

**The Influence of Age, Sex and Coeducation on Gender Cleavage and
Friendship Quality During Childhood and Adolescence.**

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STATEMENT

I declare that this thesis is my own work and that, to the best of my knowledge and belief, it does not contain material from published sources without proper acknowledgement, nor does it contain material which has been accepted for the award of any other higher degree or graduate diploma in any university.

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LITERATURE REVIEW

**The Role of Methodological, Individual-Level and Environmental Factors in
Gender Cleavage in Children's Perceptions of Friendship.**

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Abstract

The review aims to outline the theoretical background, methodological issues and the grade-related and sex differences in two main research areas of children's friendship, namely friendship choice and friendship quality. Gender cleavage is the propensity of children to choose, and rate more positively friends of the same-gender. Theoretical accounts of the establishment and maintenance of gender cleavage have focused largely on individual-level factors as the driving force behind this phenomenon and to a lesser extent, group processes. This review argues that, at a broader level, it is possible that environmental factors such as the gender composition of the school might influence gender cleavage. Friendship quality research investigates the thoughts, feelings and concepts children and adolescents have about their friends. Research within this area has concentrated on same-gender friendships and little research has been carried out in relation to children's and adolescent's perceptions of their opposite-gender peers compared to their same-gender peers. Friendship qualities in opposite-gender peers have also not been widely or systematically examined across sex or age. As in the gender cleavage research it is important to investigate how ideas of friendship quality may be related to opposite-gender and same-gender friendship choices in gendered school environments. The review concludes that the two major areas of friendship research namely friendship choice and quality have developed separately and that there may be important connections between children's expectations and their actual friendship choices.

Peer relations research has focused on two distinctive aspects of children's peer relationships namely status and friendship. This review aims to outline the theoretical background and methods of studying these distinct areas and will then canvas the two main themes in friendship research; friendship choice and friendship quality. The theoretical background of both areas, methodological issues, and the influence of age and gender on children's friendship choices and perceived quality of these relationships are reviewed. Finally, the relationships between the two areas are discussed with possible directions for future research.

The Importance of Peers in Children's Social-Emotional Development

It has been widely recognized that peer relationships are important on a number of levels. Children's peers contribute to their social and emotional adjustment, academic competence and self-concept (Vandell & Hembree 1994; Hartup 1996; Bukowski, Hoza & Boivin 1993a). For example, peers make important additions to social development as they give children the chance to learn reciprocal behaviours such as help, sharing and support (Hartup, 1992). Menesini (1997) found that boys and girls who have reciprocated friendships estimated their own prosocial behaviour as being higher than that of children without reciprocal friendships. They concluded that prosocial behaviours learned in specific friendships can become behaviours that generalise across a range of relationships.

Relationships with peers are different to relationships with parents, and each type of relationship has a unique contribution to make in children's social-emotional development. Peer relationships are also unique because they are based on equality, reciprocity and mutual relations. One major parental role is to teach children the

rules and limitations of society. Nonetheless the relationship is not one based on equality. In contrast, children's relationship with their peers allows children to learn interpersonal skills with an equal (Youniss, 1980). Peer and parental relationships have a differential impact at various ages. In studies of children and adolescents' social networks, parental influences decrease with age and same-gender friends become increasingly important as sources of support especially in adolescence (Furman & Buhrmester, 1992; Lynch & Cicchetti, 1997). In another study by Furman and Buhrmester (1985), children reported that they have more power in their relationships with peers than they do in the relationships with parents. Parents, particularly mothers, are important for affection and enhancement of self-worth, while friends provide the highest levels of companionship. Both parents and friends receive high ratings for intimacy. Hartup (1978) concluded that a secure, effective parent-child relationship may provide the foundation for subsequent successful peer relations.

Research has focused on two distinctive aspects of children's peer relationships namely status and friendship. Status can be equated to popularity or the degree of acceptance a child receives from a group of peers. Researchers have found that children can be classified according to a range of sociometric status categories, reflecting peer acceptance. These classifications include ratings for popular, average, controversial, rejected and neglected categories (Coie, Dodge & Coppotelli, 1982; Newcomb & Bukowski, 1983). Friendship on the other hand is a distinctive peer relationship and refers to mutual, dyadic affiliation children experience with a specific peer (Bukowski, Hoza & Boivin 1993b). Friendship encompasses a bond between two peers, whereas peer status describes a wider relationship of the

individual to the group. It is important to investigate both types of peer relationships because status within the peer group and friendship relationships has unique contributions to make in children's social-emotional development (Vandell & Hembree, 1994). If a child is neglected or rejected by their peers this may have negative consequences such as poor socio-emotional adjustment and self-concept, and poor academic performance. Conversely, having friends contributes positively to children's social and academic progress (Price & Dodge, 1989). Furman and Robbins (1985) proposed a model outlining the 'social provisions' status and friendship can supply for children. Children may receive from and give to their friends affection and intimacy, and consider their friends to be reliable allies. Both friends and members of their peer group may provide companionship, support and nurturance in relationships while the peer group alone uniquely contributes a sense of inclusion for individual children.

Friendship and status are two separate entities but are inextricably linked because both make a contribution to a child's feeling of social satisfaction (Parker & Asher, 1993). It is important not to confound status and friendship. However, children who are popular may not have a mutual dyadic friendship and children who are unpopular in the group may enjoy a friendship (Vandell & Hembree, 1994). Nonetheless, unpopular children with best friends report lower levels of friendship quality than do their more popular peers (Parker & Asher, 1993). Unpopular children are also less likely than popular children to have at least one reciprocal friend and their friendship networks contain fewer same-age, and opposite -gender friends and fewer popular children (George & Hartmann, 1996). Friendships become increasingly important from early adolescence and can act as "important mediators

between experience at the level of the group and adjustment during early adolescence” (Bukowski et al., 1993b, p. 35). Having a good friend can act as a safeguard from loneliness for children who are unpopular with the group. Thus, to effectively study peer relationships it is important to investigate the impact of both status and friendship.

Friendship is a relationship between two people that must be distinguished from another kind of peer relationship namely acquaintanceship. Newcomb and Bagwell’s (1995) meta-analytic review summarised the essential differences between friends and acquaintances. Friendships when compared to acquaintances are “characterised by more intense social activity, more frequent conflict resolution, and more effective task performance” (1995, p. 306). Friends generally spend more time together and their relationship is typified by loyalty and intimacy. Friends are also more similar to one another and their relationship is characterised by less domination and competition than with acquaintances. In situations of potential conflict friends will spend more time negotiating and are more willing to compromise (Fonzi, 1997). Furman and Bierman (1984) found that children from Grades 2 to 6 differentiated between friends and acquaintances, and the degree of differentiation increased with age. Children see friends as peers who provide help and with whom they engage in common activities. As children get older, common activities become less salient and intimacy becomes increasingly important. The strongest friendships are those where both children choose each other as best friends (Hallinan, 1979). However, one child might nominate a peer as a best friend and this nomination not be reciprocated. In Newcomb and Bagwell’s review both unilateral and reciprocated friendships were

included. Berndt and Perry's (1986) research showed that children rate more highly their reciprocated and stable friendships than their acquaintances and nonstable friends. Bukowski, Hoza and Boivin's (1994) research found that children in reciprocated dyads also rate more highly the quality of their relationship as compared to non-reciprocated relationships.

Methods of Studying Peer Relationships

There are two major approaches to investigating children's peer relations; observational and sociometric methods. Status and friendship can be measured by both observation and sociometric techniques and there are advantages and disadvantages to each method. Essentially observational techniques allow recording of children's actual behaviours in peer groups while sociometric techniques are verbal. Children are asked to nominate whom they like to play with or how much they like specific peers.

The two major sociometric techniques used to measure both status and friendships in peer relationships are nominations and ratings. Nomination techniques require children to choose peers according to interpersonal criteria such as best friend, and the most popular student/s in the class. The sum of nominations each child receives can be used to measure status. Nominations can be positive or negative, for example, "Name three children you like to play with and three children you don't like to play with." A traditional nomination technique limits the number of friends a child can nominate to three choices. This method typically applies to same-gender friends but can also be used to nominate opposite-gender friends. The nomination technique is frequently used in school settings and children are usually

asked to nominate children from within their class group. There are methodological limitations in such restrictions because children have friends outside their immediate classroom at school and outside the school environment (Smith & Inder, 1990).

Limiting the number of nominations children are allowed to make can also exaggerate gender bias because children will usually nominate same-gender friends first. The limited choice might mean that only same-gender friends are reported and lower priority opposite-gender friends are not reported. Researchers in children's friendships have concentrated on same-gender friendships to the extent that this has become the norm in the research (Dweck, 1981; Daniels-Bierness, 1989).

