhood and Early Adolescence**

This paper investigated the longitudinal links between parents' gendered attitudes and behaviours and children's gendered personality traits and preferences for activities and their gender role attitudes. This extends the previous work on sex differences by examining the multidimensional nature of gender for both parents and children. Results showed that both young adolescents' and adults' gender measures are multidimensional with only modest correlations between the different dimensions. Second, only modest stability in children's gendered preferences was shown from middle childhood to early adolescence. Third, of the child gender



measures, children's gender role attitudes demonstrated the most parental influence. Finally, of the parents' gender measures, fathers' gender role attitudes and division of household tasks were most predictive of child outcomes. These findings highlight the importance of examining the multidimensional nature of gender rather than sex differences, as there are a complex set of relationships between these dimensions that could not otherwise be explored.

## **Paper 2: Gendered Child and Parental Influences on Children's Ability Self-concepts**

This paper further explores the potential reach of influence of parents' gendered attitudes and behaviours by examining children's ability self-concepts. In addition, previous research has explored sex differences in children's ability self-concepts but not the different dimensions of gender. This paper brought together these two strands and found that the influence of parents' gendered attitudes and behaviours on children's ability self-conceptions was limited, suggesting that parents' general gendered attitudes and behaviours and their beliefs about male and female abilities are not highly related. Instead it seems that cultural stereotypes about male and female abilities may be more predictive of children's ability self-concepts. However, there were associations between child gender and ability self-concepts, with feminine preferences in middle childhood predicting lower maths self-concepts in early adolescence. In addition, higher masculine preferences and personality traits were predictive of higher sports self-concepts and higher feminine preferences were linked to higher English self-concepts and lower sports self-concepts. These findings highlight both the importance of examining the multi-dimensions of gender and also that the contribution of parents' gendered attitudes and behaviours does not apply to all child outcomes.

### **Paper 3: Parental Division of Household Labour and Sibling Relationship**

#### **Quality: Family Relationship Mediators**

Previous research examining antecedents to sibling relationship quality have explored factors such as parenting and temperament (Brody, 1998) however there has been no previous research on parents' gendered attitudes and behaviours. The present study also used a cross-informant approach to examine parent-child and marital relationships as potential mediators of links between parents' gendered attitudes and behaviours and sibling relationship quality. Results revealed a link between more egalitarian division of household labour and more positive sibling relationship quality. Furthermore, this association was mediated by maternal warmth (older siblings' report) and by paternal hostility (younger siblings' report). Marital satisfaction was not a significant mediator. This paper showed that the influence of parents' gendered attitudes and behaviours extended beyond simply children's own gendered attitudes and behaviours, but into their family relationships. The findings highlight the importance of taking a family systems perspective as demonstrated by the interdependence of family subsystems and that families with more egalitarian division of household labour support more positive family relationships.

**Chapter 2: Paper 1-Parental Influences on  
Gender Development across  
Middle Childhood and Early Adolescence**

### **Abstract**

The present study used a longitudinal, multi-informant approach to examine which specific elements of parents' gendered attitudes and behaviours were predictive of multiple dimensions of children's gender development. One hundred and six families with older ( $M = 7.4$  years of age at Time 1) and younger siblings ( $M = 5.2$  years of age at Time 1) were assessed at two time points four to five years apart. At Time 1, parents reported on division of household labour, their own gender-role attitudes, and children's gendered preferences. At Time 2, children reported on their gendered preferences, gender-role attitudes and gendered personality traits. Results showed that both young adolescents' and adults' gender measures are multidimensional with only modest correlations between the different dimensions. Second, only modest stability in children's gendered preferences was shown from middle childhood to early adolescence. Third, of the child gender measures, children's gender-role attitudes demonstrated the most parental influence. Finally, of the parents' gender measures, fathers' gender-role attitudes and division of household tasks were most predictive of child outcomes. These findings highlight the importance of examining multiple dimensions of both children's and parents' genders, as there are complex associations that are not explained by biological sex alone.

## **Parental Influences on Gender Development across Middle Childhood and Early Adolescence**

During middle childhood and early adolescence important changes in gender development take place, and evidence suggests that parents play a key role in gender socialisation (Martin & Ruble, 2010; McHale, Crouter & Whiteman, 2003; Perry & Pauletti, 2011; Ruble, Martin & Berenbaum, 2006; Serbin, Powlisha, Gulko, Martin & Lockheed, 1993). Social learning theories (e.g., Mischel, 1966) propose that children use the models available to learn and develop their identities. In childhood parents have been implicated as key socialisation agents that at least partially explain individual differences in knowledge and flexibility of gender stereotypes, gender-role attitudes, and gender-typed interests (e.g., McHale, Crouter & Tucker, 1999). Parents may influence their children's gender-role socialisation by adopting more or less traditional attitudes and roles, or by encouraging (or discouraging) their children to adopt gender stereotyped interests. In particular, observational learning is considered very important in socialization theories, with exposure to same-sex models leading to gender typed behaviours (Martin & Halverson, 1981). The present study examined which specific elements of parents' attitudes and behaviours were predictive of multiple dimensions of children's gender development. Due to the longitudinal and multi-dimensional data set, associations among the different aspects of children's and parents' gender were investigated, and prediction of children's gender development across time was also examined.

### **The Multi-dimensional Nature of Gender and its Stability**

Gender is a multi-dimensional construct (McHale, Shanahan, Updegraff, Crouter & Booth, 2004; Huston, 1985) consisting of interests, activities, personal

social attributes (such as personality traits), and attitudes. Reasons to examine multiple dimensions of gender are that correlations between measures are often low (e.g., Serbin, et al., 1993), and focusing on only one aspect of gender typing can present a limited account of the extent to which individual differences in gender typing are associated with variations in the home environment and measures of parents' and children's gender-related characteristics (Turner & Gervai, 1995).

Some theorists propose that gender differences in children's activities will lead to individual differences in personal characteristics, interests, and abilities that may have important implications for later in life (Huston, 1985). For example, a girl playing with a doll is linked to nurturing (Liss, 1983), and a boy playing a team sport like football is linked with social problem solving and negotiation skills (Beal, 1994). Differences have been found in interests in gendered activities and toy choice in children as young as eighteen months, and these differences continue through to adolescence (McHale, Kim, Whiteman & Crouter, 2004; McHale, Shanahan, et al., 2004). There is also evidence that sex differences in activities appear earlier and are more pervasive than sex differences in other areas such as personality (Huston, 1985); therefore, gendered preferences were explored in this study in early as well as middle childhood and early adolescence. Previous research has found mixed results regarding the stability of gendered preferences, with some studies suggesting that gendered preferences for activities intensify during early and middle childhood (Golombok, et al., 2008), and others showing that gendered preferences decline and children become more flexible (Welch-Ross & Schmidt, 1996). There is also debate about stability between middle childhood and adolescence. Some studies have found that girls are more flexible than boys throughout development, and that this flexibility in gender conformity continues to decline across adolescence (Galambos,

Berenbaum & McHale, 2009). However, the gender intensification hypothesis postulates that in early adolescence gender conformity becomes the norm again due to the onset of puberty and dating (Hill & Lynch, 1983). Therefore it was of interest to determine the degree of stability shown from middle childhood to early adolescence. However, the gender intensification hypothesis has received less support than stability theories to date (Ruble et al., 2006).

Personality traits have also been widely examined in gender research. Existing studies suggest that gender-typing of personality develops during middle childhood (McHale, Updegraff, Helms-Erikson & Crouter, 2001). There are gender differences in personality traits, with boys reporting more instrumental traits like independence and competitiveness, and girls reporting more expressive traits like gentleness and patience (Antill, Russell, Goodnow & Cotton, 1993). Links have been found between these constructs and adjustment outcomes in adolescence, with instrumental traits mediating the association between sex and internalising behaviour and expressive traits mediating the association between sex and externalising behaviour (Hoffman, Powlishta & White, 2004). In addition, instrumentality has been linked to competitiveness and expressivity has been associated with being caring and sympathetic (see Ruble et al., 2006 for a review). These differences appear around middle childhood (before this time children rate themselves based on socially desirable characteristics rather than gender-typical traits) and evidence suggests that children become more gender-typed from middle childhood into adolescence (Ruble & Martin, 1998).

Gender-role attitudes are children's beliefs about male and females' stereotypical roles and individual differences in gender-role attitudes are influenced by parents' own gender-role attitudes (McHale et al., 1999). Gender-role attitudes

have been linked with various outcomes including social perceptions, values and ability self-concepts (Ruble et al., 2006). Findings have also suggested that boys' attitudes are more traditional and rigid than are girls' throughout development (Ruble et al., 2006; Antill, Cotton, Russell & Goodnow, 1996) which is logical as traditional views support patriarchy, and children are aware of gendered differences in power from middle childhood (Ruble et al., 2006). During middle childhood research has shown that children become less gender stereotyped with age, and that even though their knowledge of stereotypes continues to increase, children also become more flexible about 'who can do what' (Ruble et. al. 2006). However, other research has found gender differences in changes in attitudes with boys becoming more traditional and girls becoming more egalitarian into adolescence (Galambos, Almeida & Peterson, 1990). Therefore it is important to explore multiple dimensions of boys' and girls' gender development over time.

It is also of interest to explore multiple dimensions of parents' gendered attitudes and behaviours, as although past research has found links between traditional gender-role attitudes and division of household labour (Turner and Gervai, 1995), disparities have also been reported. For example, Milkie, Bianchi, Mattingly & Robinson (2002) found that although most mothers and fathers held egalitarian ideals about sharing household responsibilities, in reality mothers still shouldered most household responsibilities. Therefore gender-role attitudes and division of household labour could have distinct influences on aspects of children's gender.

### **Parental Influences on Child Gender Development**

In the present study, an ecological perspective (Bronfenbrenner, 1979) examining how daily life affects development was taken, and two aspects of



parenting potentially relevant to children's gender development were assessed: household division of labour and gender-role attitudes. Although research has found limited differential parental influence on children's gender development (Lytton & Romney, 1991; Maccoby & Jacklin, 1974), McHale and colleagues (2003) suggest that the complexities of gender socialisation in the family have not been fully explored, and therefore previous research has underestimated the family's role in gender development. For example, Parke, Ornstein, Rieser & Zahn-Waxler (1994) state that research has focused on parents as interaction partners whereby a parent has a direct effect upon the child, whereas more recent research has examined indirect parenting effects with parents being opportunity providers and instructors. In middle childhood and early adolescence, children are reliant on parents to provide opportunities for activities, and therefore parents should influence children's gendered preferences for activities. In addition, McHale and Colleagues (2003) suggest that parents could be acting as instructors to teach children what is gender appropriate, and this could be influencing their gender-role attitudes as well as their gendered preferences and personality traits.

Previous research suggests that if parents follow traditional gender-roles in allocation of household tasks and childcare, children adopt more gender-typed attitudes and partake in more gender-stereotyped activities (McHale, Shanahan, et al., 2004; White & Brinkerhoff, 1981). In addition, Turner & Gervai (1995) found that 4-year-olds' gender knowledge was predicted by parental role behaviour, and children were less aware of stereotypes when their fathers engaged in more non-traditional household and childcare tasks. Serbin and colleagues (1993) found that children whose mothers modelled masculine childcare and household activities (such as washing the car and playing catch with the children) had less gender-typed

activity preferences, and that gender knowledge acquisition was delayed when fathers engaged in feminine domestic activities (such as doing laundry and infant care). In addition to this research, Weisner & Wilson-Mitchell (1990) compared 6-year-olds from different family backgrounds in regards to values and domestic arrangements. Children from families with a more egalitarian split of household labour were less gender stereotyped in their knowledge about occupations and objects, but not in their gendered preferences for activities. Further investigation of the differences between traditional and egalitarian household division of labour is needed as it may influence different dimensions of gender development in diverse ways.

In addition to division of household labour, there is evidence to suggest that parents' gender-role attitudes also influence children. The following studies examined the links between traditional family attitudes and children's gender identity: Firstly, Weinraub and colleagues (1984) found that fathers (but not mothers) with more traditional gender-role attitudes had children with more gendered stereotypes. Secondly, research has found that parents who identify as more egalitarian have children who display less gender-typed schemas and more flexible gender-roles (Turner & Gervai, 1995; Weisner, Garnier & Loucky, 1994). Turner & Gervai (1995) also found that when fathers were less traditional, this was linked to more feminine play in both boys and girls. Lastly, Booth & Amato (1994) in a study of parents and their adult offspring found that parents with less traditional gender-role attitudes tended to have children with less traditional gender-role attitudes.

## **Present Study and Hypotheses**

The present investigation brings together multiple aspects of parent and child gender into a single coherent study. A longitudinal, multi-informant, multi-dimensional approach was taken to examine associations among parents' gender-role attitudes and division of household labour and children's gender-typed preferences, gender-role attitudes, and gendered personality traits. Four hypotheses were tested:

### **Multidimensionality.**

1. a) During early adolescence (Time 2) aspects of masculinity and femininity (i.e., preferences and traits) will be moderately positively associated, and more traditional gender-role attitudes will be linked with stronger endorsement of gender-typed preferences and traits.
- b) Parents' gender-role attitudes will be moderately associated with division of household labour, and division of household tasks, child-care and decisions will all be positively associated.

### **Gender development over time.**

2. Children's gender-typed preferences in middle childhood will be predictive of gender-typed preferences in early adolescence (stability) as well as gender-typed personality traits and more traditional attitudes.

### **Parental influences on children's gender development.**

3. Children from more traditional families (where mothers shoulder more of the household labour) will have more gender-typed preferences (Time 1 and 2), gendered personality traits (Time 2), and adopt more traditional gender-role attitudes (Time 2) than children from more egalitarian families.

4. Parents who endorse more traditional (versus egalitarian) gender-role attitudes (Time 1) will have children who also adopt more traditional gender-role attitudes (Time 2), have more gendered personality traits (Time 2), and gendered preferences (Time 1 and 2).

## **Method**

### **Sample and Recruitment**

The sample was collected as part of a longitudinal study on family relationships (Pike, Coldwell & Dunn, 2006). At Time 1, 173 families from southern England were recruited by leaflets in schools and advertisements in local papers and single-parent groups. The majority of families were recruited via schools who were asked to send letters home to parents of children in Reception (aged 4-5 years) and Year One (aged 5-6) who also had an older brother or sister aged 8 or younger. The mean age of the younger child was 5 years 2 months ( $SD = 7.20$  months). The mean age of the older child was 7 years 4 months ( $SD = 10.05$  months). The average age difference between the siblings was 26 months ( $SD = 8.98$  months). The mean age of the mothers was 36 years 2 months ( $SD = 4.99$  years) and the mean age of the father was 40 years and 3 months ( $SD = 5.18$  years). There were 118 two-parent families and 55 single parent families. The older siblings were 52% male and the younger siblings were 49% male. The sample was almost exclusively white (93%), which reflects the demographics of the area. Families came from a mix of working class and middle class backgrounds and there was a wide range of educational attainment amongst the families

At Time 2, four-five years later 106 families participated (the majority of attrition was due to our inability to trace the families rather than their refusal to participate). Families were more likely to participate at Time 2 if both parents were

present in the children's home ( $t = 2.27, p < .05$ ), if fathers worked fulltime ( $t = 2.75, p < .05$ ) and mothers were older at the birth of their first child ( $t = 1.98, p < .05$ ).

There were 82 two-parent families and 24 single parent families. Only mothers and children took part at Time 2. The mean age of the younger child was 9 years 8 months ( $SD = 11.06$  months) and the mean age of the older child was 12 years ( $SD = 12.88$  months). The older children were 54% male and the younger children were 52% male. The mean age of the mothers was 41 years 3 months ( $SD = 4.95$  years) and the target children were 96% white.

### **Procedure**

Home visits to the families were conducted. At Time 1 both parents were given questionnaires. At Time 2 data was collected by means of questionnaires for both children. Parents signed a consent form after a researcher discussed the data collection process with the parents and children and there was an opportunity for them to ask questions. Guidelines for ethical standards by the British Psychological Society were followed throughout, and the study was approved by the Psychology ethics committee at the University of Sussex.

### **Measures**

#### **Time 1: Parent reports.**

*Children's gendered preferences.* Children's masculine and feminine preferences for activities were measured using the Pre-School Activities Inventory (Golombok & Rust, 1993) This is a 24-item scale consisting of three sections. Parents were asked seven questions examining how often in the last month each child had played with certain gendered toys such as a tool set; eleven questions examining if they engaged in various gendered activities such as 'playing at taking care of babies' and finally, six questions examining if they had shown gendered

characteristics such as ‘avoiding getting dirty’. Responses were measured on a five-point scale from 1 ‘never’ to 5 ‘very often’. An overall masculine and feminine subscale was calculated from these three sections. The Cronbach’s alphas for this measure ranged from .67 to .95 indicating satisfactory internal consistency. As both parents reported on the same information and these reports were substantially correlated ( $r = .67$  to  $.92$ ) the two reports were averaged.

***Division of household labour.*** Parents’ division of household labour was measured using the Who Does What questionnaire (Cowan & Cowan, 1990). This is a 43-item scale consisting of three sub-scales: family tasks (e.g., ‘planning and preparation of meals’), making decisions (e.g., ‘deciding about major expenses’) and general child-care (e.g., ‘dressing our child’). Parents were asked which of them performs these tasks on a nine-point scale from 1 ‘she does it all’, to 5 ‘we both do this about equally’, to 9 ‘he does it all’. Because only a small percentage of families had fathers doing more than mothers, indicated by a score over 5 (24%, 21% and 4% respectively for tasks, decisions and child-care), and an extremely small percentage of families scored over 6 (3%, 1% and 0% respectively for tasks, decisions and child-care), higher scores indicate a more egalitarian division of household labour rather than a higher level of work for fathers for all three subscales. As both parents reported on the same information and these reports were substantially correlated ( $r = .60$ -.78) the two reports were averaged. The Cronbach’s alphas for this measure ranged from .68 to .91 indicating satisfactory internal consistency. Only two-parent families reported on this scale.

***Gender-role attitudes.*** Parents’ gender-role attitudes were measured using the Male-Female Relations questionnaire (Spence, Helmreich & Sawin, 1980). This is a 30-item measure with two versions (one for men and one for women). The scale

consists of four sub-scales. Both parents received sub-scales on Social Interaction (e.g. 'I'd rather have a man as a boss at work than a woman') and Marital roles (e.g. 'I think my partner should take the leadership in making important decisions'). Fathers alone received Expressivity (e.g. 'I think I should be emotionally stronger and tougher than my partner'), and mothers alone received Male preference (e.g. 'I don't like a man who lets me dominate him'). Each item was measured on a five-point scale from 1 ('strongly agree') to 5 ('strongly disagree'). High scores on this scale indicate more egalitarian attitudes. For each parent the three subscales were averaged to create an overall gender-role attitude score as the subscales were moderately to substantially correlated ( $r = .32-.67$ ). The Cronbach's alpha for the mothers' measure was .91 and for the fathers' measure .93 indicating excellent internal consistency.

## **Time 2: Child reports.**

*Gendered preferences.* Gendered interest in activities and jobs were examined using a measure adapted from Katz's (1986) Sex-Role Flexibility Questionnaire, by replacing the existing items with ones that were age-appropriate for the children in this study. Participants were asked to indicate how much they would like to do 20 items of different jobs, toys and activities on a four point scale from 1 ('Not at all') to 4 ('A lot'). Half of the items were traditionally feminine (e.g. 'do ballet') and half of the items were traditionally masculine (e.g. 'play football'). These items were chosen from some of the items on the Sex Role Behaviour scale (SRBS, Orlofsky, 1981), and also some popular modern child activities. Most of the scales for gender measures have been developed in the 1970s and 1980s so introducing some new items was useful. For example, playing computer games and

doing martial arts are quite common activities for children today but would not have been in the 1970s or 1980s.

To construct the scales, a principal component analysis (direct oblimin rotation) was calculated for both boys and girls. This resulted in two readily interpretable factors with eigenvalues greater than 2. The mean of the child's score on these items was then calculated. The two factors were labelled feminine and masculine and are shown in Table 2.1. The masculine factor consisted of eight items and the feminine factor of five items. Seven of the items were excluded from the rest of the analysis (do cooking, be a doctor, be a secretary, be a nurse, play netball, play computer games and talk on the phone), because these did not load consistently above .3. Together the factors explained 31% of the total variance for both boys and girls. Table 2.1 shows the structure coefficients of the items and the Cronbach's alphas for the factors.

***Gender-role attitudes.*** The Children's Attitudes towards Women scale (Antill et al., 1996) was used to examine gender-role attitudes, and consisted of 19 items. Examples of items are 'It is silly for a woman to drive a truck and for a man to do laundry' and 'For many important jobs, it is better to choose men instead of women.' Children indicated how much they agreed with the statements on a four point scale from 'strongly disagree' to 'strongly agree'. High scores on these scales indicate more traditional attitudes. Cronbach's alphas were .81 and .91 for the younger and older siblings respectively.

***Gendered personality traits.*** The Antill trait questionnaire (Antill, et al., 1993) was used to measure children's gendered personality traits. The questionnaire consists of 12 items of which half described traditionally feminine expressive traits (e.g., 'gentle') and half described traditionally masculine instrumental traits (e.g.,



‘competitive’). The children were asked how often they behaved in the way the word described on a scale from 1 ‘Never’ to 5 ‘Most of the time or a lot’. Cronbach’s alphas for the younger sibling were .66 for the feminine scale and .54 for the masculine scale. Cronbach’s alphas for the older sibling were .79 for the feminine scale and .64 for the masculine scale.

Table 2.1

*Structure coefficients for gendered preferences at Time 2*

Subscale and item number	Girls’ structure coefficient	Boys’ structure coefficient
Masculine factor	$\alpha = .74$	$\alpha = .73$
1. Be a mechanic	.67	.55
4. Play drums	.44	.37
10. Play Football	.56	.48
13. Play rugby	.61	.67
14. Play cricket	.60	.70
17. Be carpenter	.64	.55
19. Fixing things	.66	.70
20. Martial arts like karate	.46	.52
Feminine factor	$\alpha = .47$	$\alpha = .48$
6. Play the flute	.55	.67
8. Do ballet	.42	.37
15. Go shopping	.32	.31
16. Be a teacher	.50	.67
18. Do reading	.67	.34

## Results

### Preliminary Analyses

All analyses that follow were carried out separately for older and younger siblings, and these are available from the first author. Patterns of correlations were markedly similar with far fewer significant differences emerging than would be expected by chance. Therefore data from older and younger siblings were combined using a double-entry procedure to streamline the results.

Multiple two-way ANOVAs were conducted to explore differences by family type (two-parent vs. single parent families) and sex of the child for the child gender measures (see Table 2.2). At Time 1, parents' reports of children's feminine preferences showed a main effect of sex, with girls scoring more highly than boys,  $F(3, 303) = 580.50, p < .001$ . Boys also scored more highly than girls on parent reports of children's masculine preferences,  $F(3, 303) = 292.86, p < .001$ . At Time 2 girls scored more highly on feminine preferences than boys,  $F(3, 208) = 70.64, p < .001$ . In addition, boys scored more highly on masculine preferences than girls,  $F(3, 208) = 26.64, p < .001$ . For gender-role attitudes, boys scored more highly than girls  $F(3, 202) = 10.45, p < .001$ , indicating that boys endorsed more traditional attitudes than girls. Girls reported more feminine personality traits than boys,  $F(3, 207) = 5.17, p < .05$ . Single parent families had children with more masculine personality traits ( $M = 3.70, SD = 0.65$ ) than two parent families ( $M = 3.48, SD = 0.61$ ),  $F(3, 207) = 5.27, p < .05$ . No other significant main effects or interactions were detected and therefore differences by family type were not explored in further analyses.

Finally, correlations between children's gender measures and age were carried out and a total of five out of 14 correlations were significant. At Time 1,

older girls were reported by parents to have less feminine preferences ( $r = -.18, p < .05$ ) than younger girls, and older boys were reported by parents to have less masculine preferences ( $r = -.21, p < .01$ ) than younger boys. At Time 2, older girls reported less feminine personality traits ( $r = -.25, p < .05$ ) and less traditional gender-role attitudes ( $r = -.33, p < .01$ ) than younger girls. In addition, older boys also reported less feminine personality traits ( $r = -.18, p < .05$ ) and less traditional gender-role attitudes ( $r = -.26, p < .01$ ) than younger boys.

Table 2.2

*Means and standard deviations of child measures*

	Girls	Boys
	<i>M (SD)</i>	<i>M (SD)</i>
<b>Time 1 Parent report</b>		
Masculine preferences	18.31 (5.79)	31.04 (6.76)
Feminine preferences	30.01 (5.78)	13.13 (5.71)
<b>Time 2 Child report</b>		
Gender-role attitudes <sup>a</sup>	1.77 (.37)	1.98 (.46)
Masculine personality traits	1.39 (.54)	2.45 (.60)
Masculine preferences	1.94 (.54)	2.45 (.60)
Feminine personality traits	3.79 (.58)	3.61 (.60)
Feminine preferences	2.36 (.55)	1.71 (.46)

<sup>a</sup> Higher scores on the gender-role attitude scale indicates more traditional attitudes.

**Multidimensionality**

To address hypothesis 1a (During early adolescence (Time 2) aspects of masculinity and femininity (i.e. preferences and traits) will be moderately positively associated, and more traditional gender-role attitudes will be linked with stronger

endorsement of gender-typed preferences and traits) Pearson correlations were calculated separately for boys and girls (see Table 2.3). Out of 10 correlations for each gender, three were significant for boys and two for girls. In support of hypothesis 1a, boys with more traditional gender-role attitudes had less feminine preferences, and girls with more traditional gender-role attitudes had more feminine personality traits. Girls and boys with more masculine personality traits had more masculine preferences, and girls and boys with more feminine personality traits had more feminine preferences. Thus, hypothesis 1a was partially supported as aspects of masculinity and femininity were associated as predicted and gender-role attitudes were associated with femininity in predicted ways. However, no associations between masculinity and gender-role attitudes were found.

Table 2.3

*Correlations between children's gendered preferences, personality traits and gender-role attitudes at Time 2*

	1	2	3	4
Child Reports				
1. Gender-role attitudes <sup>a</sup>				
2. Masculine personality traits	.11 (-.14)			
3. Masculine preferences	.02 (-.09)	.41** (.23*)		
4. Feminine personality traits	-.12 (.19*)	.00 (.02)	.15 (-.04)	
5. Feminine preferences	-.21* (.07)	-.14 (.02)	.15 (.04)	.28** (.27**)

*Note.* Girls results in brackets, *N* ranged from 97-113. <sup>a</sup> Higher scores on the gender-role attitude scale indicates more traditional attitudes. \*  $p < .05$  \*\*  $p < .01$ .

To investigate hypothesis 1b (parents' gender-role attitudes will be moderately positively associated with division of household labour, and division of

household tasks, child-care and decisions will all be positively associated) Pearson correlations were again calculated (see Table 2.4). Nine out of 10 correlations were significant, and modest to moderate associations between the dimensions were found. In support of hypothesis 1b, more traditional parents' gender-role attitudes were associated with more traditional division of household tasks and child-care. Mothers' and fathers' gender-role attitudes were positively associated and finally, more traditional division of household tasks was associated with more traditional division of child-care and decisions. Therefore, hypothesis 1b was also partially supported as every association was significant, except between fathers' gender-role attitudes and division of decisions. These findings demonstrate the importance of examining different dimensions of both child and parent gender.

Table 2.4

*Correlations between parents' gender-role attitudes and household task division at Time 1*

	1	2	3	4
1. Mothers' gender-role attitudes <sup>a</sup>				
2. Fathers' gender-role attitudes <sup>a</sup>	.50**			
3. Child-care division <sup>b</sup>	.28**	.28**		
4. Making decisions <sup>b</sup>	-.11*	-.02	.16*	
5. Household task division <sup>b</sup>	.27**	.22**	.32**	.35**

*Note.* *N* ranged from 137-170 for mother gender-role attitudes, and from 94-126 for fathers' gender-role attitudes and division of household labour measures because of the subsample of single mother families.

<sup>a</sup> Higher scores on the gender-role attitudes scale indicates more egalitarian attitudes.

<sup>b</sup> Division of household labour scales were measured from 1 'she does it all' to 9 'he does it all'. \*  $p < .05$  \*\*  $p < .01$

### **Children's Gender Development over Time**

To address hypothesis 2, (Children's gender-typed preferences in middle childhood will be predictive of gender-typed preferences in early adolescence (stability) as well as gender-typed personality traits and more traditional attitudes) Pearson correlations were calculated between children's gender measures at Times 1 and 2 separately for boys and girls (see Table 2.5). Out of 10 correlations for each gender, two were significant for boys and three for girls. In support of hypothesis 2, boys with more masculine preferences at Time 1 had more masculine preferences and more traditional gender-role attitudes at Time 2, and girls with more feminine preferences at Time 1 had more traditional gender-role attitudes, more feminine personality traits and less masculine preferences at Time 2. Therefore hypothesis 2 was partially supported as there were no significant associations between feminine preferences at Time 1 and 2.

Table 2.5

*Correlations between children's gender measures at Time 1 and Time 2*

Time 1 \ Time 2	Gender-role	Masculine	Masculine	Feminine	Feminine
	attitudes <sup>a</sup>	personality	preferences	personality	preferences
Child Reports					
Parent Reports		traits		traits	
Children's masculine preferences	.26** (.01)	.12(.13)	.20* (.09)	-.06(.07)	-.01 (.01)
Children's feminine preferences	.13 (.28**)	-.02(-.11)	-.01 (-.35**)	-.03(.18*)	.15 (.14)

*Note.* Girl's results are in brackets, *N* ranged from 89-110. <sup>a</sup> Higher scores on the gender-role attitude scale indicates more traditional attitudes.\*  $p < .05$  \*\*  $p < .01$ .

### **Parental Influences on Children's Gender Development**

As a preliminary step in examining hypotheses 3 and 4 at Time 1 (H3: Children from more traditional families (where mothers shoulder more of the household labour) will have more gender-typed preferences (Time 1 and 2) and gendered personality traits (Time 2) and adopt more traditional gender-role attitudes (Time 2) than children from more egalitarian families; H4: Parents who endorse more traditional (versus egalitarian) gender-role attitudes (Time 1) will have children who also adopt more traditional gender-role-attitudes (Time 2) and have more gendered personality traits (Time 2) and gendered preferences (Time 1 and 2)) Pearson correlations were calculated separately for boys and girls (see Table 6). Out of 35 correlations for each gender, seven were significant for girls and nine for boys. In regards to parents' gender-role attitudes, mothers who were more traditional in their gender-role attitudes had daughters with less masculine preferences (Time 1) and more feminine personality traits (Time 2), as well as sons with more masculine preferences (Time 2). More traditional fathers had daughters with more feminine preferences (Time 1) and sons with more masculine preferences and personality traits (both Time 2). Parents' gender-role attitudes at Time 1 were moderately associated with child gender-role attitudes at Time 2, with more traditional parents having more traditional children.

In regards to division of household labour, when fathers and mothers were doing a more equal share of household tasks, boys had more feminine preferences (Time 2) and less traditional gender-role attitudes and girls had more feminine preferences (Time 1). In addition, when mothers and fathers did a more equal share of child-care, boys also had more feminine preferences (Time 1). However, when mothers and fathers took more equal shares in decision-making, boys had more



traditional gender-role attitudes, which was unexpected. Finally, girls from families where the father was doing more of an equal share of the household tasks and childcare had less masculine personality traits, which was also unexpected.

A series of hierarchical regression analyses assessed the prediction of the children's gender measures (Time 1 and 2) from parents' division of household labour and gender-role attitudes at Time 1 (see Tables 2.7 and 2.8) to further investigate hypotheses 3 and 4. Each regression consisted of three steps. In the first step, child sex and age were entered to control for these main effects. In the second step, the five Time 1 parent measures (i.e., division of childcare, tasks and decisions, and mothers' and fathers' gender-role attitudes) were entered. Finally, in the third step, the interaction terms for child sex and the parenting measures were included to uncover any differences in prediction for boys and girls. This third step yielded non-significant findings for all but feminine personality traits; unless specifically mentioned, non-significance can be assumed for the third step.

Results for Time 1 gender preferences showed that for masculine preferences (parent report); only child sex and age were significant predictors. The parental measures accounted for an additional 1% of the variance (*ns*), and none of the interaction terms were significant. For feminine preferences (parent report), child sex was again a substantial predictor. The parental measures explained an additional 3% of the variance ( $p < .01$ ), and more traditional fathers' gender-role attitudes and more egalitarian division of household tasks provided significant unique prediction. Therefore both hypotheses 3 and 4 are partially supported for Time 1 gendered preferences as feminine preferences were predicted by both fathers' gender-role attitudes and division of household tasks. However, neither parents' gender-role attitudes nor division of household labour predicted masculine preferences.

Table 2.6

*Correlations between parental gender measures at Time 1 and children's gender measures at Times 1 & 2*

	Time 1 (parent reports)		Time 2 (child reports)				
	Children's masculine preferences	Children's feminine preferences	Children's gender-role attitudes <sup>a</sup>	Masculine personality traits	Masculine preferences	Feminine personality traits	Feminine preferences
Mothers' gender-role attitudes <sup>b</sup>	-.12 (.16*)	-.00 (-.13)	-.29**(-.14)	-.06 (-.13)	-.21* (-.06)	-.10 (.17*)	.10(.07)
Fathers' gender-role attitudes <sup>b</sup>	-.08 (-.08)	-.17 (-.22*)	-.33**(-.25*)	-.26* (-.20)	-.23* (.06)	-.02 (.01)	.03(-.04)
Child-care division <sup>c</sup>	-.07 (.12)	.25** (.06)	-.14(-.07)	-.12(-.28**)	.03 (-.00)	-.01(-.04)	.16 (-.04)
Making decisions <sup>c</sup>	-.16 (-.04)	-.02 (.05)	.21*(.19)	-.10(-.09)	.04 (.02)	.06(.08)	.15 (.02)
Household task division <sup>c</sup>	-.05 (.11)	.12 (.16*)	-.19*(-.05)	.02(-.27**)	.13 (-.08)	-.08(.18)	.35** (.11)

*Note.* Girl's results are in brackets, *N* ranged from 90-170. . <sup>a</sup> Higher scores on the children's gender-role attitude scale indicates more traditional attitudes. <sup>b</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes.

<sup>c</sup> Division of household labour scales were measured from 1 'she does it all' to 9 'he does it all'. \*  $p < .05$  \*\*  $p < .01$

Table 2.7- Summary of multiple regression analyses predicting children's preferences at Time 1 from parental gender measures at Time 1

Step		Masculine preferences				Feminine preferences			
		<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$
1	Child sex	.74	.55*	116.86**	.73**	.84	.71**	238.09**	-.84**
	Child age				-.17**				-.06
2	Mother's gender-role attitudes <sup>a</sup>	.75	.01	33.52**	-.02	.86	.03**	77.09**	-.04
	Father's gender-role attitudes <sup>a</sup>				-.06				-.12**
	Division of child-care <sup>b</sup>				.01				.03
	Making decisions <sup>b</sup>				.06				.05
	Division of household tasks <sup>b</sup>				-.01				.10*
3	Child sex* mother's gender-role attitudes	.77	.01	20.12**	-.09	.86	.00	44.59**	.05
	Child sex* father's gender-role attitudes				.06				.01
	Child sex* division of child-care				-.01				-.04
	Child sex* making decisions				-.05				.01
	Child sex* division of household tasks				-.05				.03

<sup>a</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes. <sup>b</sup> Division of household labour scales were measured from 1 'she does it all' to 9 'he does it all' \*  $p < .05$ , \*\*  $p < .01$ .

Results for the Time 2 gender measures largely confirmed the initial correlation findings. For children's gender-role attitudes child sex and age were moderate predictors. The parental measures explained an additional 14% of the variance ( $p < .01$ ), and more egalitarian fathers' gender-role attitudes, more egalitarian division of household tasks and more traditional division of decision making provided significant unique prediction for more egalitarian gender-role attitudes for children. For masculine personality traits, child sex provided modest significant prediction. Although the parental gender measures *in combination* did not provide significant additional prediction (7%, *ns*), more traditional fathers' gender-role attitudes did significantly predict higher masculine personality traits. For masculine preferences, child sex was the only significant predictor again explaining moderate variance. Parental measures accounted for an additional 4% of the variance (*ns*). For feminine personality traits, child age provided modest significant prediction. Parental measures accounted for an additional 4% of the variance (*ns*) however none of the parent gender measures were significant predictors. However, the interaction between mothers' gender-role attitudes and child sex was significant at step 3 accounting for an additional 8% of the variance (*ns*). An inspection of the initial correlations (Table 2.6) shows that contrary to expectation, mothers with more egalitarian attitudes at Time 1 had sons who endorsed less feminine personality traits at Time 2, and daughters who endorsed *more* feminine personality traits. Finally for feminine preferences, child sex was a modest predictor. Although the parental measures *in combination* did not account for significant additional variance (6%, *ns*), more egalitarian division of household tasks did significantly predict higher feminine preferences.

Table 2.8-Summary of multiple regression analyses predicting children's gender measures at Time 2 from parental gender measures at Time 1

Step		Gender-role attitudes <sup>a</sup>				Masculine personality traits				Masculine preferences			
		<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$
1	Child sex	.42	.18**	14.83**	.22**	.22	.05*	3.64*	.22**	.47	.22**	19.91**	.47**
	Child age				-.36**				-.05				-.02
2	Mother's gender-role attitudes <sup>b</sup>	.56	.14**	8.92**	-.02	.35	.07	2.60*	.07	.51	.03	6.56**	-.16
	Father's gender-role attitudes <sup>b</sup>				-.26**				-.22*				-.05
	Division of child-care <sup>c</sup>				.12				-.12				.03
	Making decisions <sup>c</sup>				.24**				-.05				-.01
	Division of household tasks <sup>c</sup>				-.24**				-.01				.09
3	Child sex* mother's gender-role attitudes	.57	.01	5.18**	-.03	.41	.05	2.13*	.07	.53	.03	4.23**	-.10
	Child sex* father's gender-role attitudes				-.06				-.09				-.10
	Child sex* division of child-care				.06				.07				.05
	Child sex* making decisions				.01				-.10				-.04
	Child sex* division of household tasks				-.04				.19				.11

<sup>a</sup> Higher scores on the children's gender-role attitude scale indicates more traditional attitudes. <sup>b</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes. <sup>c</sup> Division of household labour scales were measured from 1 'she does it all' to 9 'he does it all'. \*  $p < .05$ , \*\*  $p < .01$ .

Table 2.8 continued

Step		Feminine personality traits				Feminine preferences			
		<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$
1	Child sex	.25	.06*	4.62*	-.07	.50	.25**	23.27**	-.50**
	Child age				-.24**				.02
2	Mother's gender-role attitudes <sup>a</sup>	.29	.02	1.77	-.03	.56	.06	8.59**	.07
	Father's gender-role attitudes <sup>a</sup>				.01				-.05
	Division of child-care <sup>b</sup>				-.02				-.07
	Making decisions <sup>b</sup>				.03				.05
	Division of household tasks <sup>b</sup>				.15				.23*
3	Child sex* mother's gender-role attitudes	.37	.05	1.73	-.29**	.58	.02	5.31**	-.03
	Child sex* father's gender-role attitudes				.14				.06
	Child sex* division of child-care				.08				.08
	Child sex* making decisions				-.06				.08
	Child sex* division of household tasks				-.00				.02

<sup>a</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes. <sup>b</sup> Division of household labour scales were measured from 1 'she does it all' to 9 'he does it all' \*  $p < .05$ , \*\*  $p < .01$ .

In respect to hypotheses 3 and 4 with children's gender measures at Time 2, hypothesis 3 was partially supported as feminine preferences were predicted by more egalitarian household task division and more traditional children's gender-role attitudes were predicted by more traditional household task division, but division of household labour did not predict masculine preferences, masculine personality traits or feminine personality traits. Hypothesis 4 was also found to be partially supported as more traditional fathers' gender-role attitudes predicted more traditional children's gender-role attitudes and masculine personality traits, however parental gender-role attitudes did not predict gendered preferences.

### **Discussion**

In reference to the original four hypotheses there were four main findings: Firstly, both young adolescents' and adults' gender measures are multidimensional with only modest to moderate correlations between the different dimensions. Secondly, only modest to moderate stability in children's gendered preferences was shown from middle childhood to early adolescence. Thirdly, of the child gender measures, children's gender-role attitudes demonstrated the most parental influence. Finally, of the parents' gender measures, fathers' gender-role attitudes and division of household tasks were most predictive of child outcomes. The different patterns found for each dimension of gender highlights the importance of examining these elements separately, both for parents and children.

### **Multidimensionality and Gender Development over Time**

Gendered preferences and personality traits were linked in expected ways replicating the claim that the domain of gender is multi-dimensional (McHale, Shanahan, et al., 2004; Huston, 1985), and expands on it by providing data for both children at two different time points. Boys who were more traditional had more

masculine preferences and less feminine preferences, while girls who were more traditional had more feminine personality traits and more feminine preferences. However, although the vast majority of associations were in the expected direction, the associations were modest to moderate in magnitude, the highest correlation being  $r = .41$ . This confirms the importance of examining multiple dimensions of parents' gender as well as children's gender development. In addition, parents' gender-role attitudes and division of household labour seem to have differential influences on children's gender development, as well as being only moderately correlated. This supports previous research by Huston and Geis (1993), who found that sex role attitudes and gendered personality traits had different influences on marital roles, underlining the distinctions between gendered constructs.

The associations between boys' masculine preferences at Time 1 with masculine preferences and traditional gender-role attitudes at Time 2, and also girls' feminine preferences at Time 1 with feminine personality traits and traditional gender-role attitudes at Time 2, suggests that there may be modest *longitudinal* multi-dimensional stability of gender. It is also interesting to see that there was some stability for both older and younger siblings over the two time points. Even though all the associations were in the expected direction, only a minority were significant and the associations were modest to moderate in effect size. However, this is not surprising given that the 4-5 year gap between testing times is considerable for children of this age, and the children's gendered preferences were rated by parents at the first time point and the children themselves at the second time point.

### **Parental Influences on Children's Gender Development**

**Gender-role attitudes.** Father's gender-role attitudes were a more important influence than mothers' gender-role attitudes and predicted children's gender-role



attitudes, feminine preferences (Time 1), and masculine personality traits. The pattern of results suggesting a unique influence for fathers has also been found for parenting outcomes (e.g., Parke & Buriel, 2006). It is also of interest that fathers' traditional gender-role attitudes predicted more masculine personality traits for *both* girls and boys. The unexpected results for girls' masculine personality traits may be due to the connotations of the different personality traits. The masculine traits are positive for either sex as they include qualities such as 'independence' and 'being a leader', whereas the feminine traits are more submissive with qualities such as 'gentleness' and 'consideration'. This study suggests that there may be more parental concern over expression of feminine traits (for boys) rather than masculine traits (for girls) in traditional families.

**Division of household labour.** Household task division was the most important influence on children's gender development and was predictive of children's gender-role attitudes and feminine preferences at Time 1 and 2. However child-care division was not a predictor of any of the child gender measures. The relative importance of household tasks in comparison to child-care could be due to stark differences in maternal and paternal child-care when children are young, reflecting transient inequalities related to economics and maternity leave. Household task division may be a more accurate and telling long-term indicator of marital dynamics. Finally, more *egalitarian* division of decisions was predictive of more traditional gender-role attitudes, which was an unexpected finding. This could be demonstrating that in some households, fathers that are more engaged in family life are making more decisions (an egalitarian explanation), whereas other fathers may be exerting their role of patriarch by making more decisions (a traditional explanation). The lack of consistent results for division of decisions is probably

because the meaning of this sub-scale is ambiguous. This is shown in negligible correlations with the other parental measures (see Table 2.4).

**Children's gender-role attitudes.** Of the child gender measures, results for children's gender-role attitudes were most consistent. More traditional division of household tasks and more traditional paternal attitudes at Time 1 predicted more traditional child gender-role attitudes at Time 2. This intergenerational transmission of gender-role attitudes suggests that children are modelling the attitudes available to them, congruent with socialisation theories. These results were all in line with previous research on gender-role attitudes (Booth & Amato 1994; Turner & Gervai, 1995; Weinraub et al., 1984; Weisner, et al., 1994). Age was also a significant predictor of gender-role attitudes with older children having less traditional gender-role attitudes than younger children. This finding supports research by McHale and colleagues (2001) that found that through middle childhood, normative cognitive development leads to more flexible ideas about the traditional place of males and females in society. Overall our findings suggest that parents have more of an influence on children's values rather than their actual behaviour.

**Boys vs. girls.** An examination of gender differences in the results shows that only 1 out of 40 interactions between the parents' gender measures and child sex was significant. Therefore it appears that boys and girls are affected in a similar way by family gender socialisation despite large mean-level differences between boys and girls. This suggests that although there is some evidence that mothers and fathers may *parent* boys and girls differently the over-arching (traditional or egalitarian) nature of the family environment has the same effect on boys and girls.