In sociometric ratings children are asked to rate their peers across different criteria. A five-point Likert scale is commonly used to indicate children's attitudes towards individual friends and group members. When a child receives a rating from each of his peers in the group the results give an indication of individual children's status within the group. Ratings have also been used as indicators of friendship (Berndt & Perry, 1986). However, Bukowski and Hoza (1989) argue that high ratings do not necessarily indicate friendship, since ratings do not fulfill the criterion of reciprocity. Moreover, the number of positive nominations received from the group can measure status but it does not necessarily follow that a child with a high number of positive nominations will receive a lot of peer attention or have friends (Vandell & Hembree, 1994). Reciprocal nominations are considered to be a more stable measure of friendship than unilateral nominations (Bukowski & Newcomb, 1984). The correlation between peer nominations and ratings is strong (Hoza, Bukowski & Gold, 1987, cited in Bukowski & Hoza, 1989).

Bukowski and Hoza (1989) advocate measuring children's friendships through reciprocal nominations and suggest a three-level approach which answers the following questions. First, does the child have one specific friend? Second, how many friends does he/she have? Third what is the quality of the friendship? To examine children's friendships these authors argue that it is important to use a combination of sociometric methods and to investigate the quality of the relationship, for example the degree of companionship and support the friendship provides.

Observational techniques are also important tools for investigating peer relationships. While sociometric techniques provide information about children's choices, observational techniques measure what children actually do. Singleton and Asher (1977) in a study of peer preference and social interaction between black and white school children found that when sociometric nomination was limited children did not choose cross-race friends suggesting little interaction between the races. However, observation indicated "a generally positive picture of interracial association" (p. 336). These authors commented that racial cleavage was not as strong in their study as in previous research, and postulated that the different findings were, in part, related to a different research method. Instead of using a traditional limited nomination technique children were asked to rate every other child in the class using a roster-and-rating technique. Thus, Singleton and Asher argue that limited nomination sociometric measures might have painted an exaggerated negative view of children's interracial interactions.

Schofield and Whitley's (1983) meta-analytic review found stronger racial cleavage when using the peer nomination technique when compared to a roster-and-rating technique. They contend that peer nomination may be useful in assessing

friendships and that roster-and-rating techniques may be more useful for assessing status within the group. Schofield and Whitley argue that it is important not to rely solely on one technique for investigating peer relationships.

Sociometric and observational techniques often complement each other (Hayden-Thomson, Rubin & Hymel, 1987). However, a limitation of observational techniques is that they only focus on a few observable features of peer relationships (Berndt, 1986) and do not show children's own perceptions. Observational techniques do not reflect opinions or take into account the cognitive factors that may drive friendship choice. For example, a child may be rejected by a group, and not interact with children he/she feels friendly towards. It is therefore important to use observational techniques in conjunction with other techniques. For example, Berndt (1986) recommends the use of interview and observational techniques, and such measures as the preference for interaction with same-gender peers. Bukowski and Hoza (1989) and Schofield and Whitley (1983) recommend a multi-method approach to investigating peer relations, combining observational data, sociometric techniques and reports from a wide variety of sources, parents, teachers and the children themselves.

Gender Cleavage in Children's Peer Relations

Sociometric studies have established that many factors may affect friendship choice. For example, peer similarity is an important factor (Hartup, 1996) which has shown that children tend to choose friends of same gender, similar age, race, and intellectual ability to themselves (Berndt, 1982). Of these factors gender is more important than age or race in the selection of friends (Hallinan, 1992). Research has

consistently found that same-gender friends are nominated significantly more often than are opposite-gender friends (Asher & Hymel, 1981; Asher & Dodge, 1986; Bukowski, et al., 1993a). A study by Schofield (1981) examined the interracial and cross-gender relationships between students in Grades 6 and 7 in a large desegregated middle school and found that students segregated themselves along gender and race lines in the classroom and school cafeteria. Using a variety of research tools including observation, interviews and sociometric techniques, Schofield found that cross-gender choices for interacting were more strongly avoided than cross-race interactions. Same-gender preferences are also stronger than same-age preferences (Smith & Inder, 1990). The finding that gender has a stronger impact on peer preference than race and age is well documented by other researchers (eg, Singleton & Asher, 1977, Shrum, Cheek & Hunter, 1988). The tendency for children to choose and rate more positively friends of the same-gender is called gender cleavage. In sociometric terms, gender cleavage is expressed as the relative balance of same-gender and opposite-gender peer preference.

In both the classroom and playground children prefer to work and play with same-gender peers (Singleton & Asher, 1977). In an interview situation, 91% of children aged 8 to 10 years of age, nominated same-gender peers as friends (Smith & Inder, 1990) and 94% of Grade 5 and 6 children nominated same-gender peers as friends (George & Hartman, 1996). These high nominations were for reciprocated friendships with the percentage dropping to 86% for unilateral friendships. Same-gender preference starts at a young age, even before children begin school. Children from the age of three years of age interact more readily and easily with same-gender peers (Maccoby & Jacklin, 1987). Maccoby's observational studies of early

childhood found that with increasing age children spent more time with same-gender peers. By 4.5 years children were spending three times more playtime with same-gender peers than with opposite-gender peers and this trend increased to a ratio of 11:1 by age six.

There are well-documented differences in the ways boys' and girls' same-gender groups are organised. A review by Daniels-Bierness (1989) summarised the differences between the organisation and structure of boys' and girls' peer groups in terms of intensity, exclusivity, stability, reciprocity and hierarchical organization. Studies have revealed that girls are more likely to show "Two's company, three is a crowd" behaviour, with groupings that are smaller and more exclusive whereas boys' groups are larger and more diverse (Eder & Hallinan, 1978; Berndt, 1982). Boys can make new friends and add other boys into their groups more easily than girls can (Eder & Hallinan, 1978; Benenson, 1994). Girls' social networks are organised along horizontal lines and are based on equality of relationships whereas boys' groups are based on a hierarchical structure with a clear pecking order. Moller, Hymel and Rubin (1992) in their study of sex differences in play behaviour found that boys "engaged in more aggressive and rough and tumble play", (Moller et al., 1992, p. 331) than did girls. Girls showed more constructive and parallel play.

The phenomenon of gender cleavage gives rise to the predominance of same-gender groups during childhood and early adolescence. It is important to study gender cleavage because it profoundly influences children's social and emotional development. If the majority of children's socializing is in same-gender groups, children learn different social skills and ways of interacting within these groups. The interactional styles learned in girls' groups are based on shared confidences with an

emphasis on social cohesiveness. In contrast, boys' groups are based on shared activities and appear to revolve around issues of dominance (Maccoby, 1990). Rubin (1980) argues that in these same-gender groups girls and boys learn to speak different social languages which may leave them unprepared for interaction with their opposite-gender peers when they reach adolescence and adulthood. He states that few adults have opposite-gender friends and that "even lovers and spouses often find it difficult to relate to one another as friends" (p.105). According to Leaper (1994), children may also find it difficult to relate to their opposite-gender peers. He argues that gender segregation has an impact particularly on girls who have a less domineering interactional style than boys and as a consequence withdraw instead of challenge the dominant male culture in schools. Cross-gender friendships are rare in childhood, but nonetheless they are important because they provide opportunities for children to learn skills, which are important for relating with the opposite-gender during childhood and adulthood (Howes, 1988).

Age-Related and Sex Differences in Gender Cleavage

Gender cleavage changes with age but there are conflicting findings in the research about the developmental trajectory of gender cleavage. For example, some research findings show that gender cleavage strengthens and peaks in middle childhood and starts to weaken in the early adolescent to adolescent years. A number of researchers have suggested that gender cleavage peaks in middle childhood, for example, in Grades 3 to 4 (Bjerstedt, 1956), Grade 4 (Schrum, Cheek & Hunter, 1988) and Grade 6 (Moreno, 1947; Hallinan, 1979a). However, the variations in peak need to be set in a chronological context. They may be related to social changes as

the research is set in different time periods. However, recent research by Bukowski et al. (1993a) found no significant grade-related effects between children in Grades 3 to 6, suggesting a stable picture of gender cleavage over middle childhood. Hayden-Thomson et al. (1987) argue that friendship research has concentrated either on early childhood or on children in middle childhood with no studies across the two age ranges. She investigated gender cleavage using a sociometric rating scale with positive, neutral, and negative ratings from Kindergarten through Grades 1 to 6. At each grade level children rated significantly more highly their same-gender peers than their opposite-gender peers, and this trend increased with age, particularly for the Kindergarten to Grade 3 children.

Nonetheless gender cleavage starts to decline during early adolescence with an increasing proportion of opposite gender friends reported in early high school when opposite-gender romantic interest begins (Duck, 1973). Shrum et al. (1988) found that gender cleavage weakens in early high school (Grade 7) and continues to gradually decline during the high school years. Early research by Moreno (1947) also found a 3-8 % increase in the nomination of opposite-gender peers in Grades 7 to 8. Research findings generally indicate that gender cleavage varies with age, peaking in middle childhood and starts to decrease in early adolescence to adulthood.