### **Alternative Predictors of Gender Development**

Contrary to most past research, children's masculine preferences at Times 1 and 2 were not predicted by household division of responsibilities or gender-role attitudes at Time 1. However, our results do partially replicate findings by Weisner & Wilson-Mitchell (1990) in showing that gendered preferences were not related to division of household labour. Due to the lack of prediction for masculine preferences and the modest predictive qualities of parents' gendered attitudes and behaviours for gendered preferences and personality qualities overall, other possible predictors of gender development are proposed. One possible alternative influence on children's gender development could be hormonal, as previous research has shown that prenatal testosterone was related to children's play activities in preschool (Hines et al., 2002). A second alternative is that genetics could be influencing how sex-typed the children are. This theory has not yet been thoroughly investigated, but twin studies (Iervolino, Hines, Golombok, Rust & Plomin, 2005) have shown that sex typing in activities, characteristics and toys in the preschool years is influenced by both genetic and shared environment factors (for a review of biological explanations see Ruble et al., 2006).

Another explanation could be that encouragement by parents to partake in gendered activities and to hold gendered traits, rather than counter stereotypical activities and traits, is the key parental influence. This would further support research by Parke and colleagues (1994) about the parenting role being one of an opportunity provider. Additionally this would support research by Lytton and Romney (1991) that showed that mothers and fathers both treated girls and boys differently in encouragement of gender-typed activities. Furthermore, McHale and

colleagues (2001) found that mothers' own interest in gendered activities was predictive of girls' masculine preferences for activities.

In addition, other socializing agents such as peers, the media, siblings and the school environment have been found to influence children's gender development (Ruble et al., 2006). For example, boys who spend more time with male peers have more gendered preferences and personality traits and that self-presentational concerns influence boys gender typed behaviours (Banerjee & Lintern, 2000; McHale, Kim, Dotterer, Crouter & Booth, 2009). The media generally perpetuates gender stereotypes, which increases adolescents' gender-role attitudes (Blakemore, Berenbaum & Liben, 2009). Siblings have been found to promote gender typing and those with same-sex older siblings had more stereotyped gendered preferences than other children (Rust et al., 2000) and evidence suggests that siblings may be more important in socialization than parents (McHale et al., 2003). Finally, teachers have been found to teach girls and boys differently in the school environment and gendered roles are often perpetuated with women as teachers and men in more senior positions such as head teacher (Ruble et al., 2006).

### **Limitations**

Overall, to explore these results further, a larger and more diverse sample size is required, particularly in regards to ethnicity as the sample was mostly white. A larger sample size would also allow for more complex processes to be tested. In addition, because gendered preferences were the only child measures at both time points (and different informants were used), parental influences on change over time could not be assessed in this study. Therefore, it would also be interesting to assess developmental trajectories for additional aspects of child gender such as gendered

personality traits and gender-role attitudes, because different patterns of stability and influence may occur for the different dimensions of gender (Martin & Ruble, 2010).

### **Conclusions**

This research supports an ecological perspective and stresses the importance of considering family roles and activities in addition to family structure (McHale et al., 2003). Gender-role attitudes, gendered personality traits, gendered preferences and division of labour are distinct from each other. It is important to examine these multiple dimensions for both parents and children as different associations between these dimensions are evident. Overall it appears that parents have more of an influence on children's values rather than on their actual behaviour. This study is consistent with socialisation theories but gender development has a complex structure, and no single theory or aspect of the environment can predict this complexity with certainty.

**Chapter 3: Paper 2 - Gendered Child and  
Parental Influences on Children's Ability Self-  
concepts**

**Preliminary Study- A comparison between children's ability self-concepts and teachers perceptions of ability in maths, English and sports**

Children's ability self-concepts are very important during middle childhood and adolescence as they are associated with achievement related choices and performance (see Eccles & Wigfield, 1995; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). To establish the validity of children's reports of ability self-concepts, this preliminary study examined links between teachers' and children's perceptions of ability as teacher ratings have been closely linked to children's actual achievement (Jussim, Eccles & Madon, 1996; Marsh, 1989).

Eccles (1993) found that teacher ratings of children's performance are influenced by a variety of measures including child sex and past performance. Previous research (Jussim & Eccles, 1992; Eccles- Parsons, Kaczala. & Meece, 1982) has indicated that child self-concepts and teacher perceptions of child abilities only demonstrate small to moderate agreement. Apart from past performance, there are many other influences on perceptions that teachers and children do not have in common, such as parental beliefs and expectations (McHale, Crouter & Tucker, 1999). Therefore it was expected that there would be significant positive relationships between child self-concepts and teacher perceptions of their ability, but that these associations would be small to moderate in magnitude.

Children's ability self-concepts have also been found to be higher than teacher perceptions of children's ability (Montgomery, 1994). This is thought to be because children overestimate their abilities (see Wigfield, Eccles, Schiefele, Roeser & Davis- Kean, 2006 for a review), whereas teacher's ratings are more closely associated with actual performance (Jussim, et al., 1996; Marsh, 1989).

## **Hypotheses**

H1: Children's ability self-concepts will be modestly to moderately associated with teachers' perceptions of their ability.

H2: Children will rate their abilities in all three subjects more highly than their teachers will.

## **Method**

### **Sample and Recruitment**

The sample was collected as part of a longitudinal study on family relationships (Pike, et al., 2006). Participants were 106 families consisting of 82 two-parent families and 24 single parent families. Mothers and two children per family took part in the study. The mean age of the younger child was 9 years 8 months ( $SD = 11.06$  months) and the mean age of the older child was 12 years ( $SD = 12.88$  months). The older children were 54% male and the younger children were 52% male. The mean age of the mothers was 41 years 3 months ( $SD = 4.95$ ) and the target children were 96% white. In addition, 57.5% of children's teachers also took part.

### **Procedure**

Home visits to the families were conducted and data was collected by means of questionnaires for both children. During the home visit parents were asked for details of their children's teachers, and then a postal questionnaire was sent to each one. Parents signed a consent form after a researcher discussed the data collection process with the parents and children, and there was an opportunity for them to ask questions. Guidelines for ethical standards by the British Psychological Society were followed throughout both time points and the study was approved by the Psychology ethics committee at the University of Sussex.



## Measures

**Children's ability self-concepts.** Eccles and Wigfield's (1995) question 'If you were to list all the children in your class from best to worst in the following subjects where are you?' was used to examine children's self-concepts of ability in maths, English and sports. This was rated on a seven point scale from 1 'one of the worst' to 7 'the best'.

**Teachers' perceptions of children's academic ability.** Teachers were asked a question by Eccles, Davis- Kean, Malanchuck, Peck and Vida (1990) on their perception of the child's ability in maths, English and sports: 'Compared to other children, how much innate ability or talent does this child have in the following subjects?' This was rated on a seven point scale from 1 'Very little' to 7 'a lot'.

## Results

All analyses that follow were carried out separately for older and younger siblings. Patterns of correlations were markedly similar with far fewer significant differences emerging than would be expected by chance. Therefore data from older and younger siblings were combined using a double-entry procedure to streamline the results.

To investigate hypothesis 1 (H1: Children's ability self-concepts will be modest to moderately associated with teachers' perceptions of their ability), Pearson correlations were calculated (see Table 3.1). For all three subjects, children's self-concepts were significantly moderately associated with teachers' perceptions ( $r = .31- .47$ ). Therefore hypothesis 1 was fully supported.

Table 3.1

*Correlations between child and teacher's perceptions of ability*

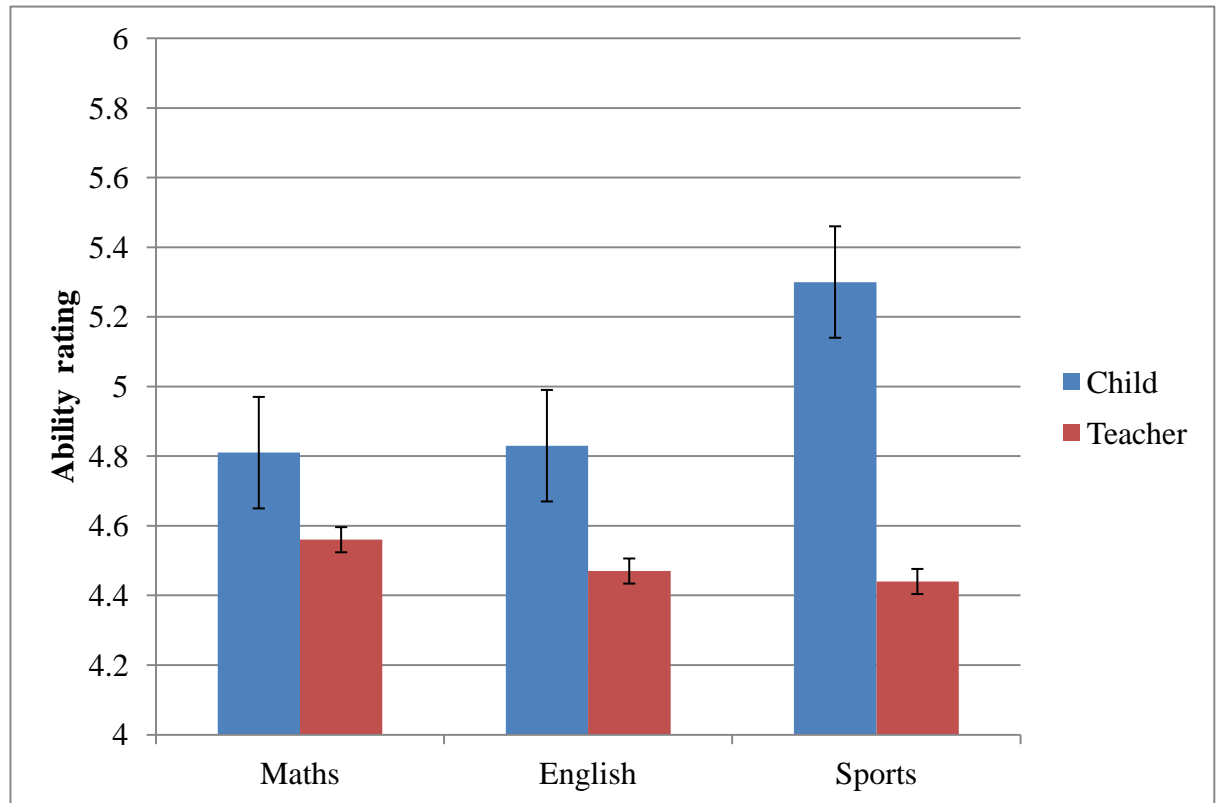
	1.	2.	3.	4.	5.
1. Child self- concepts maths					
2. Child self- concepts English	.12*				
3. Child self- concepts sports	.08	-.07			
4. Teacher perceptions maths	.47**	.28**	-.02		
5. Teacher perceptions English	.29**	.31**	-.07	.67**	
6. Teacher perceptions sports	.11	-.02	.35**	.27**	.24**

*Note.*  $N = 94-207$ . \*  $p < .05$  \*\*  $p < .01$

To examine hypothesis 2 (H2: Children will rate their abilities in all three subjects more highly than their teachers will), t-tests were calculated (see Figure 3.1). For English and sports children rated their abilities more highly than teachers,  $t(95) = -2.18$ ,  $p < .05$  and  $t(97) = -5.07$ ,  $p < .001$  respectively. Although children also rated their maths abilities more highly than teachers, this difference was not significant,  $t(98) = -1.62$ ,  $p > .05$ . Therefore hypothesis 2 was partially supported.

Figure 3.1

*Differences between child and teacher perceptions of children's ability in maths, English and sports*



### Discussion

In regard to the two hypotheses there were two main findings. Firstly, expected associations were found between children's ability self-concepts and teachers' perceptions in all three subjects. Teacher perceptions of ability are highly correlated to actual grades that children receive (Jussim, et al., 1996; Marsh, 1989); therefore associations between child and teacher reports indicate that child reports are a valid measure. However, it is important to note that child self-concepts are not a replication of teacher perceptions, and are important intrinsically because of their influence on actual performance (see Wigfield et al., 2006 and see main study).

Secondly, children rate their abilities significantly more highly than teachers for English and sports. This replicates past research showing that children overestimate their abilities at this age (Wigfield et al., 2006). The lack of a significant difference between raters in maths could be because regular assessment in maths has made children's ability self-concepts more accurate.

### **Conclusion**

This study indicates that children's ability self-concepts are a valid measure. This supports the decision to use only child reports in the main study due to the substantial amount of missing data for teachers.

### **Main Study Abstract**

Children's self-concepts of ability have a bi-directional relationship with achievement (Wigfield, Eccles, Shiefele, Roeser & Davis-Kean, 2006), and sex differences for self-concept of ability have been found with boys rating themselves higher in maths and sports than girls and girls rating themselves higher in English than boys (Eccles, Wigfield, Harold, & Blumenfeld, 1993). The present study used a longitudinal, multi-informant approach to examine which specific elements of parents' gendered attitudes and behaviours were predictive of children's ability self-concepts. In addition, associations between aspects of child gender and ability self-concepts were investigated. One hundred and six families with older ( $M = 7.4$  years at Time 1) and younger siblings ( $M = 5.2$  years at Time 1) were assessed at two time points four-five years apart. Home visits were conducted and parents and children completed questionnaire measures. At Time 1, parents reported on division of household labour, their own gender-role attitudes, and children's gendered preferences. At Time 2, children reported on their maths, English and sports abilities as well as gendered preferences, gender-role attitudes and gendered personality traits. Results showed that parents' gendered attitudes and behaviours did not predict children's ability self-concepts. However, children's feminine preferences predicted higher English self-concepts and lower sports and maths self-concepts, and masculine preferences and personality traits predicted higher sports self-concepts. These findings highlight the importance of examining multiple dimensions of gender, as there are complex associations with ability self-concepts.

## **Main Study- Gendered Child and Parental Influences on Children's Ability**

### **Self-concepts**

Research has shown that in middle childhood there are sex differences in subject preferences and self-concepts of academic ability, and participation in gendered subjects becomes increasingly differentiated over time (Wigfield, Eccles, Schiefele, Roeser & Davis-Kean, 2006). This leads to under representation of women in careers related to maths and science, and men in careers such as social work and teaching (Kaczala, 1981). Eccles and colleagues' (see Eccles & Wigfield, 1995; Wigfield et al., 2006) research suggests there will be associations between socialisers' beliefs and behaviours (in this case parents) and children's self-concepts of their abilities. In addition, Eccles and colleagues predict that children's perceptions of gender-roles and activity stereotypes will influence their self-concepts of ability (Wigfield et al., 2006). Beyond simple sex differences, McHale, Kim, Whiteman and Crouter (2004) showed that it is important to look at multiple dimensions of gender for both parents and children such as gender-role attitudes, division of household labour, personality traits and gendered preferences for activities and jobs. The current study brings together multidimensional aspects of parents' and children's gender and examines links with children's academic self-concepts in middle childhood and early adolescence. Previous research on ability self-concepts will now be reviewed, and possible associations with parent and child gender will be identified.

### **Ability self-concepts**

Ability self-concepts influence both children's expectation of success, and how they value a specific subject, which both lead to achievement related choices and performance (see Eccles & Wigfield, 1995; Wigfield et al., 2006). For example,

self-concept of ability in English has been linked to reading in children's spare time, high school course choices and career aspirations (Durik, Vida & Eccles, 2006), and children's participation in maths and science influenced both their expectations and values (including self-concepts of ability) and led to greater participation in maths and science at high school level (Simpkins, Davis-Kean & Eccles, 2006).

Additionally, a bi-directional relationship between self-concept and achievement has been found for children aged 7 and above (Guay, Marsh & Boivin, 2003) showing the key role that self-concepts play in children's academic lives. Finally, it is important to note that children's self-concepts are not necessarily accurate evaluations of their actual ability, but are distinct beliefs that children have about their current ability in a specific domain compared to other children. Self-concepts of ability also cover children's expectations of their future performance in that domain, as research has shown children aged 6-18 do not distinguish between ability and expectations of success (Wigfield et al., 2006).

### **Sex Differences in Self-concepts**

Research from Shavelson, Hubner and Stanton (1976) found that academic self-concepts are differentiated and that verbal academic self-concept is only modestly correlated with maths academic self-concept. Maths, English and sports are often examined in gender research as they characterise traditionally gendered abilities (Freedman-Doan, et al., 2000; Kaczala, 1981). Sex differences in perceptions of academic competence in different academic subjects have been investigated by Eccles and colleagues (Eccles, et al., 1993; Eccles, & Wigfield, 1995; Eccles-Parsons, Kaczala, & Meece, 1982). Results from this research have been consistent with gender stereotypes, and suggest that boys perceive themselves to have more ability in subjects like sports, maths and science. Girls in contrast

perceive themselves to have more ability in subjects like English, art and music. Other research has also found girls to have higher verbal self-concepts and lower math self-concept than boys (Kaczala, 1981; Marsh, Barnes, Cairns & Tidman, 1984; Marsh, Relich & Smith, 1983; Marsh, 1989). However, research on sex differences is by no means conclusive. For example, Simpkins and colleagues (2006) found no sex differences in maths and science self-concepts in 10<sup>th</sup> grade, and Stipek and Gralinski (1991) reported no gender differences in perceptions of English ability.

Only two sex differences have been found for actual rather than perceived abilities. These are in the specific abilities of three-dimensional mental rotation with men outperforming women, and speech production with women outperforming men (Linver, Davis-Kean & Eccles, 2002). In fact, research has recently found smaller differences between actual abilities in these subjects compared to in the past, and girls are actually performing better every year throughout school (e.g., Linver et al., 2002). Thus the differences in self-concept are made more interesting when considering they may not be reflecting the actual grades that children are obtaining. These sex differences in self-concepts are particularly significant as academic achievement is influenced by children's competence beliefs potentially placing girls at a disadvantage for maths and science (Fredericks & Eccles, 2002).

### **Children's Gender**

Gender is now widely accepted as multi-dimensional and research has established that gendered preferences for activities and jobs, gendered personality traits and gender-role attitudes are distinct constructs (McHale, Kim, et al., 2004; McHale, Shanahan, Updegraff, Crouter & Booth, 2004). Greenwald and colleagues (2002) theorised that when people identify with a gender, they are more likely to display attributes associated with that gender, so it would follow that children who



are highly gendered are more susceptible to gender stereotypes. For example, a girl for whom femininity is an important part of her identity would be more susceptible to the stereotype that girls are not good at maths. Therefore it is important to look past simple sex differences and examine how the multi-dimensions of gender link with ability self-concepts. Examining multiple dimensions of gender could help explain some of the mixed findings for sex differences in ability self-concepts. Steinmayr and Spinath (2009) showed that boys' ability self-concepts could not be explained fully by either biological sex or parents' beliefs about children's abilities, suggesting that examining biological sex alone is not enough. To the authors' knowledge, the associations between multiple dimensions of child gender and ability self-concepts have not been previously examined. However, related research has proposed that femininity, not just biological sex, is related to lower maths achievement expectations (Neuville & Croizet, 2007).

### **Parental Influences on Ability Self-concepts**

Due to the far-reaching importance of children's ability self-concepts it is of interest to investigate socialisation influences on these self-concepts. Research has shown that parents' beliefs were a more important predictor of children's ability self-concepts than children's past performance in that subject, or the child's biological sex (Eccles, 1993; Fredricks & Eccles, 2002; Frome & Eccles, 1998; Parsons, Adler & Kaczala, 1982). In addition, parents can influence their children's self-concepts by encouraging different activities and subjects, and Simpkins, Davis-Kean and Eccles (2005) found that mothers encouraged boys in maths and science activities more than girls.

A related research tradition has demonstrated that parents act as gender-role socialisers and contribute to children's gender development (McHale, Crouter &

Tucker, 1999; see McHale, Crouter and Whiteman, 2003 for a review on gender development; see paper 1 of this thesis) as well as gendered differences in children's self-concepts. For example, the way parents divide the amount of time spent with their children influences gender-typed patterns of academic achievement in adolescent girls (Updegraff, McHale & Crouter, 1996); when daughters spent more time with their fathers than their mothers they performed better at traditionally male subjects like science and math. Traditional (versus egalitarian) division of household labour has also been linked to girls' lower achievement levels (Galambos, Berenbaum & McHale, 2009). In addition, Jacobs and Eccles (1992) found that mothers' perceptions of their children's abilities were moderated by their general gender-role stereotypic beliefs about ability. Parents' perceptions about their children's abilities then go on to mediate the association between children's past performance in that area, and their self-concept of their ability, therefore children's self-concepts are also gendered. Fulcher (2011) showed that mothers' egalitarian gender-role attitudes about children's gendered behaviours predicted children's increased efficacy in non-traditional school topics, but not traditional school topics. Research has also shown that mothers overestimate boys' abilities and underestimate girls' abilities in maths, and overestimate girls' abilities and underestimate boys' abilities in English (Frome & Eccles, 1998). The present study extends previous work on parental influences on self-concepts by examining the impact of *both* parents' general gendered attitudes *and* behaviours on children's ability self-concepts in one study.

### **Present study**

Gender development in middle childhood is a well researched area but links with self-concept of ability have been neglected. Building on previous work on

gender development by McHale and colleagues, and work on children's self-concepts of ability by Eccles and colleagues, this is the first study (to the author's knowledge); to examine links between parents' and children's gendered attitudes, personality and behaviour with children's ability self-concepts. Middle childhood and early adolescence are targeted in the present study as this is a crucial time for the structure and development of self-concepts of ability (Eccles, et al., 1993).

### **Research Question**

Due to mixed findings from previous research, sex differences in children's self-concepts of ability were examined.

### **Hypotheses**

**Hypothesis 1.** Parents' traditional gendered attitudes and behaviours will predict lower self-concepts of ability for girls in maths and sports, and for boys in English.

**Hypothesis 2.** Children's masculine traits and preferences will predict higher self-concepts of ability in maths and sports, and feminine traits and preferences will predict higher self-concepts of English ability.

**Hypothesis 3.** More traditional gender-role attitudes of children will predict lower self-concepts of ability in maths and sports for girls and English for boys.

## **Method**

### **Sample and Recruitment**

The sample was collected as part of a longitudinal study on family relationships (Pike, Coldwell & Dunn, 2006). At Time 1, 173 families from southern England were recruited by leaflets in schools and advertisements in local papers and single-parent groups. The majority of families were recruited via schools who were asked to send letters home to parents of children in Reception (aged 4-5 years) and

Year One (aged 5-6) who also had an older brother or sister aged 8 or younger. The mean age of the younger child was 5 years 2 months ( $SD = 7.20$  months). The mean age of the older child was 7 years 4 months ( $SD = 10.05$  months). The average age difference between the siblings was 26 months ( $SD = 8.98$  months). The mean age of the mothers was 36 years 2 months ( $SD = 4.99$  years), and the mean age of the fathers was 40 years and 3 months ( $SD = 5.18$  years). There were 118 two-parent families and 55 single parent families. The older siblings were 52% male and the younger siblings were 49% male. The sample was almost exclusively white (93%), which reflects the demographics of the area. Families came from a mix of working class and middle class backgrounds and there was a wide range of educational attainment amongst the families.

At Time 2, four-five years later 106 families participated (the majority of attrition was due to our inability to trace the families rather than their refusal to participate). Families were more likely to participate at Time 2 if both parents were present in the children's home ( $t = 2.27, p < .05$ ), if fathers worked fulltime ( $t = 2.75, p < .05$ ) and mothers were older at the birth of their first child ( $t = 1.98, p < .05$ ). There were 82 two-parent families and 24 single parent families. Only mothers and children took part at Time 2. The mean age of the younger child was 9 years 8 months ( $SD = 11.06$  months) and the mean age of the older child was 12 years ( $SD = 12.88$  months). The older children were 54% male and the younger children were 52% male. The mean age of the mothers was 41 years 3 months ( $SD = 4.95$  years) and the target children were 96% white.

### **Procedure**

Home visits to the families were conducted. At Time 1 both parents were given questionnaires. At Time 2 data was collected by means of questionnaires for

both children. Parents signed a consent form after a researcher discussed the data collection process with the parents and children and there was an opportunity for them to ask questions. Guidelines for ethical standards by the British Psychological Society were followed, and the study was approved by the Psychology ethics committee at the University of Sussex.

## **Measures**

### **Time 1: Parent reports.**

***Children's gendered preferences.*** Children's masculine and feminine preferences for activities were measured using the Pre-School Activities Inventory (Golombok & Rust, 1993) This is a 24-item scale consisting of three sections. Parents were asked seven questions examining how often in the last month each child had played with certain gendered toys such as a tool set; eleven questions examining if they engaged in various gendered activities such as 'playing at taking care of babies' and finally, six questions examining if they had shown gendered characteristics such as 'avoiding getting dirty'. Responses were measured on a five-point scale from 1 'never' to 5 'very often'. An overall masculine and feminine subscale was calculated from these three sections. The Cronbach's alphas for this measure ranged from .67 to .95 indicating satisfactory internal consistency. As both parents reported on the same information and were substantially correlated ( $r = .67$  to  $.92$ ), the two reports were averaged.

***Division of household labour.*** Parents' division of household labour was measured using the Who Does What questionnaire (Cowan & Cowan, 1990). This is a 43-item scale consisting of three sub-scales: family tasks (e.g., 'planning and preparation of meals'), making decisions (e.g., 'deciding about major expenses') and general child-care (e.g., 'dressing our child'). Parents were asked which of them

performs these tasks on a nine-point scale from 1 'she does it all', to 5 'we both do this about equally', to 9 'he does it all'. Because only a small percentage of families had fathers doing more than mothers, indicated by a score over 5 (24%, 21% and 4% respectively for tasks, decisions and child-care), and an extremely small percentage of families scored over 6 (3%, 1% and 0% respectively for tasks, decisions and child-care), higher scores indicate a more egalitarian division of household labour rather than a higher level of work for fathers for all three subscales. As both parents reported on the same information and these reports were substantially correlated ( $r = .60-.78$ ) the two reports were averaged. The Cronbach's alphas for this measure ranged from .68 to .91 indicating satisfactory internal consistency. Only two-parent families reported on this scale.

***Gender-role attitudes.*** Parents' gender-role attitudes were measured using the Male-Female Relations questionnaire (Spence, Helmreich & Sawin, 1980). This is a 30-item measure with two versions (one for men and one for women). The scale consists of four sub-scales. Both parents received sub-scales on Social Interaction (e.g. 'I'd rather have a man as a boss at work than a woman') and Marital roles (e.g. 'I think my partner should take the leadership in making important decisions'). Fathers alone received Expressivity (e.g. 'I think I should be emotionally stronger and tougher than my partner'), and mothers alone received Male preference (e.g. 'I don't like a man who lets me dominate him'). Each item was measured on a five-point scale from 1 ('strongly agree') to 5 ('strongly disagree'). High scores on this scale indicate more egalitarian attitudes. For each parent the three subscales were averaged to create an overall gender-role attitude score as the subscales were moderately to substantially correlated ( $r = .32-.67$ ). The Cronbach's alpha for the

mothers' measure was .91 and for the fathers' measure .93 indicating excellent internal consistency.

## **Time 2: Child reports.**

***Gendered preferences.*** Gendered interest in activities and jobs were examined using a measure adapted from Katz's (1986) Sex-Role Flexibility Questionnaire, by replacing the existing items with ones that were age-appropriate for the children in this study (see paper 1 of this thesis for more details). Participants were asked to indicate how much they would like to do 20 items of different jobs, toys and activities on a four point scale from 1 'Not at all' to 4 'A lot'. Half of the items were traditionally feminine (e.g. 'do ballet') and half of the items were traditionally masculine (e.g. 'play football'). The mean of the child's score on these items was then calculated (as described in paper 1 of this thesis). Cronbach's alphas were between .47 and .48 for the feminine scale and .73 and .74 for the masculine scale.

***Gender-role attitudes.*** The Children's Attitudes towards Women scale (Antill, Cotton, Russell & Goodnow, 1996) was used to examine gender-role attitudes, and consisted of 19 items. Examples of items are 'It is silly for a woman to drive a truck and for a man to do laundry' and 'For many important jobs, it is better to choose men instead of women.' Children indicated how much they agreed with the statements on a four point scale from 'strongly disagree' to 'strongly agree'. High scores on this scale indicate more traditional attitudes. Cronbach's alphas were .81 and .91 for the younger and older siblings respectively.

***Gendered personality traits.*** The Antill Trait Questionnaire (Antill, Russell, Goodnow & Cotton, 1993) was used to measure children's gendered personality traits. The questionnaire consists of 12 items of which half describe traditionally

feminine expressive traits (e.g., ‘gentle’) and half describe traditionally masculine instrumental traits (e.g., ‘competitive’). The children were asked how often they behaved in the way the word described on a scale from 1 ‘Never’ to 5 ‘Most of the time or a lot’. Cronbach’s alphas for the younger sibling were .66 for the feminine scale and .54 for the masculine scale. Cronbach’s alphas for the older sibling were .79 for the feminine scale and .64 for the masculine scale.

***Children’s ability self-concepts.*** Eccles and Wigfield’s (1995) question ‘If you were to list all the children in your class from best to worst in the following subjects where are you?’ was used to examine children’s self-concepts of ability in maths, English and sports. This was rated on a seven point scale from 1 ‘one of the worst’ to 7 ‘the best’.

## **Results**

### **Preliminary Analysis**

All analyses that follow were carried out separately for older and younger siblings, and these are available from the first author. Patterns of correlations were markedly similar with far fewer significant differences emerging than would be expected by chance. Therefore data from older and younger siblings were combined using a double-entry procedure to streamline the results.

Multiple two-way ANOVAs were conducted to explore differences by family type (two-parent vs. single parent families) and sex of the child for the child gender and ability measures (see Table 3.2). At Time 1, parents’ reports of children’s feminine preferences showed a main effect of sex, with girls scoring more highly than boys,  $F(3, 303) = 580.50, p < .001$ . Boys also scored more highly than girls on parent reports of children’s masculine preferences,  $F(3, 303) = 292.86, p < .001$ . At Time 2 girls scored more highly on feminine preferences than boys,  $F(3, 208) =$



70.64,  $p < .001$ . In addition, boys reported more masculine preferences than girls,  $F(3, 208) = 26.64$ ,  $p < .001$ . For gender-role attitudes, boys scored more highly than girls,  $F(3, 202) = 10.45$ ,  $p < .001$ , indicating that boys endorsed more traditional attitudes than girls. Girls reported more feminine personality traits than boys,  $F(3, 207) = 5.17$ ,  $p < .05$ . Single parent families had children with more masculine personality traits ( $M = 3.70$ ,  $SD = 0.65$ ) than two parent families ( $M = 3.48$ ,  $SD = 0.61$ ),  $F(3, 207) = 5.27$ ,  $p < .05$ . No other significant main effects or interactions were detected and therefore differences by family type were not explored in further analyses.

Table 3.2

*Means and standard deviations of child measures*

	Girls	Boys
	<i>M (SD)</i>	<i>M (SD)</i>
Parent report Time 1		
Masculine preferences	18.31 (5.79)	31.04 (6.76)
Feminine preferences	30.01 (5.78)	13.13 (5.71)
Child report Time 2		
Masculine preferences	1.94 (.54)	2.45 (.60)
Feminine preferences	2.36 (.55)	1.71 (.46)
Gender-role attitudes <sup>a</sup>	1.77 (.37)	1.98 (.46)
Masculine personality traits	1.39 (.54)	2.45 (.60)
Feminine personality traits	3.79 (.58)	3.61 (.60)
Maths self-concepts	4.43 (1.40)	5.14 (1.82)
English self-concepts	5.04 (1.35)	4.83 (1.43)
Sports self-concepts	4.81(1.67)	5.33 (1.71)

<sup>a</sup> Higher scores on the gender-role attitude scale indicates more traditional attitudes.

Correlations between the children's measures and age were carried out separately for boys and girls, and a total of seven out of 20 correlations were significant. At Time 1, older girls were reported by parents to have less feminine preferences ( $r = -.18, p < .05$ ) than younger girls, and older boys were reported by parents to have less masculine preferences ( $r = -.21, p < .01$ ) than younger boys. At Time 2, older girls reported less feminine personality traits ( $r = -.25, p < .05$ ) and less traditional gender-role attitudes ( $r = -.33, p < .01$ ) than younger girls. In addition, older boys also reported less feminine personality traits ( $r = -.18, p < .05$ ) and less traditional gender-role attitudes ( $r = -.26, p < .01$ ) than younger boys. Finally, older boys reported lower self-concepts in sports ability ( $r = -.16, p < .05$ ) than younger boys.

### **Sex Differences in Ability Self-concepts**

To examine the research question concerning sex differences in the ability measures, t-tests were carried out (see Table 3.2). Results showed boys scored significantly more highly than girls on self-concepts of maths ability,  $t(181.09) = 3.12, p < .01$  and sports ability,  $t(205) = 2.17, p < .05$ . No significant difference was detected for English ( $t(204) = -1.07, p > .05$ ).

### **Correlations between Parental Gender Measures and Ability Measures**

As a preliminary step in addressing hypothesis 1 (H1: parents' traditional gendered attitudes and behaviours will predict lower self-concepts of ability for girls in maths and sports and for boys in English), Pearson correlations were calculated separately for boys and girls (see Table 3.3). Out of 15 correlations for each gender, there were three significant associations for girls and two for boys. Mothers with more traditional gender-role attitudes had girls with higher self-concepts of sports ability, which was unexpected, and fathers reporting more traditional gender-roles

had boys with higher self-concepts of sports ability. In addition, more traditional division of child-care (with the mother doing more) was significantly associated with higher maths self-concepts for boys. More traditional division of decision making was significantly associated with lower sports self-concepts for girls. Finally, more traditional division of household tasks was significantly associated with higher self-concepts of English ability for girls.

Table 3.3

*Correlations between parents' gender measures and children's ability self-concepts*

	Maths self- concepts	English self- concepts	Sports self- concepts
Mothers' gender-role attitudes <sup>a</sup>	.06 (.06)	.03 (-.03)	-.09 (-.19*)
Fathers' gender-role attitudes <sup>a</sup>	-.12 (.02)	.07 (-.10)	-.20* (-.18)
Child-care division <sup>b</sup>	-.18* (-.06)	-.02 (-.14)	-.15 (-.10)
Making decisions <sup>b</sup>	.13 (-.03)	-.07 (-.08)	.12 (.23*)
Household task division <sup>b</sup>	.06 (-.18)	-.15 (-.24*)	-.03 (.04)

*Note.* Girls' results in brackets, *N* ranged from 60-105. <sup>a</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes.

<sup>b</sup> Division of household responsibilities scales were measured from 1 'she does it all' to 9 'he does it all'. \* $p < .05$  \*\* $p < .01$ .

### **Parental Gender Predictors of Ability Self-Concepts**

A series of hierarchical regression analyses assessed the prediction of the children's self-concepts of academic ability by parents' division of household responsibilities and gender-role attitudes at Time 1 (see Table 3.4) to further investigate hypothesis 1. Each regression consisted of three steps. In the first step, child sex and age were entered to account for main effects. In the second step, the five parental gender predictors (i.e., division of childcare, tasks and decisions and mothers' and fathers' gender-role attitudes) were added. Finally, in the third step, the interaction terms for child sex and the parenting measures were included to test for differential prediction by sex. This third step yielded non-significant findings for all of the parent gender measures, indicating lack of differential prediction for boys and girls.

For maths self-concepts, sex was a moderate predictor and parental measures accounted for an additional 4% of the variance (*ns*). For English, neither child sex nor age were significant predictors. Although more traditional division of household tasks was a significant predictor of higher English self-concept, the parental measures *in combination* did not provide significant additional prediction (4% *ns*). For sports self-concepts, child sex and age were significant predictors accounting for moderate variance, and parental measures accounted for an additional 7% of the variance (*ns*). Therefore, hypothesis 1 was not supported as parental gendered attitudes and behaviours were not significant predictors of adolescent's self-concepts of ability, once the effects of age and sex had been accounted for.

### **Correlations between Children's Gender Measures and Ability Self-Concepts**

As a preliminary step in addressing hypotheses 2 and 3 (H2: masculine traits and preferences will predict higher self-concepts of ability in maths and sports, and

feminine traits and preferences will predict higher self-concepts of English ability; H3: more traditional gender-role attitudes for children will predict lower self-concepts of ability in maths and sports for girls and English for boys), Pearson's correlations were calculated separately for boys and girls (see Table 3.5). Out of 21 correlations for each gender, eight were significant for both boys and girls. For hypothesis 2 there was partial support as higher scores on masculine preferences (Time 2) and masculine personality traits were associated with higher self-concepts in maths and sports. Additionally, higher scores on feminine preferences (Time 1) and feminine personality traits were associated with lower self-concepts in maths and higher self-concepts in English. However, three significant correlations were unexpected. Higher scores on masculine preferences (Time 1) were associated with lower maths self-concepts; higher scores on feminine preferences (Time 2) was associated with higher self-concepts in maths ability, and finally, higher scores on masculine personality traits were associated with higher self-concepts in English ability. For hypothesis 3, there was also partial support as more traditional gender-role attitudes were associated with lower self-concepts in maths ability for girls, and higher self-concepts in sports ability for boys.

Table 3.4 *Summary of multiple regression analyses predicting children's ability self-concepts from parental gender measures*

		Maths self-concept				English Self-Concept				Sports self-concept			
Step		<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$
1	Child sex	.28	.08**	5.62**	.28**	.07	.01	.36	-.06	.27	.07**	5.39**	.22**
	Child age				.01				.05				-.16*
2	Mother's gender-role attitudes <sup>a</sup>	.34	.04	2.41*	.13	.21	.04	.83	.01	.38	.07	3.12**	-.06
	Father's gender-role attitudes <sup>a</sup>				-.05				.01				-.12
	Division of child-care <sup>b</sup>				-.18				.04				-.08
	Making decisions <sup>b</sup>				.12				.08				.18
	Division of household tasks <sup>b</sup>				-.03				-.23*				-.02
3	Child sex * mother's gender-role attitudes	.38	.03	1.76	-.11	.24	.01	.66	.06	.41	.02	2.05*	.11
	Child sex * father's gender-role attitudes				-.01				.01				-.01
	Child sex * division of child-care				-.04				.09				.06
	Child sex * making decisions				.02				.03				-.02
	Child sex * division of household tasks				.16				.04				-.10

<sup>a</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes. <sup>b</sup> Division of household responsibilities scales were measured from 1 'she does it all' to 9 'he does it all'. \* $p < .05$ , \*\* $p < .01$ .

Table 3.5

*Correlations between children's gender measures (Time 1 and 2) and academic ability self concepts*

	Maths self- concepts	English self concepts	Sports self- concepts
Parent reports Time 1			
Children's masculine preferences	-.20* (.07)	.03 (.11)	.21* (.07)
Children's feminine preferences	.12 (-.26**)	.02 (.11)	.13 (-.04)
Child reports Time 2			
Masculine preferences	.16* (.19*)	.02 (-.09)	.44** (.15)
Feminine preferences	.15 (.19*)	.10 (.27**)	-.01 (-.19*)
Child gender-role attitudes <sup>a</sup>	-.14 (-.20*)	-.06 (-.07)	.23** (.00)
Masculine personality traits	.11 (.19*)	.18* (.15)	.30** (.45**)
Feminine personality traits	.15 (-.03)	.23** (.15)	.07 (.10)

*Note.* Girls' results in brackets, *N* ranged from 95-110. <sup>a</sup> Higher scores on the children's gender-role attitude scale indicates more traditional attitudes \**p* < .05 \*\**p* < .01.

### **Child Gender Predictors of Ability Self-Concepts**

A series of hierarchical regression analyses were also calculated for child gender predictors of children's self-concepts of ability (see Table 3.6) to further examine hypotheses 2 and 3. As before, in the first step child sex and age were entered to account for main effects. In the second step, the two Time 1 gendered preferences and the five Time 2 children's gender measures (masculine and feminine

preferences, gender-role attitudes, masculine personality traits and feminine personality traits) were entered. Finally, in the third step, the interaction terms for child sex and the children's gender measures were included to examine differential prediction by sex.

The results largely confirmed the initial correlation findings. For maths self-concepts, sex was a moderate significant predictor. Child gender measures accounted for an additional 10% of the variance ( $p < .01$ ) and higher feminine preferences (Time 2) and more egalitarian gender-role attitudes were both significant predictors of higher maths self-concepts. In addition, the interaction between child sex and feminine preferences (Time 1) was significant at step 3. An inspection of the initial correlations (Table 3.5) showed that *girls* with more feminine preferences (Time 1) rated themselves lower in maths ability and *boys* with more feminine preferences (Time 1) rated themselves higher in maths ability. For English self-concepts, neither child sex nor age were significant predictors. Child gender measures accounted for an additional 9% of the variance ( $p < .05$ ), and higher feminine preferences (Time 2) and higher masculine personality traits were significant predictors of higher English self-concepts. No other main effects or interactions were significant. For sports self-concepts, child sex was a modest significant predictor. Child gender measures accounted for an additional 21% of the variance ( $p < .01$ ) and higher masculine preferences (Time 2) and personality traits and lower feminine preferences (Time 2) were significant predictors of higher sports self-concepts. In addition, the interaction term for sex and masculine personality traits was significant at step 3. From an examination of Table 3.4, the association between higher masculine personality traits and higher self-concepts for sports ability was present for both boys and girls; however this association was stronger for girls.



In sum, hypothesis 2 was partially supported as higher feminine preferences (Time 2) predicted higher self-concepts in English and lower self-concepts in sports. In addition, higher feminine preferences (Time 1) predicted lower maths self-concepts for girls. Finally, higher masculine preferences (Time 2) and masculine personality traits predicted higher sports self-concepts. Hypothesis 3 was also partially supported as more traditional gender-role attitudes predicted lower self-concepts in maths ability, but there was no differential prediction of boys and girls. However there were two unexpected results, the association between higher feminine preferences (Time 2) and higher maths self-concept, and also higher masculine personality traits were associated with higher English self-concepts.

Table 3.6

*Summary of multiple regression analyses predicting children's self-concepts of academic ability from children's gender measures*

Step		Maths self-concepts				English self-concepts				Sports self concepts			
		<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$	<i>R</i>	$\Delta R^2$	<i>F</i>	$\beta$
1	Child sex	.26	.07**	6.83**	.26**	.03	.00	.10	-.03	.21	.04*	4.18*	.16*
	Child age				.05				.01				-.14
2	Masculine preferences Time 1	.42	.10**	4.11**	-.14	.30	.09*	1.93	.04	.51	.21**	6.65**	.09
	Feminine preferences Time 1				-.13				.05				.18
	Masculine preferences Time 2				.13				-.15				.26**
	Feminine preferences Time 2				.19*				.18*				-.18*
	Gender-role attitudes <sup>a</sup>				-.15*				-.03				.08
	Masculine personality traits				.13				.24**				.27**
	Feminine personality traits				.02				.11				.05
3	Child sex* masculine preferences Time 1	.47	.05	3.00**	-.12	.32	.01	1.18	-.04	.54	.04	4.35**	.02

	92		
Child sex* feminine preferences Time 1	.15*	-.00	.04
Child sex* masculine preferences Time 2	.07	.04	.12
Child sex* feminine preferences Time 2	-.10	-.06	.07
Child sex* gender-role attitudes	.06	.03	.05
Child sex* masculine personality traits	-.06	.02	-.16*
Child sex* feminine personality traits	.05	.07	-.02

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<sup>a</sup> Higher scores on the children's gender-role attitude scale indicates more traditional attitudes. \*  $p < .05$ , \*\*  $p < .01$ .

## **Discussion**

In regards to the research question and three hypotheses there were four main findings. Firstly, significant sex differences were found for maths and sports self-concepts but not English. Secondly, parents' gendered attitudes and behaviours did not predict children's ability self-concepts. Thirdly, dimensions of children's gender predicted ability self-concepts; feminine preferences predicted higher English self-concepts and lower sports and maths self-concepts, and masculine preferences and personality traits predicted higher sports self-concepts. Finally, more traditional children's gender-role attitudes predicted lower maths self-concepts.

### **Parental Influence on Ability Self-concepts**

Results showed that neither gender-role attitudes nor division of household labour predicted children's self-concepts. Although the lack of prediction from parental attitudes and behaviour was unexpected, it was not unprecedented. Fulcher (2011) found that parents' division of labour did not predict child efficacy in traditional or non-traditional skills. An interpretation of these findings could be that parents simply do not influence their children's ability self-concepts. Alternative explanations are also possible, however, and other aspects of parenting may also be important for ability self-concepts such as opportunities that parents can provide children in terms of resources, activities and help with homework in different areas, and also parental differential treatment of boys versus girls.

Previous research has linked parents' gender stereotypes of male and female abilities to their perceptions of their own children's abilities, and from parents' perceptions of children's abilities to children's own self-concepts (e.g., Jacobs & Eccles, 1992). However, because parents' gendered role attitudes and division of labour were not significant predictors of children's self-concepts, it appears that

these general gendered attitudes and behaviours are not translating to parents' stereotypes of male and female abilities or their perceptions of their own children's abilities. Instead, cultural stereotypes may be influencing parents' stereotypes about male and female abilities more than their own gendered attitudes and behaviours. Future research building on work by Jacobs and Eccles (1992) could examine how parents' gender-role attitudes and division of labour are associated with parents' stereotyped beliefs about male and female abilities in order to reconcile these seemingly incompatible sets of results.