Sex differences in gender cleavage relate to whether boys or girls are more gender exclusive in their choice of friends as companions. Daniels-Bierness (1989) who summarised research in this area notes that age and sex differences are inextricably linked, and that sex differences may vary according to age. She reports that boys may be more gender exclusive than girls in early adolescence while observational studies have indicated that girls in early childhood develop same-

gender preferences earlier than boys (eg, La Freniere, Strayer & Gauthier, 1984). However, Bukowski et al. (1993a) found that between Grades 3 and 6 there are no major sex differences in gender cleavage. Martin (1994) argues that both boys and girls have a strong same-gender bias. It is difficult to reliably determine sex differences in the research literature, because there are methodological problems and an inconsistent use of research technique. For example, limited nomination choice and context specific techniques may have yielded an incomplete picture of children's friendship networks. Traditional limited nomination techniques preclude the nomination of opposite-gender peers because children will probably nominate same-gender peers first. George and Hartmann (1996) using unlimited nomination found that only one in six children friendship networks fit the pattern of same-gender, same-age within classroom pattern of friendship. Limited nominations may lead to a distorted and exaggerated picture of gender cleavage (Hayden-Thomson et al., 1987). A relatively unrestricted nomination of friends may be useful to assess children's friendship network (Bukowski et al., 1993b). Consequently, further research in this area is needed, with studies ranging from early childhood to adolescence that employ uniform sociometric and observational methodology.

Theoretical Accounts of Gender Cleavage

Several theories have attempted to explain children's same-gender preference, with theorists mainly focusing on individual- and group-level factors to explain gender cleavage. Theories based on individual factors include the social learning and social cognitive theories.

Maccoby's social learning theory (1994) proposes a behavioural compatibility hypothesis for the development and maintenance of gender cleavage. According to this model girls and boys choose to associate with same-gender peers because they are behaviourally compatible and have similar interactional styles. Boys relate to one another on the basis of shared activities while girls relate on the basis of shared confidences. In research with young children, aged 33 months Maccoby and Jacklin (1978) found that passive behaviour in girls rarely occurred when they played with another girl but increased when they played with a boy. They found that boys are more likely to play in a rough and tumble way, and that girls withdrew from this sort of play. According to Maccoby (1990) girls segregate themselves early on because of the aversiveness of boys' interactional styles. Maccoby claims that this phenomenon is instrumental in the development of gender cleavage during early childhood.

By contrast social cognitive theories focus on what children think about their same- and opposite-gender peers. In the model by Martin (1994), social cognitive factors that influence gender cleavage include gender schemata or stereotypes. Martin refers to these as the 'knowledge structures' children have with regard to the attributes of their same- and opposite-gender peers. These knowledge structures may filter information and act as a guide to behaviour. According to Martin, children associate with same-gender peers in order to strengthen their same-gender schema, and thus their identity as male or female. In a study by Martin, Fabes and Eisenberg (cited in Martin, 1994) investigating the beliefs boys and girls have about play, the investigators found that children knew more about the qualities of play in their same-sex groups than in opposite-sex groups. For example, girls attributed more sex-typed

feminine play qualities to girls than boys did, and this applied to boys as well.

Research has been supportive of the role social cognitive mechanisms play in the maintenance of gender cleavage especially during middle childhood.

In contrast to individual-level factors that are at the core the Martin (1994) and Maccoby (1994) models, Thorne (1986) advocates the importance of group-level processes in the maintenance of gender cleavage. She suggests that fear of ridicule from the group and peer group pressure, particularly during middle childhood and early adolescence, has a strong and pervasive effect reinforcing gender cleavage as a powerful social phenomenon during this developmental phase. For example, during extensive observations of children in schools she found that children who crossed the gender boundary ran a strong risk of being teased. Teasing was often of a romantic, heterosexual nature and was a means of policing and maintaining gender boundaries.

Theoretical accounts of the establishment and maintenance of gender cleavage have focused largely on individual-level factors as the driving force behind this phenomenon and to a lesser extent, group processes. However, at a still broader level, it is possible that environmental factors might also play an important role, and their inclusion in theoretical models of the development of gender cleavage might prove invaluable. Previous research has found that environmental variables such as organisational factors pertaining to children's schooling and the social settings children find themselves in may affect gender cleavage (Epstein, 1986). However, this is an under-researched area that is relevant to theoretical development of gender cleavage.

Schools provide a major setting for friendship formation as children spend a large proportion of their time in educational settings (Hallinan, 1992). For example,

cross-gender friendships are more common at home than school (Gottman cited in Daniels-Bierness, 1989), indicating that environmental factors can impact on gender cleavage. However, Epstein (1986) suggests a number of different environmental variables that may affect opposite-gender choices at school. These include class size, for example, in Hallinan's (1979b) research students in smaller classes chose more opposite-gender friends than did their counterparts in larger classes. Epstein also argues that classroom structure (ie traditional versus open), and school environments that provide opportunities for cooperative teamwork and interaction with opposite-gender children may influence opposite-gender choice. Adults generate the school organisation and structures that may lead to opposite-gender choices increasing within the classroom setting. However, in the playground, without adult-imposed structures children, especially in the middle childhood years, may revert to minimal interactions with opposite-gender peers (Thorne, 1986). Gender cleavage is a powerful and pervasive phenomenon, but evidence shows that it may be modified to a certain extent by organisational and structural factors.

The structural factors pertaining to class size and other structural constraints on school classes have been investigated, but the actual gender composition of the school environment has been largely neglected as a factor influencing gender cleavage. In a number of Western countries, there are two gender-based models of schooling, coeducational and single-sex. From an academic viewpoint the merits of each model have been widely debated, but little attention has been paid to the impact of these educational models on friendship development and the fostering of opposite-gender relationships during childhood and adolescence. Indeed, there are no published studies on the influence of these different gendered environments on

gender cleavage. Hallinan (1992) states that research supports the conclusion that “while individual level characteristics are the strongest determinants of friendship choice, organizational and structural factors also play a significant role in students’ friendship formation and stability” (p. 163). It may therefore be argued that immersion in same-gendered and mixed-gendered school environments may also have an impact on the development, maintenance and strength of gender cleavage.

Friendship Quality

While gender cleavage has mainly been studied in relation to children’s actual friendship choices, important insights may also be gained by asking children about their thoughts and feelings regarding their friendships with same- and opposite-gender peers. Important insights into friendships and gender cleavage may be gained in this way. This research is broadly termed friendship quality research.

Friendship quality research is about children’s values, ideas and expectations about their peer relationships. For example, children find companionship, help and loyalty important in their friendships. Bigelow (1975) was one of the first researchers to ask children what they thought was important in their friendships. He asked children from Grades 1 to 8 to write an essay about what they expected from their best friends of the same-sex. Friendship dimensions extrapolated from the essays included common activities, evaluation, and propinquity, character admiration, acceptance, loyalty and commitment, genuineness, common interests, and intimacy potential. These dimensions formed the basis for much future research, and a number of different methodological methods evolved from these early studies.

Methods of Studying Friendship Quality

In contrast to the observational and sociometric methods that reveal children's friendship choices, the cognitive approach of friendship quality research can amplify understanding about children's friendships. Observation confirms that children usually prefer to play with their same-gender peers but it does not take account of cognitive factors, for example, a child may have wanted to play with an opposite-gender peer and had asked for inclusion but may have been rejected.

Friendship quality has been investigated by a variety of means; including children's essays (Bigelow & La Gaipa 1975), open-ended interview questions and picture recognition tasks (Furman & Bierman 1983), and more recently rating scales (Parker & Asher 1993, Bukowski, Hoza, & Boivin 1994; Jarvin & Nichols 1996). These research methods grew from early open-ended techniques such as interviews to include more structured methods such as questionnaires and rating scales. Furman and Bierman (1983) compared three methodological procedures; open-ended interview, a picture recognition task, and a forced-choice rating task, in eliciting friendship conceptions from children aged 4 to 7 years of age. There were similar findings from each procedure although results on the open-ended interview were not as strong. Open-ended interviews rely on well-developed verbal skills, which may put young children at a developmental disadvantage. Open-ended interviews may be more efficient with older children. Berndt and Perry (1986) found a high correlation between open-ended and closed questions and encouraged the use of interviews as research tools, since children provide rich and detailed information that would not be gained through more standardised measures. However, Berndt and Perry do not discount standardised measures but recommend instead a multi-method approach for

examining friendship quality. Friendship quality questionnaires allow uniform administration and ease of statistical analysis (Bukowski, Hoza & Boivin, 1994).