### **Children's gender measures and ability self-concepts**

The sex differences found for maths and sports self-concepts of ability supports much of the previous research (e.g., Eccles & Wigfield, 1995). The lack of significant results for English also supports previous research (e.g., Stipek & Gralinski, 1991), suggesting that English may no longer be a gendered subject. The expected association between girls' higher feminine preferences (Time 1) and lower maths self-concepts of ability at Time 2 demonstrate the long lasting impact of children's gender on ability self-concepts. Results at Time 2 showed that higher feminine preferences predict higher English self-concepts and lower sports self-concepts, and that higher masculine preferences and personality traits predict sports self-concepts. These findings demonstrate the importance of multiple dimensions of children's gender for ability self-concepts, and that it is not just biological sex that is important for differences in ability self-concepts. This supports work by McHale and colleagues (e.g., McHale, Kim, et al., 2004; McHale, Shanahan, et al., 2004) on the multidimensional nature of gender, and shows that the multiple aspects of gender have significant implications for children's beliefs that can have far-reaching effects.

These findings demonstrate that masculine and feminine preferences are linked to important achievement-related outcomes for young adolescents. Therefore, whether children are more masculine or feminine could be linked to their self-concepts in masculine and feminine subjects in children's developing identities. Thus, children could be creating their own self-fulfilling prophecies about their own abilities. This would support similar work by Greenwald and colleagues (2002) who suggest that the extent that children identify with a gender will influence whether or not they behave in a gender typed way. In addition, teachers' and parents' expectations for children may also be influenced by how masculine or feminine the children are, as this could decrease or increase the likelihood of stereotype activation. For example, if a girl was extremely feminine in her preferences and personality, this may increase the likelihood of negative stereotype activation in parents and teachers for masculine subjects like maths. However, if a girl displayed more masculine traits and preferences, this may lead to more positive parent and teacher expectations in masculine subjects. Future work could examine links between multi-dimensions of children's gender and other constructs known to influence self-concepts and achievement such as entity or incremental beliefs about intelligence (Dweck, 2007), and also differences in teacher and parent perceptions by children's masculine and feminine preferences and traits.

### **Measurement Issues**

Due to the unexpected results from the children's predictors of ability self-concepts, potential measurement issues are identified that could have contributed to these findings. Firstly, the association between feminine preferences (Time 2) and higher self-concepts of academic ability in maths could be explained by an examination of the items that make up the feminine gender preferences scale: the

items include being a teacher and reading. Overall these items are more in line with academic work as a whole, which could explain why the correlation also exists for maths.

Secondly, boys and girls with more egalitarian gender-role attitudes had higher self concepts in maths. This supports hypothesis 3 for girls as maths is a masculine subject, but does not support the hypothesis for boys. An alternative explanation would be that this measure may be assessing an underlying awareness of social norms, as the items are fairly socially unacceptable as they are sexist opinions. This explanation is supported by negative correlations between maths and English ability self-concepts with gender-role attitudes showing that those with higher self-concepts have more egalitarian gender-role attitudes. This explanation is supported by those with higher self-concepts also endorsing more egalitarian gender role attitudes. In addition, there were significant negative correlations between gender role attitudes and age ( $r = -.33, p < .01$  for girls and  $r = -.26, p < .01$  for boys). Therefore, the older, more cognitively developed children also endorsed more socially acceptable attitudes.

Finally, more masculine personality traits predicted higher English self-concepts, which was unexpected for both boys and girls. However, there was not mean-level sex differences for masculine personality traits, and an examination of the items suggests that these could represent a more independent and competitive child, traits which could be applied to ability self-concepts in any subject.

### **Limitations and Future Directions**

Overall, to explore these results further, a larger and more diverse sample would be useful. This could be particularly important in regards to ethnicity as the sample was mostly white, and evidence suggests that ethnicity can play a key role in

forming self-concepts of ability. For example, Spears, Brown and Leaper (2010) found that European-American girls had higher self-concepts for maths and science than Latin-American girls, which they explained by the double stereotype threat of sex and ethnicity that the Latin-American girls faced. It would also be of interest to compare children from single-sex and mixed-sex schools as Sullivan (2009) found that single-sex schooling reduces the gender gap in ability self-concepts, and this may also mean that predictors of ability self-concepts differ by school context. Finally, due to the measurement issues mentioned above, new ways of measuring children's gender are recommended. Firstly, a wider range of activities and jobs could be used to examine the gendered preferences at Time 2, or a diary method used to evaluate what children are *actually* doing instead of what they would *like* to do. Secondly, an implicit attitude test could be used to evaluate gender-role attitudes in order to avoid the desirability bias.

## **Conclusions**

Although parental influences on their children's ability self-concepts are undeniable, gendered attitudes and behaviours are not 'key' aspects of children's self-concept socialisation. However, children's own gendered personality traits and especially gendered preferences were predictive of ability self-concepts. Whether ability self-concepts are merely reflective of underlying masculine and feminine traits or precursors to differential socialisation, these findings indicate that ability self-concepts remain a heavily gendered construct.



**Chapter 4: Paper 3 - Parental Division of  
Household Labour and Sibling Relationship  
Quality: Family Relationship Mediators**

### **Abstract**

As well as being the longest-lasting relationship of most people's lives, siblings can have enduring influence (Brody, 1998). In particular, Parke (2004) suggests that through sibling relationships, children develop social understanding skills and interaction styles that can be used in peer communication. Previous research examining antecedents to sibling relationship quality have explored factors such as parenting and temperament (Brody, 1998) however, there has been no previous research on the topic of the current study: The present study used a cross-informant approach to examine parent-child and marital relationships as potential mediators of links between parents' gendered attitudes and behaviours and sibling relationship quality. One hundred and twenty-four families with older ( $M = 7.4$  years) and younger siblings ( $M = 5.2$  years) were assessed during early and middle childhood. Parents reported on division of household labour, gender-role attitudes and marital satisfaction. Each child reported on sibling relationship quality and parental warmth and hostility through puppet interviews. Results revealed a link between less traditional division of household labour and more positive sibling relationship quality. Furthermore, this association was mediated by maternal warmth (older siblings' report) and by paternal hostility (younger siblings' report). Marital satisfaction was not a significant mediator. The findings highlight the importance of taking a family systems perspective as demonstrated by the interdependence of family sub-systems, and that families with more egalitarian division of household labour supports more positive family relationships.

## **Parental Division of Household Labour and Sibling Relationship Quality: Family Relationship Mediators**

Although associations between parents' gendered attitudes and behaviours and family relationships such as marriage and the parent-child relationship have been found (Marks, Lam & McHale, 2009; Deutsch, Servis & Payne 2001), we are aware of no study linking parents' gendered attitudes and behaviours and sibling relationship quality; only antecedents such as parenting and temperament have been examined (Brody, 1998). Therefore I was interested in exploring associations between specific elements of parents' gendered attitudes and behaviours with sibling relationships quality as this is still a under examined family relationship. In addition, associations have been found between both marital satisfaction and parenting with sibling relationship quality, indicating that these relationships could mediate the link between parents' gendered attitudes and behaviours and sibling relationship quality (Criss & Shaw, 2005; Dunn, Deater-Deckard, Pickering, Golding, & ALSPAC, 1999; Stocker, Dunn & Plomin, 1989). Extant research in the areas of sibling relationship quality, parents' gendered attitudes and behaviours, marital satisfaction, parenting, and their interrelationships are reviewed and the present study outlined.

### **Sibling Relationship Quality**

As well as being the longest-lasting relationship of most people's lives, siblings can have enduring influence (Brody, 1998). Research spanning early childhood to adolescence has shown that the sibling relationship has been linked to different dimensions of child adjustment such as antisocial behaviour, depressive symptoms and self-esteem (Criss & Shaw, 2005; Feinburg, Reiss, Neiderhiser & Hetherington, 2005). Pike, Coldwell & Dunn (2005) showed that sibling relationship quality (SRQ) was associated with the older siblings' adjustment beyond what was

explained by the parent-child relationship. In addition, Parke's (2004) review of family relationships suggests that through sibling relationships, children develop social understanding skills and interaction styles that can be used in peer communication. Therefore the potential impact of SRQ is important and far reaching. Previous research investigating antecedents to sibling relationship quality have primarily focused on child temperament and parenting, while more distal contextual factors such as parents' gendered attitudes and behaviours have been relatively neglected, with the exception of socio-economic status (Brody, 1998).

### **Parents' Gendered Attitudes and Behaviours**

Over the past sixty years since the end of the Second World War there have been shifting expectations for male and female roles, particularly in relation to the increase of mothers in employment. This has led to a more equal division of household labour and more egalitarian gender-role attitudes for both men and women (Burt & Scott, 2002; Pleck, 1997). However, research suggests that women still bear the responsibility for more household chores, decisions and childcare (e.g., Sanchez & Thompson, 1997). This extra responsibility on top of working led Hoschild (1989) to coin the phrase the 'second shift'. Women have the first shift of a day's paid work, and then the second shift of housework and childcare both at the start of the day and when they return home. In 1984, Belsky formulated a model of parenting in which child characteristics, personal resources of the parents, and contextual sources are all deemed important determinants of parenting. Contextual support has most often been operationalised as social support (Parke & Buriel, 1998), including spousal support, an aspect of which is the spousal sharing of domestic responsibilities.

The present study examines both gender-role attitudes and household task division as distinct constructs. Although links have been found between traditional gender-role attitudes and more traditional division of household labour (i.e., mothers bearing most of the responsibility for household tasks and child-care; Turner & Gervai, 1995), disparities have also been reported. For example, Milkie, Bianchi, Mattingly and Robinson (2002) found that although most mothers and fathers held egalitarian ideals about sharing household responsibilities, in reality mothers still shouldered most household responsibilities. This could be due to men's conflicting ideas about family life. Men are now supportive of women working and contributing financially to the family but they are less happy with changes that challenge traditional male roles, which may also incorporate taking part in traditionally feminine household tasks (Burt & Scott, 2002).

We are not aware of previous research exploring links between parents' gendered attitudes and behaviours and SRQ, however these constructs have been linked to gendered child outcomes such as gender-role attitudes and gendered personality traits (Booth & Amato, 1994; McHale, Crouter & Tucker, 1999; Turner & Gervai, 1995). Bronfenbrenner (1979) has highlighted the importance of examining how daily life affects development through the ecological perspective, and how everyday household chores and child-care are divided is a key aspect of this. In addition, Parke, Ornstein, Rieser, and Zahn-Waxler (1994), suggest that research has tended to focus on parents as 'interaction partners', where a parent has a direct effect upon the child. Parke and colleagues (1994) recommend that more indirect pathways, such as parents being 'opportunity providers' and 'instructors' should be examined.

Division of household labour can be seen as parental modelling of family gender-roles. Functional theorists (e.g., Parsons, 1949) posit that the family works best when men and women stick to specific roles (men in paid work and women at home), whereas a feminist approach (Fox & Murray, 2000; Thompson & Walker, 1995) suggests that family functioning is improved when roles are shared more equally. Parents' gendered attitudes and behaviours have the potential to influence sibling relationships both directly and indirectly. Direct influences could include more traditional parental attitudes about gender-roles influencing children's behaviours with their siblings, particularly within opposite sex pairs. A feminist approach suggests that this could contribute to boys treating girls as inferior in line with more traditional attitudes. However, a functionalist approach would suggest that traditional parental attitudes and behaviours would lead to more positive sibling relationships, as girls and boys would learn about their gendered functional roles from modelling their parents, and this would promote happier, healthier, family dynamics.

Due to the lack of research examining direct influences between parents' gendered attitudes and behaviours and SRQ, previous research exploring links between parents' gendered attitudes and behaviours and the potential mediators of marital relationship and parenting are now outlined. Marks, and colleagues (2009) found that families with more traditional gender-role attitudes had more conflict in parent-child relationships. Research has also shown that when fathers played a more active role in parenting, children have higher self-esteem and academic achievement (Deutsch, et al., 2001; Cooksey & Fondell, 1996). In addition, a positive association was reported between the amount of time fathers spent with children and the quality of their parenting (Greenberger, O'Neill & Nagel, 1994). Therefore, parenting could

potentially mediate the relationship between division of household labour and sibling relationship quality.

In addition to this research, links have been found between division of household labour and marital satisfaction (Ozer, Barnett, Brennan & Spreling, 1998; Steil, 1997). For example, increasingly traditional division of labour is seen in the transition to parenthood even in families with egalitarian gender-roles, which contributes to a sharp decrease in womens' marital satisfaction (Deutsch, 1999). Therefore, marital satisfaction could also potentially mediate the association between division of household labour and sibling relationship quality.

Finally, the spillover hypothesis (Engfer, 1988; Erel & Burman, 1995), where aspects of one family relationship are also seen in other family relationships, suggests that a similar association could be found between parents' gendered attitudes and behaviours and the sibling relationship as has been reported for the marital relationship. Therefore, parents gendered attitudes and behaviours could impact children's adjustment beyond their gender development and may also influence sibling relationships. Additionally, the spillover hypothesis suggests that other family relationships could be playing a part in the association between parents' gendered attitudes and behaviours and SRQ. Therefore, marital satisfaction and parenting are examined as potential mediators in the current study. Theoretical perspectives underpinning these proposed mechanisms are outlined and evidence supporting these theories are described below.

### **Relations among Relationships**

We took a family systems perspective (Minuchin, 1974) and considered all nuclear family dyadic relationships; siblings, marital, and parent-child. Family systems theory posits that an examination of all of the parts of the family is

necessary to aid understanding of one family sub-system as family relationships are interdependent.

Specifically, the spillover hypothesis (Engfer, 1988; Erel & Burman, 1995) suggests that behaviour from one relationship can ‘spillover’ or transfer to other relationships. This can happen in several ways, and of particular interest for this study is the suggestion that children learn how to act in interactions with others through the parent-child relationship. For example, if the parent-child relationship is warm and close, this can lead to more warm and close sibling relationships. Stocker and colleagues (1989) found that more positive and less negative parent-child relationships were linked to more positive and less negative sibling relationships. Kim, McHale, Osgood & Crouter (2006) found that maternal positivity was linked to sibling positivity, and paternal negativity was associated with sibling negativity. In addition, research exploring negative aspects of family relationships has found that unhappy marital/cohabiting relationships are associated with problematic parent-child relationships, and more hostile sibling relationships (e.g., Brody, Stoneman, & McCoy, 1994; Erel & Burman, 1995).

There are several hypothesised mechanisms underlying this spill-over of family relationships (Engfer, 1988; Erel & Burman, 1995). Firstly, problems consistent with one relationship could be ‘scapegoated’ to another relationship. Secondly, an individual may model behaviour with others based on their interactions with another family member. This could be explained by social learning theory (Mischel, 1966) which suggests that the pattern of interactions between mothers and fathers will be used as a model by children for relationships with siblings and peers. In support of the theory, research has found links between marital and sibling relationship quality (e.g., Erel, Margolin & John, 1998). Thirdly, socialisation



theorists would propose that a parent who has difficulty effectively disciplining his/her children will also have difficulty managing sibling disputes. Finally, stress from one relationship could be putting additional strain on other family relationships according to the family stress and role strain hypothesis (Engfer, 1988; Erel & Burman, 1995).

### **Present Study**

The present study extends previous research on antecedents of sibling relationship quality by examining parents' gendered attitudes and behaviours. In addition, potential mediators of the link between gendered attitudes and behaviours and sibling relationship quality were investigated. Sibling relationships were examined during early and middle childhood before the strong influences of peer relations set in, and evidence suggests that in middle childhood siblings spend more time with each other than with parents (McHale & Crouter, 1996). Due to their complementary roles in siblings' lives, perspectives from both mothers and fathers were used, and a cross-informant approach adopted to include children's perspectives of parenting and the sibling relationship.

### **Research Questions**

**Research Question 1:** What is the association between parents' gendered attitudes and behaviours and sibling relationship quality?

**Research Question 2:** Do parenting and/ or marital satisfaction act as mediators of these associations?

## **Method**

### **Sample and Recruitment**

Participants were 124 families from the Sussex area recruited by leaflets in schools (97%) and advertisements in local papers (3%). Only two-parent families

were used in this study. The majority of families were recruited via schools who were asked to send letters home to parents of children in Reception (aged 4-5 years) and Year One (aged 5-6) who also had an older brother or sister aged 8 or younger. The mean age of the younger child was 5 years 2 months ( $SD = 7.05$  months). The mean age of the older child was 7 years 4 months ( $SD = 9.32$  months). The average age difference between the siblings was 26.41 months ( $SD = 8.98$  months). The mean age of the mothers was 36.20 years ( $SD = 4.99$ ) and the mean age of the father, was 40.31 ( $SD = 5.18$ ). Sibling sex constellation was as follows, boy-boy  $N = 30$ ; girl-girl  $N = 31$ ; boy-girl  $N = 32$ ; girl-boy  $N = 31$ . The target children were almost exclusively white (93%), which reflects the demographics of the area. Families came from a mix of working class and middle class backgrounds and there was a wide range of educational attainment amongst the families.

### **Procedure**

Home visits to the families were conducted. Both parents were given questionnaires, and each child was interviewed separately. Parents signed a consent form after a researcher discussed the data collection process with the parents and children, and there was an opportunity for them to ask questions. Guidelines for ethical standards by the British Psychological Society were followed, and the study was approved by the Psychology ethics committee at the University of Sussex.

### **Measures**

**Division of household labour.** Parents' division of household labour was measured using the Who Does What questionnaire (Cowan & Cowan, 1990). This is a 43-item scale consisting of three sub-scales: family tasks (e.g., 'planning and preparation of meals'), making decisions (e.g., 'deciding about major expenses') and general child-care (e.g., 'dressing our child'). Parents were asked which of them

performs these tasks on a nine-point scale from 1 'she does it all', to 5 'we both do this about equally', to 9 'he does it all'. Because only a small percentage of families had fathers doing more than mothers, indicated by a score over 5 (24%, 21% and 4% respectively for tasks, decisions and child-care), and an extremely small percentage of families scored over 6 (3%, 1% and 0% respectively for tasks, decisions and child-care), higher scores indicate a egalitarian division of household labour rather than a higher level of work for fathers for all three subscales. As both parents reported on the same information and these reports were substantially correlated ( $r = .60-.78$ ) the two reports were averaged. The Cronbach's alphas for this measure ranged from .68 to .91 indicating satisfactory internal consistency.

**Gender-role attitudes.** Parents' gender-role attitudes were measured using the Male-Female Relations questionnaire (Spence, Helmreich & Sawin, 1980). This is a 30-item measure with two versions (one for men and one for women). The scale consists of four sub-scales. Both parents received sub-scales on Social Interaction (e.g. 'I'd rather have a man as a boss at work than a woman') and Marital roles (e.g. 'I think my partner should take the leadership in making important decisions'). Fathers alone received Expressivity (e.g. 'I think I should be emotionally stronger and tougher than my partner'), and mothers alone received Male preference (e.g. 'I don't like a man who lets me dominate him'). Each item was measured on a five-point scale from 1 ('strongly agree') to 5 ('strongly disagree'). High scores on this scale indicate more egalitarian attitudes. For each parent the three subscales were averaged to create an overall gender-role attitude score as the subscales were moderately to substantially correlated ( $r = .32-.67$ ). The Cronbach's alpha for the mothers' measure was .91 and for the fathers' measure .93 indicating excellent internal consistency.

**Marital satisfaction.** Marital satisfaction was measured using the Golombok-Rust Inventory of Marital State (GRIMS, Rust, Bennun, Crowe, & Golombok, 1989). This 28-item measure asks parents to rate items such as “I find the idea of spending the rest of my life with my partner rather boring” and “I sometimes feel lonely even when I am with my partner” on a 4 point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Therefore a high score indicates low marital satisfaction.

**Children’s reports of sibling and parent-child relationships.** The Berkley Puppet Interview (BPI; Ablow & Measelle, 1993) was used to assess family relationships according to the children. Two puppets make opposing statements (e.g. “I like my sister”; “I don’t like my sister”) and then the children are asked about their own family (e.g. “How about you?”). Positive and negative statements are counterbalanced, and statements from all of the family relationship subscales are randomly assorted. Children’s responses were coded on a seven point scale from 1 (most negative) to 7 (most positive). When a child chooses a response option as expressed by the puppet, a code 2 (for a negative response such as “I don’t like my sister”) or a code 6 (for a positive response such as “I like my sister too”) is used. When a child amplifies a statement (e.g., “I hate my sister” or “I really like my sister”), a code 1 (negative) or 7 (positive) is used. A code 3 or 5 indicates a response that is qualified in some way (e.g., “I don’t like my sister most of the time” or “I kind of like my sister”). Finally, a code 4 is used when a child indicates that both response options apply to him or her. Inter-rater reliability for the scales was excellent ( $r \geq .90$ ).

The BPI interview is composed of two subscales relating to the sibling relationship; Positive Affect/ Enjoyment (‘my brother/ sister is fun to play with’

versus ‘my brother/ sister is not fun to play with’) and Rivalry/ Hostility (‘I like to tease my brother/ sister versus ‘I don’t like to tease my brother/ sister’) but a factor analysis showed that a one factor solution most accurately represented the data. Therefore an overall sibling relationship scale was constructed with higher scores indicating more Positive Affect/ Enjoyment and less Rivalry/ Hostility.

There are also two subscales for each parent-child relationship: Warmth/Enjoyment and Anger/Hostility. The parent-child relationship subscales each contain six items. The Warmth/Enjoyment subscale includes items such as “my mum/dad is nice to me” versus “my mum/dad is not nice to me,” and the Anger/Hostility subscale contains items such as “my mum/dad is mean to me” versus “my mum/dad is not mean to me.” Factor analysis confirmed these two subscales.

## **Results**

### **Preliminary Analyses**

Descriptive statistics for all measures are shown in Table 4.1 including Cronbach’s alphas which indicated satisfactory reliability. A series of one-way ANOVAs with four levels were conducted to explore differences between families of different sibling sex constellations (boy-boy; girl-girl; boy-girl; girl-boy). Significant differences emerged for older siblings’ reports of maternal warmth,  $F(3,103) = 4.31, p < .01$ . Post-hoc tests revealed that older sibling girls reported more maternal warmth than did boys with younger sisters.

Table 4.1  
*Descriptive Statistics for all measures*

	Minimum	Maximum	Mean	Standard Deviation	$\alpha$
Parents' gendered attitudes and behaviours					
Household task division	1.53	7.14	4.59	.75	.73
Decisions division	2.78	6.40	4.67	.59	.82
Child-care division	1.94	5.88	3.69	.76	.95
Mothers' gender-role attitudes <sup>a</sup>	2.23	4.97	3.65	.59	.91
Fathers' gender-role attitudes <sup>a</sup>	2.47	4.93	3.72	.62	.93
Sibling relationship quality					
Younger sibling BPI	1.86	6.17	4.23	1.12	.84
Older sibling BPI	2.40	6.07	4.35	1.06	.88
Parenting					
Older sibling report of maternal warmth	3	6.83	5.66	.68	.67
Younger sibling report of maternal warmth	2.67	6.20	5.42	.76	.74
Older sibling report of paternal warmth	2	6.83	5.64	.80	.65
Younger sibling report of paternal warmth	2	6.33	5.39	.85	.62
Older sibling report of maternal hostility	1.83	6.33	3.50	1.13	.74
Younger sibling report of maternal hostility	1.83	6.17	3.37	1.08	.73
Older sibling report of paternal hostility	2	6.17	3.53	1.14	.73
Younger sibling report of paternal hostility	1.83	6	3.66	1.05	.56
Marital Satisfaction					
Mothers' report	7	51.13	24.83	10.54	.89.
Fathers' report	3	47	24.01	9.74	.89

<sup>a</sup> Division of household responsibilities scales were measured from 1 'she does it all' to 9 'he does it all'. <sup>b</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes.

As a preliminary step in exploring the research questions (RQ1: What is the association between parents' gendered attitudes and behaviours and sibling relationship quality?; RQ2: Do parenting and/ or marital satisfaction act as mediators of these associations?), Pearson correlation coefficients were calculated to assess the associations between gender-role attitudes, division of household labour, parenting, marital satisfaction and SRQ (see Table 4.2). Families in which fathers did relatively more household tasks than in other families (egalitarian) were characterised by higher SRQ according to both siblings, and more egalitarian division of decisions was associated with younger siblings' reports of SRQ. Egalitarian division of household labour was also associated with less paternal hostility (younger siblings) and higher maternal warmth (older siblings). In addition, more egalitarian division of household labour was associated with higher marital satisfaction (wives' reports). Warmer and less hostile parenting and higher marital satisfaction were all associated with higher SRQ. Finally, maternal warmth was associated with greater marital satisfaction (wives' reports) and lower paternal hostility was associated with greater marital satisfaction (husbands' reports). Overall, we found that in families with a more egalitarian split of household tasks and decisions, children reported better sibling relationships. Because only one significant association between parents' gender-role attitudes and sibling relationship quality was revealed, gender-role attitudes were excluded from further analyses. Therefore preliminary results in regard to research question 1 showed that division of household labour, but not gender-role attitudes, was associated with sibling relationship quality. In regard to research question 2, links were found between division of household labour and marital satisfaction and parenting, as well as between parenting and sibling relationship quality, and marital satisfaction and sibling relationship quality.

Table 4.2 *Correlations between parents' gendered attitudes and behaviours, parenting, marital satisfaction and sibling relationship quality.*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Parental household task division <sup>a</sup>	—	.35**	.32**	.27**	.24*	.28**	.10	.06	-.02	-.20*	-.25**	-.02
2. Parental decisions division <sup>a</sup>	.35**	—	.17	-.11	.00	.19*	.13	.09	-.17	-.18	-.32**	-.14
3. Parental childcare division <sup>a</sup>	.32**	.17	—	.28**	.25*	-.09	-.03	.02	-.00	-.08	-.14	.03
4. Mothers' gender-role attitudes <sup>b</sup>	.27**	-.11	.28**	—	.49**	.00	.12	.20*	.07	-.18	-.05	.17
5. Fathers' gender-role attitudes <sup>b</sup>	.24*	.00	.25*	.49**	—	.14	-.11	.10	.07	-.24*	-.19	-.25*
6. Sibling relationship quality	.24*	.16	-.03	-.19*	.06	—	.30**	.21*	-.18	-.22*	-.22*	-.24*
7. Maternal warmth	.20*	.21*	.21*	.14	.15	.32**	—	.47**	-.20*	-.10	-.09	-.03
8. Paternal warmth	.17	.08	-.01	.02	.22*	.33**	.31**	—	-.17	-.29**	-.07	-.05
9. Maternal hostility	-.07	-.12	.09	-.02	-.12	-.52**	-.36**	-.25*	—	.63**	.05	.02
10. Paternal hostility	-.03	-.07	.15	.11	-.15	-.53**	-.23*	-.49**	.67**	—	.10	.13
11. Mothers' marital satisfaction	-.25**	-.32**	-.14	-.05	-.19	-.15	-.20*	-.18	-.01	.17	—	.57**
12. Fathers' marital satisfaction	-.02	-.14	.03	.17	-.25*	-.27**	.04	-.10	.06	.28**	.57**	—

*Note.* Older sibling results are on the bottom half of the table and younger siblings on the top half, N ranged between 100-116.

<sup>a</sup> Division of household responsibilities scales were measured from 1 'she does it all' to 9 'he does it all'. <sup>b</sup> Higher scores on the parents' gender-role attitude scale indicates more egalitarian attitudes. \* $p < .05$  \*\* $p < .01$ .



To examine whether parenting and marital satisfaction were acting as mediators for the relationship between division of household labour and SRQ (research question 2), Structural Equation Modelling (SEM) analyses were conducted. The benefit of SEM, in comparison to regression analysis, is that it minimizes measurement error (Kline, 2005). Latent variables were used to represent division of household labour, marital satisfaction and sibling relationship quality. Division of household tasks, division of decisions and division of child-care were indicators of the latent variable division of household labour. Mothers' and fathers' reports of marital satisfaction were indicators of the latent variable marital satisfaction<sup>1</sup>. Older siblings' and younger siblings' reports of SRQ were indicators of the latent variable SRQ. Observed variables were used for maternal warmth (older siblings' reports) and paternal hostility (younger siblings' reports), as the observed parenting variables were not correlated sufficiently to serve as indicators of latent factors<sup>2</sup>.

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<sup>1</sup> A two indicator solution led to negative error variance which affects the regression weights for the model. Therefore, item parcelling with randomised assignment of items (as recommended by Little, Cunningham, Shahar & Widaman, 2002) was used to split the mothers' and fathers' reports of marital satisfaction into two observed indicators per report (a four indicator solution).

<sup>2</sup> Parenting measurement models with all 8 indicators (of warmth and hostility for both children) were tested, as were separate models for warmth and hostility. All models had poor fit indices and non-significant factor loadings, therefore observed variables were used in the mediation model.

### **Measurement Model**

As recommended by Kline (2005), the measurement model was tested through confirmatory factor analysis before constructing the structural model. This involved examining each latent variable individually. However, because sibling relationship quality only had two observed variables it was under identified, and was therefore examined alongside division of household labour. All factor loadings were significant for each latent variable demonstrating that the observed variables were representative of the latent variables. Model fit indices for each model were good using the criteria recommended by Kline (2005), that  $\chi^2$  should be low and non-significant, and that RMSEA should be  $< .10$  and CFI should be  $> .90$ . The measurement model for division of household labour and SRQ fit the data reasonably well with  $\chi^2 (4) = 6.77, p > .10, RMSEA = .063, CFI = .95$ . In addition the direct effect of division of household labour on SRQ was assessed, and a significant association was found ( $\beta = .37, p < .05$ ) providing further evidence for research question 1. The measurement model for marriage fit the data less well with  $\chi^2 (2) = 70.29, p < .05, RMSEA = .53, CFI = .76$ . Nevertheless, as all four factor loadings were highly significant, this model was still used in further analyses.

### **Mediation model: Testing mediation via parenting and marital satisfaction**

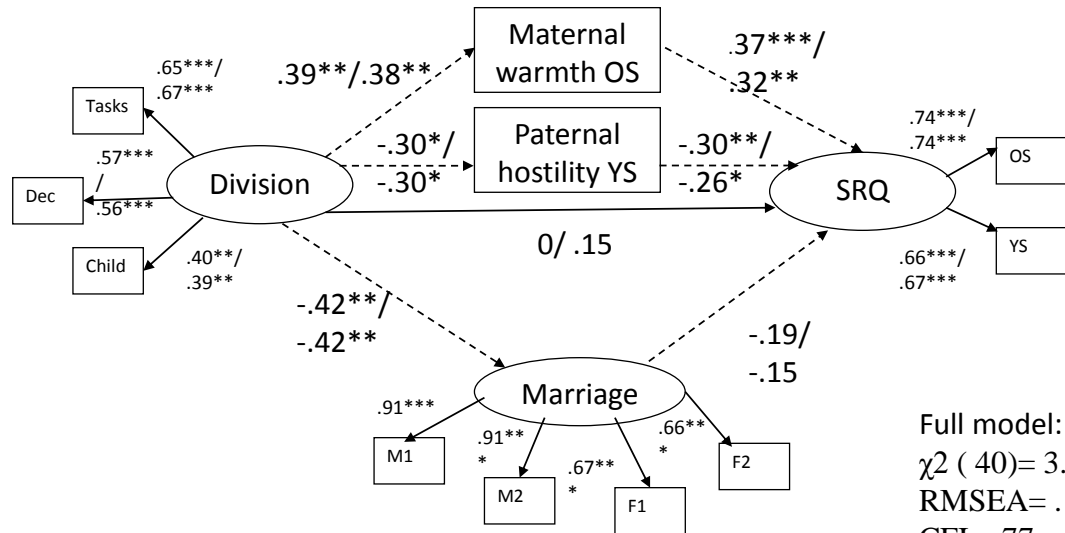
The analyses included two different mediation models. Figure 4.1 depicts the first mediation model, with a direct path represented by a solid line between division of household labour and SRQ, and the hypothesised mediation paths through warmth (older siblings' report), hostility (younger siblings' report) and marital satisfaction represented by dashed lines. A model with the direct path from division of household labour to SRQ included was compared to a model with the path constrained to zero. Figure 4.1 depicts this model and gives path estimates for the

constrained model first and the non-constrained model second. The path between marital satisfaction and SRQ was not significant, therefore a new model without marriage was tested (see Figure 4.2). In this second mediation model, all paths were significant except the direct path between division of household labour and SRQ in the non-constrained model, indicating that parenting is acting as a mediator.

Mediation was tested formally using the Sobel test (Soper, 2011). The results showed that for the mediation through warmth,  $z = 2.09$ ,  $p < .05$  and through hostility,  $z = 1.76$ ,  $p = .08$  indicating that warmth is a significant mediator, and hostility is a trend-level mediator. Due to the conservative nature of the Sobel test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002), trend level results can be treated more leniently. Therefore for research question 2, we can conclude that the relationship between division of household labour and SRQ is mediated by paternal hostility (younger siblings' report) and maternal warmth (older siblings' report), but not marital satisfaction.

Figure 4.1

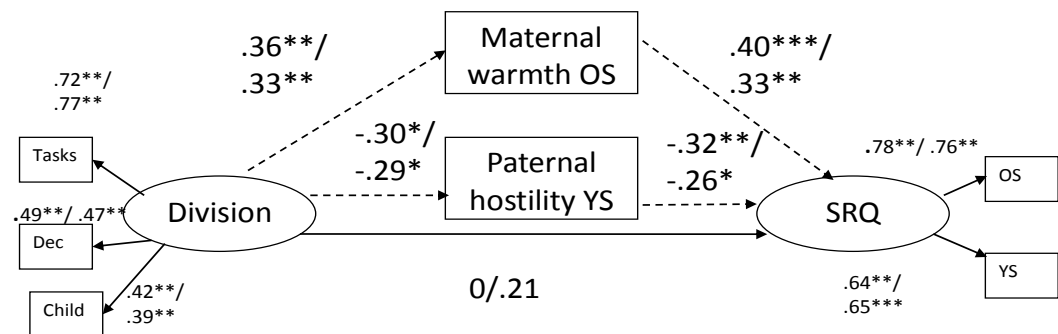
*Mediation model including marital satisfaction and parenting*



\*\*\*p < .001, \*\*p < .01, \*p < .05

Full model:  
 $\chi^2 (40) = 3.21$  \*\*  
 RMSEA = .13  
 CFI = .77  
 Mediation model:  
 $\chi^2 (39) = 3.28$  \*\*  
 RMSEA = .14  
 CFI = .77

Figure 4.2

*Mediation model including parenting*

Full model:

 $\chi^2(12) = 1.27$   $p > .05$ 

RMSEA = .05; CFI = .96

Mediation model:

 $\chi^2(11) = 1.24$   $p > .05$ 

RMSEA = .04; CFI = .97

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

## Discussion

This study is unique in examining the association between parents' gendered attitudes and behaviours and sibling relationship quality within a family systems framework. The main findings were that division of household labour but not gender-role attitudes were linked with sibling relationship quality, and maternal warmth and paternal hostility mediated this association. An overview of how these results align with different theoretical perspectives and interpretation of the mediators of division of household labour and SRQ are explored below.

### Parents' Gendered Attitudes and Behaviours

Using a cross-informant design, we found that in families with a more egalitarian division of household tasks and decisions, children reported better sibling relationships. This is the same pattern that has been found between division of household labour and the marital relationship (Ozer, et al., 1998; Steil, 1997). Of equal interest, only one significant association between parents' gender-role attitudes and sibling relationship quality was revealed. Hence we propose that parents' *actual* behaviour is more important than their *attitudes* in respect to family dynamics. This is consistent with a social learning theory perspective that children will model their parents' roles and behaviour (Mischel & Liebert, 1966), whereas attitudes may be more hidden from children.

Associations between division of household labour and both marital satisfaction and parenting further uncovered the wide impact of how domestic labour is shared. The effect of division of household labour on sibling relationship quality was entirely mediated by the proximal mechanism of parenting, congruent with the spillover hypothesis and ecological models of development. In addition, the lack of results for marital satisfaction as a mediator could be a result of the aspect of

marriage that was examined. For example, marital conflict rather than satisfaction may be more salient to children – an idea bolstered by significant links found between gender-role attitude and conflict (Lye & Biblaraz, 1993). Alternatively, the lack of association between marital satisfaction and SRQ in the structural model could be due to the presence of *both* spillover *and* compensatory processes in the association between marital satisfaction and sibling relationship quality. In support of the compensatory hypothesis, Kim and colleagues (2004) found that when fathers reported lower marital satisfaction, siblings had more positive relationships.

These findings support an ecological perspective (Bronfenbrenner, 1979), highlighting the importance of everyday life such as household tasks and child-care division on family relationships. Additionally, in line with a feminist perspective (Fox & Murray, 2000; Thompson & Walker, 1995), when parents have more egalitarian division of household labour this has implications for marital, parent-child and sibling relationships and seems to result in more harmonious family dynamics. In contrast, our findings contradict the functionalist approach which suggests that the family works best when men and women conform to gender-role specific tasks and therefore marital quality is higher as the family functions well and is stable. Our results not only show that marital satisfaction is higher when division of household labour is more egalitarian, but that *all* family relationships are more positive. Therefore encouraging fathers to share household responsibilities more equally is of importance to all family members.

### **Sibling Relationship Quality**

Previous research has explored links between SRQ and other aspects of family context such as socioeconomic status and chaos and found that sibling relationships were more positive in more advantaged and well organized families

(Kretschmer & Pike, 2009). The current study extends this work by exploring SRQ's associations with parents' gendered attitudes and behaviours as well as different family relationships, demonstrating that sibling relationships are also affected by the backdrop of gendered household labour division. This study also shows the importance of taking a family systems perspective (Minuchin, 1974) and considering multiple aspects of family dynamics including aspects of the mother-father, mother-child, father-child and sibling relationships. In addition, this research further supports the spill over hypothesis as there were interrelationships between parenting, the sibling relationship and the marital relationship. However, due to the cross-sectional nature of the data it is not yet clear which direction the 'spill-over' is taking and it is possible that these relationships are bidirectional. For example, fathers may find involvement more rewarding in harmonious families.

### **Within Family Variation**

Distinct results emerged for both mothers and fathers, and also older and younger siblings. Evidence has shown that there are mother/ father differences not only in time spent with children, but also in the type of activities that mothers and fathers partake in with their children (Lamb, 1997). Although fathers are spending more time with their children now than ever before, paternal involvement still does not match maternal involvement even when the mother is employed (Pleck, 1997). Mothers also typically take on the care-taker role, whereas the father takes the role of playmate (Lewis & Lamb, 2003). Most importantly, research indicates that the quantity and quality of fathers' involvement does impact children's developmental outcomes above and beyond mothering (Parke & Buriel, 1998). Because of the distinct features of mothers and fathers, it is not surprising that there are disparities in the way that mother-child and father-child parenting can act as mediators. Differences



between parents also transfers to the type of parenting (i.e., warmth/ hostility), and there seems to be different underlying processes causing variation between mothers and fathers. McHale, Crouter and Whitemans' (2003) review found that children had warmer, closer relationships with their mothers and more distant relationships with their fathers. In addition, Kim and colleagues (2004) found that sibling relationships were linked to mothers' positivity but not fathers' negativity, which is also consistent with the results from this study. The findings from the current study suggest that when the household responsibilities are shared, mothers have more resources to be warm in their parenting. However for fathers, it appears that their parenting may be more reflective of their engagement in family life, and that if they are more likely to share the household responsibilities they are also less likely to be hostile in their parenting.

Differences between older and younger siblings reports of parenting and the different mediators used in the model suggests that older and younger siblings are experiencing different parenting from the same parent, which supports literature on parental differential treatment (McHale, Updegraff, Jackson-Newsom, Tucker & Crouter, 2000). This could be because of the different developmental stage that older versus younger siblings were at during data collection. For example, Pike, Coldwell & Dunn (2006) found that children's perspectives of parenting were different for mothers and fathers, in particular younger children's relationships with fathers were characterised by more anger and hostility than were relationships with mothers. However, there were no a priori hypotheses for distinctions between mothers and fathers nor older and younger siblings, and replication is needed to develop a full understanding of these differences.

### **Limitations and Future Directions**

The sample used in this study examined two children from each family, although approximately a third of these families had at least one additional child. Examining all of the siblings in a family in the future would enable the use of multilevel modelling analysis to fully explore the nuances of family dynamics in different sized families. A more diverse sample would enable an exploration of ethnic, cultural and socio-economic differences in the future. In addition, a larger sample would enable analyses split by gender. Finally, a longitudinal sample would enable examination of the temporal links between the constructs, including analysis of stability and change.

### **Conclusions**

Division of household labour (but not gender-role attitudes) was associated with sibling relationship quality, and parenting (but not marital satisfaction) acted as a mediator for the link between division of household labour and sibling relationship quality. This finding supports a family systems perspective and highlights the importance of examining multiple aspects of families simultaneously. This research has extended the knowledge of the sibling relationship by exploring the interrelationships between division of household labour, parenting and marital satisfaction, all of which have been found to be important factors in family dynamics but have not previously been examined in concert. This is an important addition to the literature as it shows that division of household labour is not only linked to marital satisfaction, but that it permeates parenting and sibling relationship quality too. These findings emphasise the need for fathers to equally share household responsibilities to promote more harmonious family relationships.

## **Chapter 5: General Discussion**

## **General Discussion**

This thesis presented three studies that were carried out with the aim of investigating gendered parental influences on children's development. This final chapter will provide a summary of the correlates of parents' gendered attitudes and behaviours across the domains covered by the three papers. The key implications of the research will then be discussed, followed by an examination of potential limitations and suggestions for future research.

### **Summary of Findings**

The examination of the influence of parents' gendered attitudes and behaviours in the three areas of: children's gender development (Paper 1), ability self-concepts (Paper 2) and family relationships (Paper 3), yielded three main results. Firstly, both division of household labour and gender-role attitudes were predictive of children's gendered preferences, gendered personality traits and gender-role attitudes. Secondly, neither division of household labour nor gender-role attitudes were predictive of children's ability self-concepts. Thirdly, division of household labour, but not gender-role attitudes, was predictive of sibling relationship quality. Overall, more egalitarian parents' gendered attitudes and behaviours were predictive of more egalitarian gender-role attitudes, less traditional gendered preferences and personality traits, and more positive sibling relationships for children.

The different pattern of findings for parents' gendered attitudes and behaviours provides support for a multi-dimensional approach to gender. Furthermore, multiple dimensions of children's gender were predictive of children's ability self-concepts, again highlighting the importance of a multi-dimensional approach.

Paper 1 showed that parents' gendered attitudes and behaviours were associated with children's gender development in three areas: gendered preferences, gendered personality traits and gender-role attitudes. In particular, fathers' gender-role attitudes and division of household tasks were found to be most closely linked to children's gender development. In addition, parents' gendered attitudes and behaviours explained the most variance in children's gender-role attitudes (in contrast to preferences and personality traits) at 14% of the variance, demonstrating inter-generational transmission of gender-role attitudes. Different patterns of results were found for each dimension of children's gender development, highlighting the importance of using a multi-dimensional approach.

Paper 2 demonstrated that neither parents' gender-role attitudes, nor division of household labour, were predictive of children's ability self-concepts. However, children's gendered preferences, personality traits and gender-role attitudes explained 9-21% of the variance in ability self-concepts. Higher feminine preferences predicted higher self-concepts in English and lower self-concepts in maths and sports. Higher masculine preferences and masculine personality traits predicted higher sports self-concepts. Finally, more traditional gender-role attitudes predicted lower self-concepts in maths ability, but there was no differential prediction of boys and girls.

Paper 3 found that parents' division of household labour, but not their gender role attitudes, predicted sibling relationship quality. In addition, more egalitarian division of household labour was associated with warmer and less hostile parenting, and more positive marital relationships. Warmer and less hostile parenting, and more positive marital relationships, were also associated with more positive sibling relationships, providing support for a family systems approach and the spill-over

hypothesis (Engfer, 1988). Parenting, but not marital satisfaction, mediated the association between division of household labour and sibling relationship quality.

### **Sex Differences**

Overall, the three papers revealed less sex differences in the three areas than was hypothesised. In paper 1, sex differences were found for the majority of gendered dimensions as expected; girls had higher feminine preferences and feminine personality traits than boys, and boys had higher masculine preferences and more traditional gender-role attitudes than girls. However, only one out of 40 interactions between the predictors of gendered dimensions and sex were found, indicating similar patterns of prediction for boys and girls. In paper 2, sex differences were found in maths and sports ability self-concepts, with boys rating themselves higher than girls. In regard to the predictors of ability self-concepts, only two out of 36 interactions with sex were found, also indicating similar patterns of prediction for boys and girls. In paper 3, sibling sex constellation differences were examined and older sibling girls reported higher maternal warmth than older sibling boys, but as this was the only difference, different predictors for boys and girls were not examined for sibling relationships. Therefore, in general, it appears as though boys' and girls' development have similar correlates. This was unexpected and could be due to a reduction in gender differentiation due to cultural changes around women's roles over the past sixty years. This is consistent with O'Shea and Kirrane's (2008) study, which found no sex differences in adults' gendered attitudes about work and home. Additionally, power limitations discussed in the section below could also explain the lack of sex differences.