Development of Friendship Concepts

Sullivan (1953), in his pioneering work on theories of friendship recognised the importance of friendship in children's social development and proposed a developmental framework for children's friendships. During the juvenile period (4-9 years) children's friendships are based on the need to enhance status. Sullivan referred to children's friendships in middle childhood as 'chumships'. Chums are close friends or best friends and are usually of the same gender. During the pre-adolescent stage (9-10 years) children's friendships change to become based more on intimacy, shared concerns and an ability to be concerned about others. Sullivan also argued that the two aspects of peer relationships status and friendship are differentially important at different ages. The peer group is especially important during the juvenile period, particularly between seven and nine years, and having a close, special friend is of greater importance to individuals during preadolescence and adolescence.

Bigelow (1977) in his pioneering work on children's friendship expectations added to Sullivan's earlier theories and proposed that there are three successive developmental stages in friendship concept development that equate to the three major age groupings; early childhood, childhood and adolescence. In early childhood children's ideas about their friendships are characterised by overt behaviours, common activities and propinquity. During the middle childhood years, moral values and admiration play an increasing role while during adolescence intimacy of

communication becomes a key defining feature. Furman and Bierman's (1983) research supported Bigelow's findings but in addition found that a higher proportion of younger children (aged 4 to 7 years) mentioned common activities, support, affection and propinquity as been important aspects of their friendships. Affection and support became more important in older children and references to physical characteristics decreased. During pre-adolescence and early adolescence there is a shift away from, and change in emphasis on peer relations to friendships where intimacy, closeness and security become increasingly important (Bukowski, et al. 1993b). Thus, the research shows that close friends take on new importance and can act as a buffer against loneliness.

Bigelow and La Gapia (1980) proposed a sequential cognitive developmental model of the development of children's ideas that is generated by socialisation. They related their model to Kohlberg's model of moral development and suggest that children move from egocentric and concrete ideas about their friends to more abstract ideas about their friendships that incorporate intimacy, empathy and self-disclosure. Selman and Jacquette (1977) also proposed a stage-based scheme of friendship development. However, it has been argued that the structural-development model is not a strict, step-like transition of friendship conceptions but is a more "continuous, gradual process of generalization and consolidation" (Schofield & Kafer, 1985, p.162). Furman and Bierman (1983) also argue that children acquire friendship expectations in a cumulative manner. Thus, there appears to be considerable tension between the continuous and discontinuous models of friendship concept development.

Age-Related and Sex Differences in Friendship Quality

There are a number of different gender issues in friendship quality. First, do boys and girls report different levels of overall friendship quality at different ages? Second, are there sex differences in ratings for specific friendship qualities?

Gender differences and age-related changes in friendship quality are inextricably linked. In friendship quality studies, girls express higher levels of friendship quality than do boys (Jones & Costin, 1995). This gender difference emerges in early adolescence with adolescent girls reporting more intimate and exclusive friendships than do boys (Parker & Asher 1993; Berndt, 1982; Sharabany, Gershoni & Hoffman 1981; Moore & Boldero 1991). For girls, overall levels of intimacy may increase from around nine years of age (Jones & Dembo, 1989) to the age of 13 in about Grade 8 (Jones & Costin, 1995). While intimacy increases there is a corresponding decrease in the importance of mutual activities (Clark & Bittle, 1992). Research also indicates that older children report higher levels of friendship quality than younger children (Berndt, 1986; Jones & Costin, 1995). This may be related to the finding that friendship networks become more stable in adolescence for both boys and girls (Degirmencioglu, Urberg, Tolson & Protima, 1998).

Sex differences have also been found in specific friendship qualities. The most consistently reported sex difference is the greater intimacy in friendship reported by girls than by boys in early adolescence (Berndt, 1986). Bigelow (1980) found that girls describe loyalty, genuineness and intimacy as more important than did boys. Girls are more concerned with loyalty and commitment than are boys with

46% of girls versus 19% of boys indicating that unfaithfulness was a reason for termination of friendships (Berndt 1982). Girls view their relationships as being closer than that of boys and ascribe greater importance to this closeness (Moore & Boldero, 1991). In a study by Clark and Bittle (1992) girls expected their friends to be kind and empathic more than boys did. Bukowski, Hoza and Boivin (1994) also found sex differences in their five conceptually meaningful aspects of the friendship relation: companionship; conflict; help; security and closeness. This study showed that girls scored more highly on the help, closeness and security aspects of friendships than did boys. Bukowski et al. (1994) suggests that there are strong links between these three dimensions since they are more affectively laden than the other dimensions. In another friendship quality study by Sharabany, Gershoni and Hoffman (1981) found that girls had higher overall ratings of intimacy for same-gender friends than did boys, particularly for the qualities of trust and loyalty, help and attachment.

Research has concentrated on sex and age differences in friendship quality in relation to same-gender peers. Little research has been carried out in relation to children's and adolescent's perceptions of their opposite-gender peers and few studies have compared these perceptions with those of same-gender peers (Sharabany et al., 1981). In friendship quality research (eg, Clark and Bittle, 1992), some researchers have failed to make a distinction between same-and opposite-gender friends assuming that children's ratings are only meaningful for same-gender friends. Moreover, friendship qualities in opposite-gender peers have not been widely or systematically examined across gender or age. This is an important area to

research because studying qualities in relation to same- and opposite- gender friends for girls and boys could throw some light on the gender cleavage question.

Sharabany et al.'s (1981) is one study that investigated sex and age differences in friendship quality with opposite-gender friends, but in relation to intimate friendships. Intimacy ratings for opposite-gender friends significantly increased with age but there was a different pattern for boys and girls. Intimacy ratings increased earlier for girls and their relationships with opposite-gender friends developed more quickly than did those of boys. In contrast same-gender intimacy ratings remained relatively stable across grades for both boys and girls. There were no sex differences in the development of intimacy with opposite-gender peers for children assessed in Grades 5 and 7. The pattern changed in adolescence with girls in Grades 9 and 11 reporting more intimacy with opposite-gender peers than did boys. This transition happened earlier for girls (Grade 7) than for boys (Grade 9). In adolescence, girls reported higher ratings for knowing and sensitivity, giving and sharing, and taking and imposing with opposite-gender peers than did boys. Trust and loyalty, and attachment ratings were also higher for girls but only in the higher grades. There were no sex differences for the frankness and spontaneity, exclusiveness, and common activities dimensions of friendship quality.

Shifron's (1986, cited in Sharbany, 1994) results agree with those of Sharabany et al. (1981) in that intimacy across different age levels (Grades 3, 7, 11 and College) were different for same- and opposite-gender friends. Again, intimacy qualities for opposite-gender friends consistently increased with age while intimacy remained relatively stable for same-gender friends. For same-gender friends there was a decline with age in the ratings for common activities and exclusiveness, and an

increase in frankness and sensitivity. A decrease in common activities and an increase in intimacy with age has also been found by other researchers (eg, Clark & Bittle, 1992; Shifron, 1986, cited in Sharabany, 1994).

Same-gender friends are important sources of support and this may help to explain the strong preference for these peers seen in gender cleavage studies. In Furman and Buhrmester's (1992) study of perceptions of supportive relationships of children in Grade 7, same-gender friends were seen to be as important as parents are as providers of support. This level of perceived support increases with age. Same-gender peers are seen as the most frequent providers of support for Grade 10 children. In late adolescence college students report that romantic partners are as supportive as same-gender friends and parents. Furman and Buhrmester also found sex differences, with girls' ratings of support from same-gender friends significantly higher than boys' ratings.

Bukowski et al's (1993a) research showed that children's stronger liking for same-gender peers is related to a positive bias towards their same-gender peers not a negative bias towards opposite-gender friends, and this pattern of results is equally apparent among boys and girls. Children appear not to actively dislike opposite-gender peers but may like same-gender peers more because they might get more interpersonal satisfaction out of their relationships with same-gender peers. The differences in the social structures of boy's and girl's groups are also suggestive of sex differences in the criteria for friendship choice for boys and girls. Friendship qualities research has highlighted this finding and shows the important links between these heretofore separate strands of peer relations research.

Directions for Future Research

The two major areas of friendship research namely friendship choice and friendship expectation have developed separately. However, there may be important connections between children's expectations of friendships and their actual friendship choices. Research in friendship quality has concentrated on sex differences and on qualities of same-gender friends. How could this cognitively based information throw light on children's changing preference for same-gender friends particularly during the juvenile period? Martin (1994) argued that researchers have assumed that children's actual play partners match their desired play partners. Children may want to play with their opposite-gender peers but may not be accepted. Thus, there are complex age-related and sex differences in both areas and it is possible that gender cleavage, which is the overriding factor influencing friendship choice during childhood and adolescence is related in important ways with gender-related expectations of these relationships. For example, in early adolescence gender cleavage declines and friendship quality increases, particularly for girls. It is possible that adolescents' cognitive development and developing gender schema may play a role in their choice behaviour in relation to the opposite gender. Greater quality in friendships and less perceived difference between same- and opposite-gender peers may play an important role in declining gender cleavage. Therefore, there is a need to combine gender cleavage (choice-based) research using sociometric methodology with questionnaire-based friendship qualities research in order to explore possible linkages between children's changing ideas of friendship, with the progression of gender cleavage between childhood and adolescence.