### **Correlates of Parents' Gendered Attitudes**

In two of the three papers, parents' gender-role attitudes were not significant predictors of child development (papers 2 and 3). However in paper 1, egalitarian fathers' gender-role attitudes predicted children's lower feminine preferences (Time 1), more egalitarian gender-role attitudes, and less masculine personality traits. Mothers' egalitarian gender-role attitudes predicted more feminine personality traits for girls and less feminine personality traits for boys. There were no other significant findings for mothers' gender-role attitudes. The inter-generational transmission of gendered attitudes was also found in a meta-analysis of 43 studies by Tenenbaum and Leaper (2002). Previous research has shown that fathers' attitudes are more influential than mothers' for children's development (e.g. Weinraub et al., 1984), and that in particular fathers are more focused on gender socialisation than mothers and are more likely to treat boys and girls differently (Lytton & Romney, 1991; Maccoby & Jacklin, 1974; McHale et al., 2003). This thesis supports that research, as very different patterns were found for the influence of fathers' as opposed to mothers' gender-role attitudes as described above, with fathers' attitudes predicting three of the children's gendered outcomes, and mothers' attitudes only predicting one. This suggests that fathers are having a unique impact on children's gender development.

The differences between mothers' and fathers' results are somewhat contrary to social learning theory, which postulates that the same sex parent would have more influence on a child, whereas fathers' attitudes were a stronger predictor than mothers' for both boys and girls. This is more consistent with social cognitive theory, where children seek role models of both genders (Ruble et al., 2006). The links between fathers' and children's gender-role attitudes are also consistent with a

socialisation perspective, that parents instruct, reinforce and provide a model for children's gender-role attitudes (Lytton & Romney, 1991). In addition, a feminist approach suggests that fathers may be influencing family life more than mothers due to their superior economic position, which filters down to many aspects of children's microsystem, such as the families' socio-economic position and opportunities available to children (McHale et al., 2003).

One possible explanation for the lack of results from parents' gendered attitudes as opposed to division of household labour for family relationships, is that attitudes are not as visible as actual behaviour to children, and therefore observational learning is less likely to happen. It also suggests that parents' gendered attitudes are not always consistent with behaviour, which is also reflective of some of the past research, such as Milkie, Bianchi, Mattingly and Robinson (2002) who found that although most mothers and fathers held egalitarian ideals about sharing household responsibilities, in reality mothers still shouldered most household responsibilities. Finally, the lack of association between parents' gendered attitudes and ability self-concepts could be due to parents' attitudes regarding ability self-concepts not being consistent with their general gender-role attitudes. Previous findings suggest that it is parents' specific attitudes towards sex differences in ability self-concepts that influences their perceptions of their children's abilities, and consequently children's own ability self-concepts (Jacobs & Eccles, 1992). Future research needs to determine the nuances in parents' gendered attitudes and behaviours to further develop this theory.

### **Correlates of Parents' Division of Household Labour**

Throughout the three papers, division of household labour was a more consistent predictor of child outcomes than gender-role attitudes. In paper 1,



egalitarian division of household tasks predicted children's higher feminine preferences (Time 1 and 2) and more egalitarian gender-role attitudes. However, the results for division of decisions were less clear and child-care division was not a predictor of any of the child gender measures. Paper 2 revealed that division of household labour was not predictive of ability self-concepts. Paper 3 found that the three dimensions of division of household labour (tasks, decisions and child-care) loaded onto a single latent variable. This latent variable of division of household labour predicted more positive sibling relationships, and this was fully mediated by warmer and less hostile parenting.

Previous research has shown the importance of fathers' involvement for children's development above and beyond maternal influences (e.g. Marsiglio, Amato, Day, & Lamb, 2000). The research presented in this thesis has shown that fathers' more distal (indirect) involvement in household labour is also beneficial. This could be partly due to the increase in time fathers will be spending with their children, and also the time and type of activities they are doing with their children. For example, fathers could be assisting with sibling negotiations or providing extra time to help with homework. Having fathers as a resource in children's everyday lives may have widespread benefits. For example, when daughters spent more time with their fathers they were better at traditionally male subjects like science and maths (Updegraff, McHale, & Crouter, 1996).

The associations between parents' division of labour and gender development and sibling relationships are consistent with social learning theory, and it appears that parental modelling is taking place. This could explain the decline in feminine preferences when fathers are responsible for a more equal share of the household labour, as there is a more masculine role model in the household. In addition, the

demonstration of egalitarian gender-role attitudes, through fathers doing more of an equal share in the household, provides a clear model for children to follow. The benefits of the shared division of household labour then penetrate both marital and parent-child relationships, providing a model for children's sibling relationships.

These results are contrary to functionalist theory (Parsons, 1949) and indicate that when parents share a more egalitarian pattern of domestic labour, the whole family benefits. This is consistent with a feminist approach, advocating men to support and contribute to family life, as this not only promotes marital satisfaction (Pina & Bengston, 1993) but also spills over into other family relationships. In addition, papers 1 and 3 support an ecological approach and show the importance of the microsystem of everyday household life on children's developmental outcomes.

Despite the associations found for family relationships and gender development, division of household labour was not linked to ability self-concepts. This is consistent with the lack of results for parents' attitudes and ability self-concepts, and it appears that the set of attitudes specific to sex differences in ability self-concepts are also different to the attitudes influencing parent's division of household labour.

### **Implications**

The major implication of this research is that due to the links between egalitarian gender-role attitudes and division of household labour with egalitarian gender-role attitudes in children and more positive marital, parent-child and sibling relationships, more needs to be done to encourage men to step up to these added responsibilities, and public policies should be altered to make it easier for men to take a more equal role in parenting. Having greater access to another parent means

children are better supported, leading to more positive child outcomes and family dynamics overall.

This research also shows the importance of considering the whole family in family research rather than concentrating on the most frequently examined parent-child relationship or marital relationships. In the last twenty years sibling relationships have finally been recognised as key to a child's development, over and above the influence of parents (Pike, Coldwell, & Dunn, 2005). Examining predictors and correlates of this relationship is essential in gaining a full understanding of family life. Family researchers have called for longitudinal studies with more than one child per family (e.g. Kramer & Bank, 2005), and this thesis has answered those calls. As can be seen in paper 3, siblings do not experience parenting in the same way as each other, and unravelling these differences is an imperative step in family research. This thesis also builds on the vast majority of past research that has focused on mothers' influences and the mother-child relationship, and extended it to include fathers' influences and the father-child relationship. This is particularly important given the different set of results for fathers' gender-role attitudes as opposed to mothers' in papers 1 and 2, and also the different mediation paths from division of household labour to sibling relationship quality explained through paternal hostility as opposed to maternal warmth.

Finally, all three papers show the importance of the multi-dimensional aspect of gender, as different patterns of correlates were found for division of household labour versus gender-role attitudes. In addition, although children's gendered preferences, gendered personality traits and gender-role attitudes were all modestly related, they all had unique patterns of correlates.

## Limitations

**Sample size and power calculations.** In all three papers, the same issues with the sample have been highlighted. Overall, to explore these results further, a larger sample would increase the power to detect smaller effect sizes. This is important for all three papers, as previous research has shown that when sex differences exist, they are normally of small magnitude (Lytton & Romney, 1991; Maccoby & Jacklin, 1974; Perry & Pauletti, 2011). Using the GPower program (Erdfelder, Faul, & Buchner, 1996), power was calculated for each of the main analyses of this thesis, which consisted of group mean differences (t-tests and ANOVAs), Pearson correlations and multiple regressions. Firstly, examining group mean differences for t-tests, assuming  $\alpha = .05$  and 80% power, my sample of 212 children (99 girls and 113 boys for papers 1 and 2) was able to detect an effect size of  $d = .35$  (using power = .81), which is a small to medium effect. For correlations, assuming the same alpha and power and examining the smaller girls' sample of 99, my sample was capable of detecting an effect size of  $r = .25$  (using power = .82), also a small to medium effect. Examining ANOVAs using the same alpha and power, my total sample of 212 could detect an effect size of  $f = .20$ , again a small to medium effect. Finally, a multiple regression with 12 predictors using the same alpha and power, my sample of 212 would detect an effect size of  $f^2 = .085$ , again a small to medium effect. Future research would need a sample size of 878 children to meet the desired alpha and power to detect a small effect size of  $f^2 = .02$  in a multiple regression with 12 predictors (see paper 1). In particular, a larger sample would enable detection of systematic though small interactions between child sex and child gender measures as were tested in paper 2. Finally, a larger sample at Time 2 would have enabled longitudinal structural equation modelling in paper 3. This

could then help to determine the temporal order of associations, and assess any child-parent influences on family relationships or gendered attitudes and behaviours. Although the sample size is a limitation of the thesis, it also demonstrates that the significant results found were also meaningful.

A strength of the sample was that it covered both working and middle class families, therefore extending the breadth of the research. However, a more diverse sample in regards to ethnicity would be useful as the sample was mostly white British. This is important for each of the papers as ethnic differences have been found to be an important factor in all three areas. In particular, African Americans held higher self-concepts of their ability than European Americans, which was not reflective of actual differences in ability (Stevenson, Chen, & Uttal, 1990). Research has also shown cultural differences for sibling roles, with older siblings adopting care-taker responsibilities in African and Mexican families, which could influence their relationships (Weisner, 1993). Finally, ethnicity plays a key role in parental socialisation which should be further investigated (Parke & Buriel, 2006). For example, Latino culture prioritises familism and Puerto Rican fathers have different patterns of involvement with children than in white families (Parke & Buriel, 2006). In addition, Hispanic families have been found to have more gender-typed expectations of their children than white families, which could lead to more gender-typed behaviours and more traditional gender-role attitudes in children (Raffaelli & Ontai, 2004).

**Measures.** The current research only examined children's gendered preferences and family relationships at Time 1. Future designs should keep measures consistent across time points, wherever possible, to strengthen the conclusions that can be drawn from the results. In particular, additional gender measures, including

gender-role attitudes and gendered personality traits, as well as children's ability self-concepts that are appropriate from middle-childhood through adolescence, would be important additions to the literature. This would also make longitudinal SEM models easier to compute.

Children's gender-role attitudes were measured using the children's version of the Attitudes towards Women scale (Antill, Cotton, Russell, & Goodnow, 1996) in this thesis, and Paper 2 found a link between gender-role attitudes and age, which suggests that this measure may be subject to a social desirability bias. Implicit measures are being used increasingly with child samples to examine gendered attitudes. Implicit measures 'infer mental contents from participants' performance on experimental paradigms' (Gawronski, in press, p1). For example, research by Cvencek, Meltzoff and Greenwald (2011) examined children's implicit links between maths and gender by using an implicit association test and measuring reaction times to stereotyped versus nonstereotyped scenarios. This could be extended to examine a full range of children's gender-role attitudes, including other subjects, activities, jobs and personality traits. These measures avoid the social desirability bias that may restrict the children's version of the Attitudes towards Women scale (Antill et al., 1996).

Adults' gender-role attitudes were measured by the Male-Female Relations questionnaire (Spence, Helmreich, & Sawin, 1980), which examines men and women's attitudes towards women in the workforce, what they find attractive in the opposite sex, how they act around the opposite sex, and their perceptions of gendered roles. Future research should examine specifically what parents' gendered attitudes are towards their own children. Perhaps an implicit measure examining parents' associations between gender and abilities in different subjects could be used

as an additional parental measure, and then a comparison between general attitudes and subject specific attitudes could be made to further examine influences of parents' attitudes.

**Longitudinal sample.** Although a strength of the current study was the longitudinal design, future research could extend the developmental period further into adolescence to examine whether the influences of parents are long lasting. Multiple time points allow for explanations of causality to be developed, and also trajectories of change within the life course to be mapped. Adolescence is the time when peers become increasingly important for children, as they seek more autonomy, and potentially become a conflicting influence (Steinberg, 2001); it would be of interest to examine the changes in development that this could bring. In addition, the gender intensification theory (Hill & Lynch, 1983) postulates that adolescence brings a large increase in gendered attitudes and behaviours as adolescents want to become more attractive towards the opposite sex. Therefore gender intensification could also change the influence of gendered parental attitudes and behaviours. Research examining adults' gendered attitudes and behaviours has found that family background is still an important influence (O'Shea & Kirrane, 2008). O'Shea and Kirrane (2008) argue that social learning processes develop children's gendered attitudes towards work and home life at an early age through observing parental roles, and that these attitudes persist into adulthood. In addition, O'Shea and Kirrane (2008) suggest that coming from a dual-earner family, as well as having a more highly educated father, promote more egalitarian gender-role attitudes about women in the workforce and sharing family responsibilities.

## **Additional Avenues of Future Research**

### **Other areas of influence of parents' gendered attitudes and behaviours.**

This thesis has only scratched the surface of possible influences of parents' gendered attitudes and behaviours on child development. There are various other areas that would be interesting to examine, especially those that show marked sex differences such as self-esteem (Kling, Hyde, Showers, & Buswell, 1999; see Ruble et al., 2006, for a review of this literature). For example, traditional gendered attitudes and behaviours could be linked to lower self-esteem in girls, as parents have been found to be one of the most important socialising agents for self-esteem during middle to late childhood (Harter, 2006).

**Siblings' influence on child development.** It is also important to note that parents are not the only form of family socialisation that children in middle childhood and early adolescence receive, and that siblings' gendered attitudes and behaviours may also influence children's development. Parents are a key role model in children's lives, but research over the last ten years has also explored how siblings are associated with development (McHale, Updegraff, Helms-Erikson, & Crouter, 2001). Younger siblings have often been found to use older siblings as a role model and imitation is common (Patterson, Dishion, & Bank, 1984). Vygotsky (1962) has theorised that those with more developed cognitive skills can influence children's learning, and this can be seen in the older/younger sibling roles. Siblings, especially those close in age, have been found to be very important in cognitive development as a peer role model and as a playmate to form pro-social skills and social understanding (Dunn, 2005). Research has also shown that older same-sex siblings set an example of how to behave in a gender appropriate way to a younger sibling from a very early age (Rust, Golombok, Hines, & Johnston, 2000). McHale and



colleagues (2001) extended this work to examine gendered attributes of older siblings (gender-role attitudes, gendered personality traits and gendered preferences) and found that older siblings' attributes predicted younger siblings' gendered attributes two years later, even after parental influences were controlled.

McHale et al. (2001) has shown that when examining the sibling relationship and the impact which siblings may be having on each other, it is important to also look at the whole family context, as they cannot be easily separated. Research has suggested that parents have a much larger impact on children than siblings in areas such as language and cognitive development (Brody, 1998), and McHale et al. (2001) found that for children's gender development, older siblings were more influenced by their parents and less influenced by younger siblings, and younger siblings were more influenced by older siblings than parents. Therefore it would be of interest in future research to compare the influences of siblings and parents on ability self-concepts too, to gain further understanding about the predictors of ability self-concepts given the lack of influence of parental gendered attitudes and behaviours.

**Genetic explanations.** When examining individual differences in child outcomes it is important to consider both genetic and social explanations. Previous research utilising twins has found that the genetic influence on sex-typing is stronger for girls than shared environmental influence, whereas for boys the shared environmental influence is stronger than genetic influence (Iervolino, Hines, Golombok, Rust, & Plomin, 2005; Knafo, Iervolino, & Plomin, 2005). However, both heritability and shared environment account for moderate to substantial variance in sex-typing, and it has been suggested that both genes and environment have an equal contribution for psychological characteristics (Pike & Plomin, 1999).

In the future, parents' gendered attitudes and behaviours could be incorporated into a genetically sensitive design, which would account for genetic influences whilst also assessing the influence of parents.

## **Conclusions**

Overall, this thesis has shown that parents' gendered attitudes and behaviours are important predictors of some, but not all, child developmental outcomes. The pattern of associations are dependent on the parental gendered dimension that is being examined, highlighting the importance of a multi-dimensional approach to gender, and fathers' gender-role attitudes and division of household tasks demonstrated more robust associations with child outcomes. Further, division of household labour may be a stronger predictor of child development than gender-role attitudes, suggesting that parents' actual behaviours are providing a role model for children consistent with a social learning perspective. In comparison to division of household labour, parents' gendered attitudes are less obvious to children and therefore are not as influential. Finally, contrary to functionalist theory, fathers engaging in more household labour, and participating more in the lives of their children, was positively associated with parenting, marital satisfaction and sibling relationships, stressing the importance of egalitarian family ideals for family harmony, consistent with feminist viewpoints, family systems theory, and the spill-over hypothesis.

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## **Appendices**

**Appendix A-Letter to teachers at Time 2**

7th December 2007

Dear

**Questionnaire Request**

Anneka Dawson  
 Department of Psychology  
 A.Dawson@sussex.ac.uk

I am a research student in the Department of Psychology at the University of Sussex and I am writing to ask if it would be possible for you to fill out the short questionnaire attached about the pupil named at the top. This pupil has taken part in a study that I am conducting and I have been given their parent's permission to contact you. I am exploring the impact of gender development on children's learning and examining the ways in which children adopt different learning strategies.

Previous research has stressed the importance of these issues for children in middle childhood. I am looking at the relations between children's gendered attitudes and beliefs, their orientation to learning, perceived competence in different academic subjects and their understanding of educational goals and targets. The implications of this research could be very important for the way that children approach learning and different coping strategies.

**I'm very aware of how busy you are and anticipate the questionnaire will only take around five minutes. I have enclosed a self-addressed envelope for you to return the questionnaire as soon as you can.**

I would very much appreciate your participation and would be happy to answer any further questions. In the meantime I can be contacted on the above email address.

I look forward to hearing from you.

Yours faithfully

Anneka Dawson

**contact us**

**Anneka Dawson**  
**Research student**

Department of Psychology  
 University of Sussex, Brighton  
 BN1 9QH  
 United Kingdom

**Tel: 07765254516**  
 A.Dawson@sussex.ac.uk  
 www.sussex.ac.uk

## Appendix B-Pre-School Activities Inventory (Golombok & Rust, 1993).

### Your Children's Activities

The following section is about your children's everyday activities. It is in three sections: toy preferences, activities, and characteristics. Please indicate how frequently *each* child plays with particular toys, engages in particular activities or shows particular characteristics on a scale of 1 (never) to 5 (very often).

Please answer all the questions. If you are unsure about which response best describes your child, please answer according to the response that seems *most* appropriate.

**a. Child 1 – Name:** \_\_\_\_\_

#### **i. Toys**

How often has your child played with the following toys during the past month?

	<b>Never</b>	<b>Hardly Ever</b>	<b>Sometimes</b>	<b>Often</b>	<b>Very Often</b>
1. Guns (or used objects as guns)	1	2	3	4	5
2. Jewellery	1	2	3	4	5
3. Tool set	1	2	3	4	5
4. Dolls, dolls' clothes, or doll's pram	1	2	3	4	5
5. Trains, cars or aeroplanes	1	2	3	4	5
6. Swords (or used objects as swords)	1	2	3	4	5
7. Tea set	1	2	3	4	5

#### **ii. Activities**

How often has your child engaged in the following activities over the past month?

	<b>Never</b>	<b>Hardly Ever</b>	<b>Sometimes</b>	<b>Often</b>	<b>Very Often</b>
1. Playing house (e.g., cleaning, cooking)	1	2	3	4	5

		<b>Never</b>	<b>Hardly Ever</b>	<b>Sometimes</b>	<b>Often</b>	<b>Very Often</b>
2.	Playing with girls	1	2	3	4	5
3.	Pretending to be a female character (e.g., princess)	1	2	3	4	5
4.	Playing at having a male occupation (e.g., soldier)	1	2	3	4	5
5.	Fighting	1	2	3	4	5
6.	Pretending to be a family character (e.g., parent)	1	2	3	4	5
7.	Sports and ball games	1	2	3	4	5
8.	Climbing (e.g., fences, trees, gym equipment)	1	2	3	4	5
9.	Playing at taking care of babies	1	2	3	4	5
10.	Showing interest in real cars, trains and aeroplanes	1	2	3	4	5
11.	Dressing up in girlish clothes	1	2	3	4	5

### iii. Characteristics

How often has your child showed the following characteristics during the past month?

		<b>Never</b>	<b>Hardly Ever</b>	<b>Sometimes</b>	<b>Often</b>	<b>Very Often</b>
1.	Likes to explore new surroundings	1	2	3	4	5
2.	Enjoys rough and tumble play	1	2	3	4	5
3.	Shows interest in snakes, spiders and insects	1	2	3	4	5
4.	Avoids getting dirty	1	2	3	4	5
5.	Likes pretty things	1	2	3	4	5
6.	Avoids taking risks	1	2	3	4	5

### Appendix C-Who Does What? Questionnaire (Cowan & Cowan, 1990)

#### Who Does What?

This section asks about how you and your partner divide various family tasks. Please circle the number next to each statement that best describes how the tasks are divided between you and your partner.

#### 1. Family Tasks

		She does it all			We both do this about equally			He does it all		
1.	Planning and preparation of meals	1	2	3	4	5	6	7	8	9
2.	Cleaning up after meals	1	2	3	4	5	6	7	8	9
3.	Repairs around the home	1	2	3	4	5	6	7	8	9
4.	Cleaning the house	1	2	3	4	5	6	7	8	9
5.	Taking out the rubbish	1	2	3	4	5	6	7	8	9
6.	Buying groceries, household needs	1	2	3	4	5	6	7	8	9
7.	Paying bills	1	2	3	4	5	6	7	8	9
8.	Doing the laundry (washing and ironing)	1	2	3	4	5	6	7	8	9
9.	Writing letters/making calls to family and friends	1	2	3	4	5	6	7	8	9
10.	Looking after the car	1	2	3	4	5	6	7	8	9
11.	Providing income for our family	1	2	3	4	5	6	7	8	9
12.	Caring for garden, plants	1	2	3	4	5	6	7	8	9
13.	Working outside family	1	2	3	4	5	6	7	8	9

## 2. Making Decisions

This section asks about how much influence you and your partner have in various family decisions. Please circle the number next to each statement that best describes how much influence you both have in family decisions.