An area that has also not been researched is the role of environmental factors, specifically gendered school environments both on gender cleavage and children's ideas about friendships with same- and opposite-gender peers. This may add to theoretical models on gender cleavage and sex differences in relation to children's ideas about friends, which have emphasised individual-level and group-processes. Future research could investigate the influence of coeducational and single-sex educational environments on children's ideas about the quality of their friendships and on gender cleavage (ie the propensity to choose same-gender friends), and to investigate how these environmental factors may interact with both age and gender. It is also important to investigate how ideas of friendship quality may be related to opposite-gender and same-gender friendship choices in these gendered environments.

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EMPIRICAL STUDY

**Age, Sex and Schooling Effects in Measures of Gender Cleavage and
Friendship Qualities in Grade 3 to 10 Students.**

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Empirical study

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Abstract

This study investigated the impact of single-sex and coeducational school environments on gender cleavage, and on students' perceptions of friendship quality in same- and opposite-gender peers. Additionally, the study explored links between friendship qualities and friendship choice by investigating how gender cleavage might be predicted by same-gender bias in students' perceptions of friendship quality. A total of 324 girls and 336 boys in Grades 3 to 10 completed an unlimited-choice sociometric nomination of same- and opposite-gender friends, as well as Bukowski et al.'s (1994) Friendship Qualities Scale for a same-gender friend and for an opposite-gender friend. Findings indicated that students' experience of single-sex or coeducational schooling had minimal impact on preference for same-gender peers. Boys in coeducational classes showed greater gender cleavage than did their female counterparts. There were no sex differences for students in single-sex classes. A strong overall trend for greater gender cleavage in lower grades was evident, and the point at which the gender barrier began to break down was similar in both types of school. There was an atypically higher degree of gender cleavage in single-sex schools at Grades 8 and 9 than in Grade 7. Analysis for friendship qualities showed that ratings for same-gender friends were significantly higher than were ratings for opposite-gender friends on all five subscales of the Friendship Qualities Scale. School effects were more evident in ratings of opposite-gender than same-gender friends, where sex differences were more evident in results. Students in single-sex classes rated opposite-gender friends more highly than did students in coeducational classes on all the positive friendship qualities: companionship, help, security and closeness, signalling an idealisation of opposite-gender friends that

was not evident in coeducational classes. Coeducational girls exhibited the highest ratings of perceived conflict with opposite-gender friends. Overall, the quality of opposite-gender friendships was greater in high school classes than it was in primary classes. When rating the qualities of same-gender friends, girls perceived higher levels of companionship, help, security and closeness than did boys. Boys on the other hand rated same-gender friends more highly for conflict than did girls. It was apparent that girls viewed same-gender friendships more positively and less negatively than did boys and may achieve a higher level of interpersonal satisfaction from these relationships than do boys. Overall, the positive qualities seen in same-gender friends were similar across grade in contrast to the grade-related effects seen in opposite-gender friendship qualities. It was found that same-gender bias in some of the friendship qualities significantly predicted gender cleavage, but these predictors varied for boys and girls. A perception that companionship was more available through same-gender than opposite-gender friendships predicted preference for same-gender friends in boys, regardless of the school environment. In contrast, the predictors for girls' same-gender preference varied between school environments. For girls in coeducational classes, gender bias in perceptions of help significantly predicted gender cleavage, signalling the greater importance of a protective factor for these girls probably stimulated by the presence of boys in their school environment. In single-sex classes the strongest predictor of gender cleavage was gender bias in perceptions of closeness, which was found to be consistent with the finding that intimacy-related qualities are more important in girls' than in boys' same-gender relationships. The links between research into friendship qualities and friendship choice were emphasised in this study as a profitable avenue for a greater understanding of friendship choice during childhood and adolescence.

It is a well-documented phenomenon that children prefer to play and interact with peers who are similar to themselves, and prefer friends of the same age, race and gender (Singleton & Asher, 1977; Shrum, Cheek & Hunter, 1988; Smith & Inder, 1990; George & Hartman, 1996). The strongest cleavage however is on the basis of gender. Cross-race friendships are rare but not as rare as cross-gender friendships (Schofield, 1981; Hallinan, 1992).

Gender cleavage is the tendency for children to choose and rate more positively friends of the same sex. This phenomenon appears early, with children from the age of three years preferring to play with same-gender peers (La Freniere, Strayer & Gauthier, 1984). Gender cleavage strengthens and peaks in middle childhood and starts to weaken in the early adolescent years (Duck, 1973; Shrum, Cheek & Hunter, 1988). However, there are conflicting findings in the research about the developmental trajectory of gender cleavage. Different researchers have postulated the age with which gender cleavage peaks, Grade 3 to 4 (Bjerstedt 1956; Schrum, et al., 1988) to Grade 6 (Moreno, 1947; Hallinan, 1979). However, recent research by Bukowski, Gauze, Hoza and Newcomb (1993) found no significant grade-related effects between children in Grades 3 to 6, suggesting a stable picture of gender cleavage over middle childhood. Nonetheless it starts to decline during early adolescence with an increasing proportion of opposite-gender friends reported in early high school (Moreno, 1947; Duck, 1973; Shrum, et al., 1988). To gain a clearer picture of its developmental trajectory there is a need to look at gender cleavage over a wider age range because the majority of studies cover limited developmental groupings, for example, Kindergarten to Grade 1, Grades 3 to 6, (Hayden-Thomson,

Rubin & Hymel, 1987). Moreover, there is a dearth of longitudinal studies in the literature.

Additionally, the trajectory of gender cleavage may be different in boys and girls, and there may be sex differences in the strength of gender cleavage. Hence, age and sex differences are inextricably linked. Daniels-Bierness (1989) suggested that girls develop same-gender preference earlier than boys, but in adolescence boys may be more gender exclusive than girls. Nonetheless, Bukowski et al. (1993) found no sex differences in gender cleavage in middle childhood.

Several theories have attempted to explain children's same-gender preference, with theorists mainly focusing on individual and group level factors to explain gender cleavage. Theories based on individual factors include social learning and social cognitive theories. Maccoby's social learning theory (1994) espouses a behavioural compatibility hypothesis for the development and maintenance of gender cleavage and social cognitive theories focus on gender stereotyping (Martin, 1994). In contrast to individual-level factors that are at the core of Martin's (1994) and Maccoby's (1994) models, Thorne (1986) emphasises the importance of group-level processes in the maintenance of gender cleavage. She suggests that fear of ridicule from the group and peer group pressure; particularly during middle childhood and early adolescence has a strong and pervasive effect, reinforcing gender cleavage as a powerful social phenomenon during this developmental phase.

Theoretical accounts of the establishment and maintenance of gender cleavage have focused largely on individual-level factors as the driving force behind this phenomenon and to a lesser extent, group processes. However, at a still broader level, it is possible that environmental factors might also play an important role.

Previous research has found that environmental variables such as social settings and the organisational factors pertaining to children's schooling may affect gender cleavage. These include class size and classroom structure (ie traditional vs open), and school environments that provide opportunities for cooperative teamwork and interaction with opposite-gender children (Epstein, 1986). Thorne (1986) found that in the playground, without adult-imposed structures of the classroom, children revert to minimal interactions with opposite-gender peers. On the basis of these studies, gender cleavage appears to be modified to a certain extent by social settings, organisational and structural factors. Nonetheless, an important organisational factor, the gender composition of the school environment, has not been investigated. There are no extant studies on the impact of gendered school environments on gender cleavage. It may be argued that single-sex and coeducational schooling might also have an impact on the development, maintenance and strength of gender cleavage.

Researchers have traditionally used limited and context-specific sociometric nominations to investigate friendship choice, which may yield an incomplete picture of children's friendship networks. Limited nominations such as the common three-choice friendship nomination may also exaggerate gender cleavage effects because they limit the possible nomination of opposite-gender peers who are of lower priority in friendship choice. Thus, many researchers may assume that children do not have opposite-gender friends or playmates and preclude them from the research picture (Dweck, 1981; Daniels-Bierness, 1989). However, George and Hartmann (1996) using an unlimited nomination technique, found that only one in six children's friendship networks fitted the expected same-gender, same-age, within-classroom friendship pattern suggested by previous limited-choice nomination studies. These

investigators as well as Daniels-Bierness (1989) recommend the use of an unrestricted friendship nomination incorporating same- and opposite-gender choices such as that used by Bukowski et al. (1993).

Although much of the research in peer relations has focused on friendship choice, which includes the gender cleavage question, an important and related area of peer relations research is in friendship quality. Instead of focusing on the actual friendship choices children make, friendship quality research examines the cognitive aspects of peer relations; the concepts, values, ideas and expectations children have about their friendships. Bigelow (1975), in his pioneering work in this area, found that some of the qualities children find important in their friendships are character admiration, loyalty, commitment, companionship and intimacy. Children's friendship concepts change with age and increase in complexity and depth (Berndt, 1982; Furman & Bierman, 1983; Newcomb & Bagwell, 1995). As children get older there is a decrease in the importance of physical characteristics and an increase in psychological aspects such as closeness and intimacy (Berndt, 1982). Adolescents also rate more highly the quality of their friendships than do younger children (Berndt, 1986).

In studies of friendship quality sex differences have emerged as an important factor. They appear around the age of 13, with girls expressing higher levels of overall friendship quality than do boys (Jones & Costin, 1995). These investigators found that girls express higher quality of friendship for same-gender peers than do boys at around Grade 8 and are more communal and less exchange-oriented than those of boys. Girls also rate some friendship qualities more highly than do boys. For example, Berndt (1982), and Parker and Asher (1993) found that adolescent girls report more intimate and exclusive friendships than do boys of the same age.

Moreover, in their 1994 study Bukowski, Hoza, and Boivin report that girls scored more highly on the help, security and closeness domains of friendship with their same-gender peers. Sharabany, Gershoni and Hoffman (1981) in another friendship quality study found girls' ratings were higher than boys' ratings for same-gender intimacy with girls reporting higher levels of attachment, giving and sharing, and trust and loyalty.

Research has concentrated on sex and age differences in friendship quality in relation to same-gender peers. Little research has been carried out into children's and adolescent's perceptions of opposite-gender peers or comparing them to same-gender peer perceptions (Sharabany et al., 1981). Moreover, friendship qualities in opposite-gender peers have not been widely or systematically examined across gender or age. This is an important area for research because studying qualities in relation to same- and opposite- gender friends for girls and boys could reveal about the gender cleavage question.

The few studies that have been carried out have shown differences in the way that children and adolescents rate the quality of their relationships with same- and opposite-gender peers. Overall, quality ratings for same-gender peers are consistently higher than for opposite-gender peers across the developmental spectrum (Sharabany, 1980 and 1986, cited in Sharabany, 1994). In Sharabany et al.'s research, intimacy ratings for opposite-gender friends significantly increased with age but there was a different pattern for boys and girls. There were no sex differences in the development of intimacy with opposite-gender peers for children assessed in Grades 5 and 7. The pattern changed in adolescence with girls in Grades 9 and 11 reporting more intimacy with opposite-gender peers than did boys. Intimacy ratings

increased earlier for girls and their relationships with opposite-gender friends appeared to develop more quickly than did those of boys. In contrast same-gender intimacy ratings remained relatively stable across grades for both boys and girls. In adolescence, girls reported higher ratings for knowing and sensitivity, giving and sharing, and taking and imposing with opposite-gender peers than did boys.

This pattern indicates that individuals might have a different type of relationship with same- and opposite-gender peers. For example, in their 1993 cleavage study, Bukowski et al. found that gender cleavage was due mainly to a strong liking for same-gender peers rather than an active dislike of opposite-gender peers. Investigation of friendship qualities may throw further light on the reasons for same-gender preference and might uncover important connections between children's expectations and their actual friendship choices. Jones and Costin (1995) argue "Grade and sex differences in relationship orientations and gender related characteristics are evident in the early adolescent years and are linked to perceptions of friendship quality" (p. 532).

The two major areas of friendship research namely friendship choice and friendship expectation have to a large degree, developed separately. Research in both spheres has concentrated mainly on same-gender peers. For example, Jones and Costin's (1995) study did not investigate children's perceptions of opposite-gender peers. Moreover, in friendship quality research some researchers have not made a distinction between same-and opposite-gender friends assuming that children's ratings are for same-gender friends. Moreover, friendship qualities in opposite-gender peers have not been widely or systematically examined across gender or age.

It is possible that adolescents' cognitive development and developing gender schemata may play a role in their choice behaviour in relation to the opposite-gender.

How could this cognitively based information throw light on children's changing preference for same-gender friends? Friendship quality ratings appear to remain stable over childhood and adolescence. In contrast, quality ratings for opposite-gender peers increases over time (eg, Sharbany et al., 1981) while gender cleavage decreases. There are complex age-related and sex differences in both areas and it is possible that gender cleavage, which is the overriding factor influencing friendship choice during childhood and adolescence is related in important ways with gender-related expectations of these relationships. Greater quality in friendships and less perceived difference between same- and opposite-gender may play an important role in declining gender cleavage. Therefore, a combination of gender cleavage (choice-based) research using sociometric methodology with questionnaire based friendship qualities research is needed in order to explore possible linkages between children's changing ideas of friendship, with the progression of gender cleavage between childhood and adolescence.

Aims and hypotheses

The aim of this study was to investigate the role of environmental factors in gender cleavage and friendship quality: how coeducational and single-sex school environments might influence both of these aspects of peer relationships, including sex differences and developmental trajectory. A further aim was to investigate how ideas of friendship quality might be related to gender cleavage.

This exploratory study addressed the following questions regarding the way in which different school environments might affect gender cleavage seen in friendship choices. Is the availability of and everyday interaction with opposite-gender peers a significant factor affecting gender cleavage? If this is so then students in coeducational

environments will more readily nominate children of the opposite gender as friends than children in single-sex schools.

How do these different school environments affect the developmental trajectory of gender cleavage? From previous research in coeducational classes, it is expected that gender cleavage would be less in higher than in lower school grades. However, the age-related trends in gender cleavage in single-sex environments are not known, and the absence of opposite-gender peers in everyday school interactions may influence the developmental trajectory of gender cleavage. For example, the point at which the gender barrier begins to break down has been established through research in coeducational settings. In the absence of opposite-gender peers, the gender barrier may begin to break down later in single-sex than in coeducational schools.

How might gendered school environments affect sex differences in gender cleavage? Research in this area has focused exclusively on coeducational students, so the influence of an environment with only same-gender peers on greater same-gender preference in boys or girls is unknown. To investigate the developmental trajectory of gender cleavage from middle childhood across adolescence this study incorporated students from Grades 3 to 10 in an attempt to further investigate when gender cleavage starts to break down.

In the area of friendship quality there has been little research into children's perceptions of opposite-gender friendships. Therefore, a major aim of this study was to establish whether differences existed in perceptions of same- and opposite-gender friendships, and whether there was a higher quality of relationship with same-gender than with opposite-gender peers. Furthermore, sex differences were investigated in relation to how boys and girls view friendships with same- and opposite-gender peers.

From previous research in same-gender friendships it was expected that girls would report higher qualities in their close friendships than would boys. However, it was unclear whether these sex differences would also be upheld in opposite-gender friendships.

The influence of environmental factors in terms of single-sex and coeducational schooling was investigated in an exploratory way to answer the following questions. Do single-sex and coeducational schooling impact differentially on perceptions of opposite-gender peers who may or may not be present in the school environment? It is expected that school effects may be more evident in opposite-gender friendship qualities than in same-gender friendship qualities due to this absence or presence factor. Same-gender friendship qualities are not expected to be influenced greatly by such environmental factors because of the presence of same-gender peers in both school environments. Furthermore, in relation to known sex differences in same-gender friendship expectations, will feminised and masculinised school environments seen in single-sex schools exaggerate any sex differences found in children's friendship expectations, in comparison to a coeducational environment? Grades 3 to 10 students were included in this study so that age-related effects could also be investigated.

In relation to the second aim to establish links between friendship choice and perceptions of friendship, prediction of gender cleavage by measures of friendship quality was investigated using multiple regression analysis. It was expected that gender cleavage would be predicted to a significant degree by the level of gender bias expressed in friendship quality. In other words the degree to which students perceived certain qualities as belonging to their own gender was predicted to be significantly related to the level of same-gender preference. However, it was unclear which of the five friendship

qualities investigated in this study might be related to gender cleavage. It was expected that some friendship qualities would be more strongly related to gender cleavage than others. Based on known sex differences in the importance of different qualities for boys and girls, it was hypothesized that such qualities would have differential predictive relationships with gender cleavage, for example same-gender bias in perceptions of intimacy predicting gender cleavage for girls and likewise in companionship for boys. Furthermore, the role of environmental factors in these predictive relationships was investigated by separate multiple regression analyses for girls and boys in single-sex and coeducational schools.

Method

Participants

The participants were 336 boys and 324 girls from Grades 3 through to 10 from three non-government schools; a single-sex girls' school, a single-sex boys' school and a coeducational school. The three schools were matched on the basis of size, grade range (Kindergarten to Grade 12), school fees charged and socioeconomic mix. All three schools were located in Hobart, Tasmania.