		<b>She does it all</b>			<b>We both do this about equally</b>			<b>He does it all</b>		
1.	How we spend time at home	1	2	3	4	5	6	7	8	9
2.	How we spend time out of the house	1	2	3	4	5	6	7	8	9
3.	Deciding which friends and family to see and when	1	2	3	4	5	6	7	8	9
4.	Deciding about holidays: when, where, expenses	1	2	3	4	5	6	7	8	9
5.	Deciding about major expenses (e.g., house, car, furniture)	1	2	3	4	5	6	7	8	9
6.	Deciding about financial planning (e.g., insurance, loans, saving)	1	2	3	4	5	6	7	8	9
7.	Deciding when and how much both partners should work outside the family	1	2	3	4	5	6	7	8	9
8.	Deciding about religious practices in our family	1	2	3	4	5	6	7	8	9
9.	Deciding about involvement in community activities	1	2	3	4	5	6	7	8	9
10.	Deciding about how people should behave toward one another in our family	1	2	3	4	5	6	7	8	9

### 3. General Child-care

This section asks about aspects of caring for the children taking part in this study.

Please circle the number next to each statement which best describes how you and your partner divide child-care.

a. Child 1: \_\_\_\_\_

	She does it all			We both do this about equally			He does it all		
1. Reading to our child	1	2	3	4	5	6	7	8	9
2. Preparing meals for our child	1	2	3	4	5	6	7	8	9
3. Dressing our child	1	2	3	4	5	6	7	8	9
4. Supervising our child's bathing habits	1	2	3	4	5	6	7	8	9
5. Deciding whether or how to respond to our child's distress	1	2	3	4	5	6	7	8	9
6. Getting up at night with our child	1	2	3	4	5	6	7	8	9
7. Taking our child out for recreation	1	2	3	4	5	6	7	8	9
8. Playing with our child	1	2	3	4	5	6	7	8	9
9. Arranging for babysitters or childcare	1	2	3	4	5	6	7	8	9
10. Dealing with the doctor regarding our child's health	1	2	3	4	5	6	7	8	9
11. Getting our child to and from school	1	2	3	4	5	6	7	8	9
12. Tending to our child in public (e.g., shopping, playgrounds, restaurants)	1	2	3	4	5	6	7	8	9
13. Setting limits for our child	1	2	3	4	5	6	7	8	9
14. Disciplining our child	1	2	3	4	5	6	7	8	9
15. Teaching our child/helping with homework	1	2	3	4	5	6	7	8	9



## Appendix D-Male-Female Relations questionnaire (Spence, Helmreich & Sawin, 1980).

### Women's version

#### Your Ideas

The statements below describe feelings and reactions that you might have. Please answer each statement by indicating how strongly you *agree* or *disagree* with each statement on a scale of 1 (strongly agree) to 5 (strongly disagree).

		Strongly				Strongly
		Agree				Disagree
1.	I'd rather have a man as a boss at work than a woman	1	2	3	4	5
2.	I don't have much respect for a man who allows himself to be led around by his wife or girlfriend even if it's not done obviously	1	2	3	4	5
3.	When men and women are in the same organisation, women should let the men take the lead and not try to take over	1	2	3	4	5
4.	When there's an important job to be done, I'd prefer to have a man as leader than a woman	1	2	3	4	5
5.	I like men who act assertive and independent	1	2	3	4	5
6.	Women who are very assertive and independent don't have the concern about other people that most women have	1	2	3	4	5
7.	The kind of man I like best is rugged and masculine	1	2	3	4	5
8.	When I'm with women I'm trying to impress, I try to act very feminine	1	2	3	4	5
9.	Masculine men who make me feel they can take care of me turn me on	1	2	3	4	5
10.	I prefer to defer to a man rather than trying to be his equal all the time	1	2	3	4	5
11.	When I'm with a man I want to impress, I try to act very feminine	1	2	3	4	5
12.	I sometimes treat men as if they were stronger and smarter than they really are	1	2	3	4	5
13.	It's all right for women to be affectionate with their female friends but I don't particularly like men to show affection toward their male friends	1	2	3	4	5

14.	I wouldn't like men to think of me as an assertive, independent person	1	2	3	4	5
15.	When I'm playing a sport with a man, I feel better about him if he wins	1	2	3	4	5
16.	I'm more likely to swear or use obscenities when in the company of other women than in mixed company	1	2	3	4	5
17.	I would not like people to think of me as unfeminine	1	2	3	4	5
18.	When I'm around men, I'm likely to act more helpless than I really feel	1	2	3	4	5
19.	I don't like a man who lets me dominate him	1	2	3	4	5
20.	I sometimes try to get my way by acting 'feminine'	1	2	3	4	5
21.	One of my jobs should be to help my partner in his work by taking the pressure off him at home	1	2	3	4	5
22.	If my partner and I both worked, I would realise that his job came first	1	2	3	4	5
23.	I would expect to defer to my partner's judgment in most matters	1	2	3	4	5
24.	I think my partner should be emotionally stronger and tougher than I am	1	2	3	4	5
25.	In my home, my most important job should be to provide my partner and our children with emotional support and my partner's should be to provide me and our children with financial support	1	2	3	4	5
26.	I think my partner should take the leadership in making important decisions	1	2	3	4	5
27.	Even if I worked, I would expect to take major responsibility for running the house	1	2	3	4	5
28.	Expect for pressing financial reasons, I would prefer not to work, at least until the children leave primary school	1	2	3	4	5
29.	If I worked, I would expect to be the one to stay home when one of our children is sick	1	2	3	4	5
30.	I would expect my partner to be 'head of the house' simply because he's a man	1	2	3	4	5

## Appendix E-Male-Female Relations questionnaire (Spence, Helmreich & Sawin, 1980).

### Men's version

#### Your Ideas

The statements below describe feelings and reactions that you might have. Please answer each statement by indicating how strongly you *agree* or *disagree* with each statement on a scale of 1 (strongly agree) to 5 (strongly disagree).

		Strongly Agree				Strongly Disagree	
		1	2	3		4	5
1.	I'd rather have a man as a boss at work than a woman	1	2	3		4	5
2.	I don't have much respect for a man who allows himself to be led around by his wife or girlfriend even if it's not done obviously	1	2	3		4	5
3.	When men and women are in the same organisation, women should let the men take the lead and not try to take over	1	2	3		4	5
4.	When there's an important job to be done, I'd prefer to have a man as leader than a woman	1	2	3		4	5
5.	I don't like women who act assertive and independent	1	2	3		4	5
6.	Women who are very assertive and independent don't have the concern about other people that most women have	1	2	3		4	5
7.	The kind of woman I like best is soft and feminine	1	2	3		4	5
8.	When I'm with a woman I want to impress, I try to act very masculine	1	2	3		4	5
9.	Feminine women who make me feel that I should take care of them turn me on	1	2	3		4	5
10.	I prefer a woman who defers to me rather than trying to be my equal all the time	1	2	3		4	5
11.	When I'm with men I want to impress, I try to act very masculine	1	2	3		4	5
12.	When a woman is very smart, I like her better if she doesn't let it show too much around me	1	2	3		4	5
13.	If I tried to be very kind and aware of other people's feelings, it would make me too soft to be a good leader	1	2	3		4	5

14.	I wouldn't like other men to think of me as a very sensitive person	1	2	3	4	5
15.	When I'm around other men, I'm likely to act tougher and more indifferent to others	1	2	3	4	5
16.	I prefer women who dress in feminine styles	1	2	3	4	5
17.	Women who are very good at things that are important to me make me feel uncomfortable	1	2	3	4	5
18.	Losing an argument to a woman is more annoying than losing to a man	1	2	3	4	5
19.	It's important to me as a man not to let it show when something relatively unimportant upsets me	1	2	3	4	5
20.	It's important to me not show emotional weakness, no matter how I feel	1	2	3	4	5
21.	One of my partner's jobs should be to help me in my work by taking the pressure off me at home	1	2	3	4	5
22.	If my partner and I both worked, I would expect her to realise that my job came first	1	2	3	4	5
23.	I would expect my partner to defer to my judgment in most matters	1	2	3	4	5
24.	I think I should be emotionally stronger and tougher than my partner	1	2	3	4	5
25.	In my home, my most important job should be to provide financially for my family and my partner's should be to provide me and our children with emotional support	1	2	3	4	5
26.	I think I should take the leadership in making important decisions	1	2	3	4	5
27.	Even if my partner worked, I would expect her to take the major responsibility for running the house	1	2	3	4	5
28.	Expect for pressing financial reasons, I would prefer my partner not to work, at least until the children leave primary school	1	2	3	4	5
29.	If my partner worked, I would expect her to be the one to stay home when one of our children is sick	1	2	3	4	5
30.	I would expect to be 'head of the house' simply because I'm a man	1	2	3	4	5

## Appendix F-Children's Gendered Preferences at Time 2

### Things you would like to do

Here are different sorts of activities and different sorts of jobs that people do. Have a look and think about how much YOU would like to do each one.

How much would you like to:

		Not at all	Not very much	Quite a lot	A lot
1	Be a mechanic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Do cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Talk on the phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Play drums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Be a nurse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Play the flute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Play computer games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Do ballet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Be a doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Play football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Not at all	Not very much	Quite a lot	A lot
11	Be a secretary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Play netball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Play rugby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Play cricket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Go shopping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Be a teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Be a carpenter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Do reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Fix things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Do Martial arts like Karate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix G-The Children's Attitudes towards Women scale (Antill, Cotton, Russell &  
Goodnow, 1996)**

**Your opinions**

We want to know your opinions about men and women. How much do you agree or disagree with each statement

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
1. It is worse for a woman to swear than it is for a man.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. If a woman has a paid job (she goes out of the home to work), then a man should share in doing the housework (washing the dishes, doing the laundry, and cleaning the house).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. When people get married, women should promise to do what their husbands want.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Women should pay more attention to being good wives and mothers instead of wanting good, well-paid jobs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Women should be able to have highly-paid and important jobs, like being bank managers, doctors, and airline pilots.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. A woman should be able to go exactly the same places and have the same freedom as a man has.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Sons in a family should be given more help to go to University than daughters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. It is silly for a woman to drive a truck and for a man to do laundry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. In a family, the father should be the one who decides how the children are brought up and how they are treated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Men should be the leaders (be the politicians and the bosses), and make most of the decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. It's better for a woman to do what she likes and go where she likes than to try to be ladylike.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. For many important jobs, it is better to choose men instead of women.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Women should be able to get jobs as plumbers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Girls should be allowed to play sports like football and baseball.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Boys should do jobs around the house like washing dishes and setting the table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Boys should be allowed to do things like ballet and dance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Girls should do jobs around the house like mow the lawn and shovel snow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Girls should be allowed to have toys like model trains and cars.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Boys should be allowed to have toys like dolls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



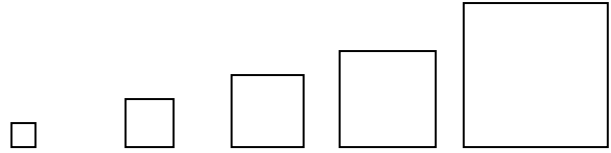
## Appendix H-The Antill trait questionnaire (Antill, Russell, Goodnow & Cotton, 1993)

### What you are like

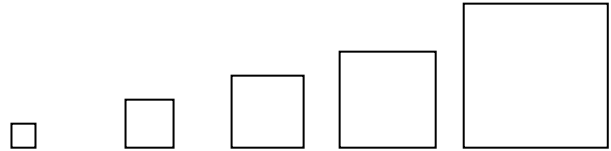
Below are words which describe different kinds of people. How often do you think you behave in the way each of the words describes.

	Never	Not Very much	Some- times	Quite a lot	Most of the time
1. <b>Competitive:</b> This is the sort of person who tries hard to win and doesn't like other people to beat her.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <b>Gentle:</b> This is the sort of person who is careful not to hurt other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <b>Adventurous:</b> This is the sort of person who will go on adventures even though it might be dangerous; who likes to explore new things even though she may not know what could happen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <b>Considerate:</b> This is the sort of person who thinks about what other people might want; who cares how other people might feel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. <b>Athletic:</b> This is the sort of person who likes to play sports and is good at them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

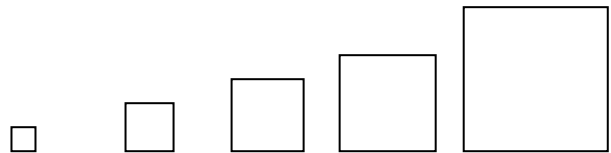
- 6 **Sensitive to Others' Needs:** This is the sort of person who knows when another person is feeling bad and tries to help them feel better.



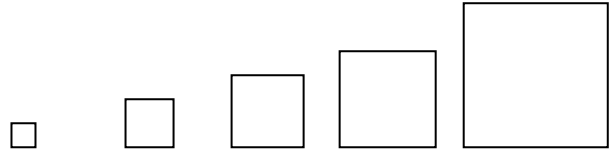
- 7 **Independent:** This is the sort of person who wants to do things for herself; she will try to do things by herself instead of asking for help.



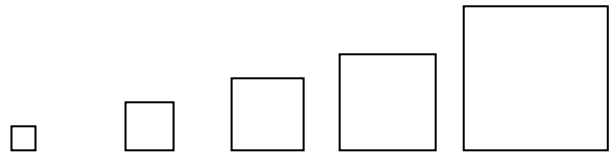
- 8 **Helpful:** This is the sort of person who likes to help other people; who likes to help them do jobs or helps them when they can't do something.



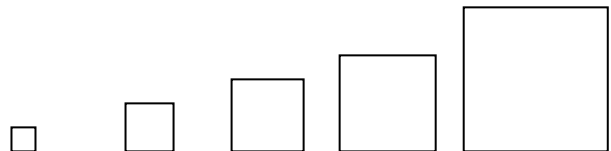
- 9 **Brave:** This is the sort of person who is not scared of things; who is not afraid to do things that might hurt.



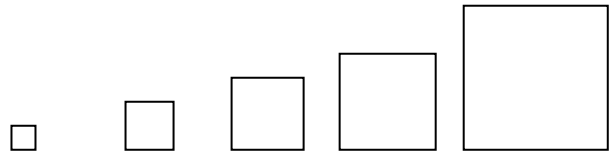
- 10 **Patient:** This is the sort of person who will wait calmly for something; like waiting in a line or waiting for dinner without getting angry or fidgety.



- 11 **A Leader:** This is the sort of person who will be in charge of things; the sort of person other people will follow, listen to, or pay attention to.



- 12 **Courteous:** This is the sort of person who has good manners and is polite to other people.



### Appendix I- Children's and teachers' ability questions (Eccles & Wigfield, 1995)

#### What I am like at school

This next bit is about what you are like at school and the different subjects you do.  
If you were to list all the children in your class from best to worst in the following subjects where are you?

	One of the worst			In the middle			The best
	1	2	3	4	5	6	7
Maths							
English							
Sports							

Name of teacher: \_\_\_\_\_ Name of child: \_\_\_\_\_ Year: \_\_\_\_\_

Compared to other children, how much innate ability or talent does this child have in each of the following activities?

	Very Little						A lot
	1	2	3	4	5	6	7
Maths							
English							
Sports							

## Appendix J-The Berkley Puppet Interview Sibling Scales (BPI; Ablow & Measelle, 1993)

### Practice Items

A Iggy: I like chocolate.

**Ziggy: I don't like chocolate.**

B **Ziggy: I don't like to play in the park.**

Iggy: I like to play in the park.

C Iggy: I have one brother and one sister.

**Ziggy: I have one sister.**

.....

1. Iggy: I like my [brother / sister].

**Ziggy: I don't like my [brother / sister].**

2. **Ziggy: I don't get cross when my [brother / sister] plays with my toys.**

Iggy: I do get cross when my [brother / sister] plays with my toys.

4. **Ziggy: My mum is nicer to me.**

Iggy: My mum is nicer to my [brother/ sister].

5. **Ziggy: I like to tease my [brother / sister].**

Iggy: I don't like to tease my [brother / sister].

7. **Ziggy: When I'm at home, I like to play with my [brother / sister].**

Iggy: When I'm at home, I like to play alone.

10. **Ziggy: My [brother / sister] doesn't hate me.**

Iggy: My [brother / sister] hates me.

14. **Ziggy: My dad is nicer to my [brother / sister].**

Iggy: My dad is nicer to me.

16. **Ziggy: My [brother / sister] likes me.**

Iggy: My [brother / sister] doesn't like me.

17. Iggy: I don't like having a [brother / sister].

**Ziggy: I like having a [brother / sister].**

19. **Ziggy: I don't let my [brother / sister] play in my room (on my bed).**

Iggy: I do let my [brother / sister] play in my room (on my bed).

22. Iggy: My [brother / sister] gets to do more special things than I do.

**Ziggy: I get to do more special things than my [brother / sister].**

23. **Ziggy: When I have a friend over, I let my [brother / sister] play with us.**

Iggy: When I have a friend over, I don't let my [brother / sister] play with us.

24. **Ziggy: I get cross at my [brother / sister].**  
Iggy: I don't get cross at my [brother / sister].
25. Iggy: I don't tell my [brother / sister] what to do.  
**Ziggy: I do tell my [brother / sister] what to do.**
28. **Ziggy: I think that my [brother / sister] is a special person.**  
Iggy: I don't think that my [brother / sister] is a special person.
30. Iggy: My dad has more fun with my [brother / sister].  
**Ziggy: My dad has more fun with me.**
31. **Ziggy: My mum has more fun with my [brother / sister].**  
Iggy: My mum has more fun with me.
34. Iggy: My [brother / sister] and I argue  
**Ziggy: My [brother / sister] and I don't argue.**
36. Iggy: My mum spends more time with me.  
**Ziggy: My mum spends more with my [brother / sister].**
38. Iggy: My [brother / sister] is fun to play with.  
**Ziggy: My [brother / sister] is not fun to play with.**
39. **Ziggy: My dad spends more time with me.**  
Iggy: My dad spends more time with my [brother / sister].
43. **Ziggy: When my [brother / sister] and I argue, my parents shout at me.**  
Iggy: When my [brother/ sister] and I argue, my parents shout at my [brother/ sister].

## Appendix K-The Berkley Puppet Interview Parent Scales (BPI; Ablow & Measelle, 1993)

### Warmth and Enjoyment

3. Iggy: My mum says she loves me.  
**Ziggy: My mum doesn't say she loves me.**
8. Iggy: My dad doesn't say he loves me.  
**Ziggy: My dad says he loves me**
11. Iggy: My mum hugs and kisses me.  
**Ziggy: My mum doesn't hug and kiss me.**
13. **Ziggy: My dad doesn't like to cuddle me.**  
Iggy: My dad likes to cuddle me.
18. **Ziggy: My mum is nice to me.**  
Iggy: My mum is not nice to me.
21. **Ziggy: My dad and I have fun together.**  
Iggy: My dad and I don't have fun together.
27. Iggy: My mum doesn't like to play with me.  
**Ziggy: My mum likes to play with me.**
32. **Ziggy: My dad doesn't hug and kiss me.**  
Iggy: My dad hugs and kisses me.
35. **Ziggy: My mum doesn't like to cuddle me.**  
Iggy: My mum likes to cuddle me.
37. **Ziggy: My dad is not nice to me.**  
Iggy: My dad is nice to me.
42. Iggy: My mum and I have fun together.  
**Ziggy: My mum and I don't have fun together.**
44. Iggy: My dad doesn't like to play with me.  
**Ziggy: My dad likes to play with me.**

### Anger and Hostility

6. Iggy: My mum is not mean to me.  
**Ziggy: My mum is mean to me.**
9. Iggy: My dad doesn't shout at me a lot.  
**Ziggy: My dad shouts at me a lot.**
12. Iggy: Sometimes my mum tells me I'm naughty. (*a lot, not a lot*)  
**Ziggy: My mum doesn't tell me that I'm naughty.**
15. Iggy: My dad doesn't shout at me when he is cross.  
**Ziggy: My dad shouts at me when he is cross.**
20. Iggy: My mum does get cross with me a lot.  
**Ziggy: My mum doesn't get cross with me a lot.**
26. **Ziggy: When my dad is cross, he doesn't smack me.**  
Iggy: When my dad is cross, he smacks me.
29. **Ziggy: My mum shouts at me a lot.**  
Iggy: My mum doesn't shout at me a lot.
33. **Ziggy: My dad is mean to me.**  
Iggy: My dad is not mean to me.
40. Iggy: My mum doesn't shout at me when he is cross.  
**Ziggy: My mum shouts at me when he is cross.**
41. **Ziggy: My dad gets cross with me a lot.**  
Iggy: My dad doesn't get cross with me a lot.
45. **Ziggy: When my mum is cross, she smacks me.**  
Iggy: When my mum is cross, she doesn't smack me.
46. Iggy: My dad doesn't tell me that I'm naughty.  
**Ziggy: Sometimes my dad tells me that I'm naughty. (*a lot, not a lot*)**

1. This section is about your relationship with your partner. Please read each statement carefully and circle the response which best describes how you feel about your relationship with your partner. Please respond to every statement – if none of the responses seem completely accurate, circle the one which you feel is most appropriate. Do not spend too long on each question. Please answer this section without discussing them with your partner.

		Strongly		Strongly	
		Disagree	Disagree	Agree	Agree
1.	My partner is usually sensitive to and aware of my needs	1	2	3	4
2.	I really appreciate my partner's sense of humour	1	2	3	4
3.	My partner doesn't seem to listen to me any more	1	2	3	4
4.	My partner has never been disloyal to me	1	2	3	4
5.	I would be willing to give up my friends if it mean saving my relationship	1	2	3	4
6.	I am dissatisfied with our relationship	1	2	3	4
7.	I wish my partner was not so lazy and didn't keep putting things off	1	2	3	4
8.	I sometimes feel lonely even when I am with my partner	1	2	3	4
9.	If my partner left me life would not be worth living	1	2	3	4
10.	We can 'agree to disagree' with each other	1	2	3	4
11.	It is useless carrying on with a marriage beyond a certain point	1	2	3	4



12.	We both seem to like the same things	1	2	3	4
13.	I find it difficult to show my partner that I am feeling affectionate	1	2	3	4
14.	I never have second thoughts about our relationship	1	2	3	4
15.	I enjoy just sitting and talking with my partner	1	2	3	4
16.	I find the idea of spending the rest of my life with my partner rather boring	1	2	3	4
17.	There is plenty of 'give and take' in our relationship	1	2	3	4
18.	We become competitive when we have to make decisions	1	2	3	4
19.	I no longer feel that I can really trust my partner	1	2	3	4
20.	Our relationship is still full of joy and excitement	1	2	3	4
21.	One of us is continually talking and the other is usually silent	1	2	3	4
22.	Our relationship is continually evolving	1	2	3	4
23.	Marriage is really more about security and money than about love	1	2	3	4
24.	I wish there was more warmth and affection between us	1	2	3	4
25.	I am totally committed to my relationship with my partner	1	2	3	4
26.	Our relationship is sometimes strained because my partner is always correcting me	1	2	3	4
27.	I suspect we may be on the brink of separation	1	2	3	4
28.	We can always make up quickly after an argument	1	2	3	4