Data were collected on a class basis, with one to two classes participating at each grade level. Classes from Grade 3 to 6 were based on traditional class groupings taught by one teacher, and from Grades 7 to 10 on subject area, such as English. Participation by students depended on written parental permission (see Appendix A for information letter and consent form), and varied between 40% and 100% (see Table 1 for numbers of girls and boys participating at each grade level in each type of school)

Table 1
Number of Girls and Boys Participating at Each Grade Level in Single-sex and Coeducational Schools (N=660).

Grade Level	Single-Sex		School Type		Coeducational		Total
	Girls	Boys	Girls	Boys			
3	31	24	23	14		92	
4	22	30	17	21		90	
5	24	30	19	23		96	
6	22	22	17	16		77	
7	19	21	15	17		72	
8	18	24	15	15		72	
9	20	28	15	15		78	
10	34	23	13	13		83	
Total	190	202	134	134		660	

Instrumentation.

Students completed an unlimited nomination task (Bukowski, Gauze, Hoza & Newcomb, 1993) where they were asked to write the names of same- and opposite-gender friends inside and outside of school. Students could write as many names in a boxed space on the form as they wanted or none at all, but were asked not to include close relatives (see Appendix B).

Students also completed the Friendship Qualities Scale (FQS-Bukowski, Hoza, & Boivin, 1994), a well-validated and reliable instrument for the measurement of “the quality of children’s and early adolescents’ relationships with their best friends according to five conceptually meaningful aspects of the friendship relation” (p. 471). The reliability coefficients for the subscales of the Friendship Quality Scale range from Pearson’s $r = 0.71$ to 0.86 . The validity of the scale is indicated by higher ratings for mutual friends than for non-friends, and for stable friends than for non-stable friends.

The Companionship subscale of the FQS focuses on the amount of voluntary time spent together. The Conflict subscale focuses on arguments, fights and the ability to annoy each other. The Help subscale is made up of two sub-components, aid and protection from victimisation. Likewise, the Security subscale measures two components, reliable alliance (a belief that in times of need a friend can be relied upon and trusted) and transcending problems (a belief that if there were a negative threat to the relationship that the friendship would be strong enough to withstand the problem). The Closeness subscale components are affective bonds (the child’s feelings about the relationship) and reflected appraisal (feelings the child derives from the relationship).

The FQS consists of 23 rateable statements with scale points ranging from 1 'very untrue,' through 3 'sometimes true and sometimes untrue,' to 5 'very true'.

The original North American version of the Friendship Qualities Scale (See Appendix C) was modified for Australian students (see Appendix D). Nine statements containing specific Americanisms were reworded, with close attention to preserving the original meaning. For example, 'My friend can bug me or annoy me even though I ask him not to' became 'He (or she) can annoy me even though I ask him or her not to.' For each statement the word 'friend' was replaced with a 'she' or 'he'. This modification avoided the repetition of 'my friend' and made the questionnaire gender-specific, to ensure that students were indeed thinking of a girl or boy when filling out the questionnaire. The wording of the statements was the same for all grades.

The original FQS instructions were altered to better suit Grades 7 to 10 students. 'Best friend' was replaced with 'closest friend' as this wording was deemed more age-appropriate. Students were asked to think of one closest friend of the opposite (same) gender. If they were unable to think of a closest friend, they were asked to think of someone of the opposite (or same) gender whom they were friendly towards, knew well and liked. Children in Grades 3 to 6 were asked to think of one best friend who was a boy (girl). If they could not think of a best friend, they were asked to consider a boy (girl) they knew well and liked (see Appendix E for standard instructions within the briefing script for Grades 3 to 10).

Procedure

Students completed questionnaires in class groups during a single session in normal class periods between June and October. Desks were separated to ensure privacy. The unlimited choice sociometric questionnaire was administered first using standard instructions (see Appendix E). Students in Grades 3 to 6 were trained in the use of a five-point Likert scale for the FQS. All students completed a questionnaire for a same-gender friend and for an opposite-gender friend, with half the group completing same-gender ratings first. Students who were unable to think of an opposite-gender peer as the focus of the FQS were not required to complete this questionnaire.

Completion time ranged from 1.5 hours for younger students to 30 minutes for older students. Younger students were given a break between questionnaires. In Grade 3 classes each question was read out loud to the class reducing the influence of differential literacy abilities. In all other grades, students read the statements themselves and teachers assisted those with literacy difficulties.

Results

All students completed the sociometric nomination task. Students who completed FQS only for same-gender friends were omitted from analyses pertaining to FQS (see Table 2 for participant numbers).

Table 2
Number of Students Completing FQS and Friendship Nominations at Different Grade Levels

Grade Level	Nomination Task		Friendship Qualities Scale (FQS)	
	Girls	Boys	Girls	Boys
3	54	32	38	28
4	39	51	33	36
5	43	53	34	40
6	39	38	34	37
7	34	38	30	34
8	33	39	32	33
9	35	43	35	43
10	47	36	43	34
Total	324	330	279	285

Gender Cleavage

In sociometric terms, gender cleavage is expressed as the relative balance of same-gender and opposite-gender peer preference. Cleavage for individual participants was represented by indices that reflected their same-gender friendship nominations relative to the total nominations they made. Same-gender nominations were summed and were divided by the sum of same-gender and opposite-gender nominations. This procedure yielded a proportional score between 0 and 1.0. For example, if a child made

no same-gender nominations and six opposite-gender nominations, 0 was divided by 6 yielding an index of 0. If a child made four opposite-gender nominations and four same-gender nominations, the four same-gender nominations were divided by the total nominations (8) yielding an index of .50, indicating a perfect balance between same- and opposite-gender nominating. If all the nominations were same-gender and none were opposite-gender, then an index of 1.0 resulted. In practice indices ranged from 0.37 to 1.00 ($M = .80$, $SD = 0.16$), with higher values indicating greater gender cleavage (ie, a more marked imbalance between the numbers of same-gender peers and opposite-gender peers nominated as friends).

A three-way between-groups ANOVA was conducted to investigate the effect of sex, grade level (Grades 3-10) and school type (single-sex and coeducational classes) on gender cleavage. A significant main effect for grade was found, $F(7, 628) = 28.29$, $p < .001$. Results indicate that gender cleavage was lower with increasing grade level. The strongest gender cleavage was found in Grade 3, ($M = 0.87$), and the weakest was in Grade 10, ($M = 0.65$). A linear trend analysis was undertaken to confirm this finding and was statistically significant, $F(1, 628) = 3.02$, $p < .01$.

There was a significant interaction between sex and school type, $F(1, 628) = 6.41$, $p < .05$. Specific effects were investigated using LSD post hoc testing ($p < .05$). The only significant difference was in relation to coeducational schooling, where boys showed significantly higher levels of gender cleavage than did girls. This effect did not occur for students in single-sex classes. Furthermore, there was no difference in gender cleavage between girls enrolled in single-sex classes and their counterparts in coeducational classes, a finding that was repeated for boys (see Table 3 for means and mean square error).

Table 3
Mean Gender Cleavage Index Values for Girls and Boys Enrolled in Single-sex and Coeducational Classes (N = 660)

Gender	School Type	
	Single Sex	Coeducational
Girls	0.80	0.77
Boys	0.78	0.81

Note: Mean Square error = 0.02.

A significant interaction was also found between grade level and school type $F(7, 628) = 3.38, p < .01$. This showed that there were lower gender cleavage indices with higher grade levels. Linear trend analyses for both coeducational classes, $F(1, 252) = 1.92, p < .01$, and single-sex classes, $F(1, 376) = 1.10, p < .001$ were significant, confirming trends. However, specific contrasts revealed some school differences. These differences showed that up to and including Grade 5 there were no significant differences between the gender cleavage indices for successive grades in each type of school (LSD procedure, $p < .05$). In both coeducational and single-sex schools indices in Grade 6 were significantly lower than in Grade 5. This is the point where there is the first evidence of a substantial reduction in gender cleavage. There is no further reduction in gender cleavage indices in either school setting in the contrasts between Grade 6 and 7. However, between Grade 7 and 8 the findings for the two school types diverge, with significantly higher gender cleavage indices in Grades 8 and 9 than in Grade 7 for single-sex school students. These contrasts were not significant for coeducational students (see Table 4 for means and mean square error).

Table 4
Mean Gender Cleavage Index Values for Girls and Boys Enrolled in Grades 3-10 in Single-sex and Coeducational Classes (N = 660)

Grade Level	Single Sex	Coeducational
3	0.88	0.87
4	0.86	0.90
5	0.85	0.91
6	0.76	0.82
7	0.71	0.76
8	0.79	0.76
9	0.79	0.72
10	0.69	0.62

Note: Mean Square error = 0.02.

Friendship Qualities Analysis

A four-way repeated measures ANOVA was carried out to determine the effect of sex, grade (Grade 3-10), school type (single-sex/coeducational) and rating type (ratings of same-/opposite-gender friends) on students' ratings of friendship qualities. A significant main effect was found for rating type, $F(5, 529) = 146.87, p < .001$. Ratings for same-gender friends were significantly higher than were ratings for opposite-gender friends on all five subscales of the Friendship Qualities Scale. Furthermore, all two-way interactions involving rating type were significant ($p < .05$), as well as one of the three-way interactions. Therefore separate three-way ANOVAS were carried out for ratings of same- and opposite-gender friends.

Opposite-gender Friendship Qualities Analysis

A series of three-way between-groups ANOVAS was carried out to determine the effects of sex, grade and school type on ratings of friendship quality for opposite-gender friends on each of the five subscales of the Friendship Qualities Scale. There

were no significant three-way interactions. However, in three out of the five subscales, there were significant two-way interactions.

For Companionship, sex interacted significantly with school type, $F(1, 533) = 10.81, p < .01$. Specific effects (LSD procedure $p < .05$) revealed that boys in single-sex classes rated opposite-gender friends more highly for companionship than did boys in coeducational classes. There were no significant differences for girls. Furthermore, there were sex differences in that girls rated their opposite-gender friends more highly for companionship than did boys, but only in coeducational classes (see Table 5 for means and mean square error).

Table 5
*Mean Companionship Ratings for Opposite-gender
Friends of Girls and Boys Enrolled in Single-sex and
Coeducational Classes (N = 565)*

Gender	Single-Sex	Coeducational
Girls	2.95	2.75
Boys	3.13	2.44

Note: Mean Square error = 0.75.

A similar Gender x School Type interaction occurred for Conflict, $F(1, 533) = 7.54, p < .01$. Simple effects tests revealed that girls in coeducation classes reported higher levels of conflict with opposite-gender friends than did girls in single-sex classes, and higher ratings than their male counterparts in coeducational classes (see Table 6 for means and mean square error).

Table 6
*Mean Conflict Ratings of Opposite-gender
 Friends by Girls and Boys Enrolled in Single-sex and
 Coeducational Classes (N = 565)*

Gender	Single-Sex	Coeducational
Girls	2.57	2.81
Boys	2.53	2.32

Note: Mean Square error = 0.78.

In the Closeness subscale, there was a significant interaction between school type and grade, $F(7, 533) = 2.56, p < .05$. Linear trend analyses were significant and confirmed greater closeness ratings for higher coeducational grades, $F(1, 215) = 55.60, p < .001$, and similarly in single-sex classes, $F(1, 318) = 12.05, p < .001$. However, the trends in coeducational and single-sex classes, $F(1, 533) = 14.30, p < .001$ were significantly different. In coeducational classes, ratings were highest in Grade 10, but in single-sex classes they were highest in Grade 7 (see Table 7 for means and mean square error).

Table 7
*Mean Closeness Ratings of Opposite-gender Friends
 by Girls and Boys Enrolled in Grades 3-10 in Single-sex
 and Coeducational Classes (N = 565)*

Grade Level	Single-Sex	Coeducational
3	3.54	2.76
4	3.41	2.75
5	3.64	3.23
6	3.76	3.49
7	4.02	3.50
8	3.66	3.61
9	3.96	3.75
10	3.96	4.26

Note: Mean square error = 0.78.

For the remaining subscales there were no significant interactions. However, there was a significant main effect for school type in the case of Help, $F(1, 533) = 12.88$, $p < .001$ and Security, $F(1, 533) = 8.04$, $p < .01$. In both Help and Security subscales, students in single-sex classes ($M = 3.49$ for Help, 3.05 for Security) rated their opposite-gender friends more highly than did students in coeducational classes ($M = 3.21$ for Help, 2.89 for Security). This effect was also found for Closeness (single-sex $M = 3.74$; coeducational $M = 3.42$).

There was a significant main effect for grade in the case of Help, $F(1, 533) = 12.56$, $p < .001$ and Security, $F(1, 533) = 7.10$, $p < .001$. Separate contrasts (LSD procedure, $p < .05$) indicated that ratings by high school students were higher than those by primary school students.

In the absence of significant interactions for the Help subscale, there was a significant main effect for sex, $F(1, 533) = 8.34$, $p < .01$, with girls ($M = 3.46$) rating their opposite-gender friends more highly for this friendship quality than did boys ($M = 3.24$). Moreover, a similar main effect was found for the Conflict subscale ($M = 2.69$ for girls and $M = 2.42$ for boys) and the Closeness subscale ($M = 3.66$ for girls and $M = 3.50$ for boys).

Same-gender Friendship Qualities Analysis

A series of three-way between-groups ANOVAS was carried out to determine the effects of sex, grade and school type on ratings of friendship quality for same-gender friends on each of the five subscales of the Friendship Qualities Scale. There was one significant three-way interaction for the Companionship subscale, $F(7, 533) = 2.88$, $p < .01$. Specific effects (LSD procedure $p < .05$) revealed school differences but only in

Grades 5 and 8. Grade 5 girls in coeducational classes rated same-gender friends more highly than did girls in single-sex classes. Conversely in Grade 8, boys in single-sex classes rated same-gender friends more highly than did boys in coeducational classes. Specific effects tests also revealed sex differences. In single-sex classes, Grade 9 and 10 girls rated their same-gender friends more highly for companionship than did boys. In coeducational classes, Grade 5, 6 and 8 girls rated same-gender companionship more highly than did their male counterparts (see Table 8 for means and mean square error).

Table 8
*Mean Companionship Ratings of Same-gender Friends
By Girls and Boys Enrolled in Grades 3-10 in Single-sex
and Coeducational Classes (N = 565)*

Grade Level	Single-Sex		Coeducational	
	Girls	Boys	Girls	Boys
3	4.04	3.87	3.71	4.02
4	3.94	3.84	3.83	3.79
5	4.00	3.80	4.50	3.61
6	3.99	3.86	4.05	3.48
7	4.03	3.73	3.13	3.84
8	3.76	3.94	4.07	3.33
9	4.04	3.56	3.73	3.83
10	4.00	3.50	4.08	3.67

Note: Mean square error = 0.42.

In the Closeness subscale, there was a significant two-way interaction between sex and grade, $F(7, 533) = 2.24, p < .05$. Closeness ratings remained relatively stable over grade for girls. Linear trend analysis was not significant, $F(1, 264) = 3.77, p > .05$. In contrast, linear trend analysis confirmed lower Closeness ratings in higher grades for boys, $F(1, 269) = 19.03, p < .001$. No other contrasts were significant (see Table 9 for means and mean square error).

Table 9
*Mean Closeness Ratings of Same-gender Friends
By Girls and Boys Enrolled in Grades 3-10 (N = 565)*

Grade Level	Girls	Boys
3	4.36	4.27
4	4.43	3.80
5	4.52	3.79
6	4.36	3.67
7	4.26	3.47
8	4.10	3.62
9	4.19	3.54
10	4.39	3.55

Note: Mean square error = 0.42.

For the remaining subscales there were no significant interactions. However, there was a significant main effect for gender in the case of Conflict, $F(1, 533) = 10.07$, $p < .01$; Help, $F(1, 533) = 41.46$, $p < .001$ and Security, $F(1, 533) = 68.12$, $p < .001$. Boys ($M = 2.81$) reported a higher level of conflict with same-gender friends than did girls ($M = 2.56$). However, girls rated same-gender friends more highly than did boys for Help (girls $M = 4.22$; boys $M = 3.85$) and Security (girls $M = 3.72$; boys $M = 3.33$).

There was a significant main effect for school type in the case of Help, $F(1, 533) = 5.48$, $p < .05$ and Security, $F(1, 533) = 4.94$, $p < .05$. For Help, students in single-sex classes ($M = 4.10$) rated same-gender friends more highly than did students in coeducational classes ($M = 3.97$). A similar differential was found for Security, with the mean for single-sex classes (3.57) higher than that for coeducational classes (3.47).

Prediction of Gender Cleavage by Friendship Quality

In order to investigate possible connections between perceived friendship quality and gender-based friendship choices, a series of multiple regression analyses was carried

out using the gender cleavage index as the dependent variable. Predictor variables were generated from the five subscales of the Friendship Qualities Scale. Gender bias in students' perceptions of friendship quality was quantified by calculating an index for each subscale. Same-gender ratings were divided by the sum of same-gender and opposite-gender ratings, yielding a proportional score between 0 and 1. Indices ranged from .37 to 1.00 ($M = .80$, $SD = .16$), with higher values indicating greater same-gender bias in perceptions of friendship quality. In other words, students with higher scores attribute proportionally more of the particular quality to their own gender than to the opposite gender. Forward stepwise regressions were carried out separately for boys and girls in single-sex and coeducational classes.

Table 10 shows the results for girls in single-sex classes

Table 10
Summary of Hierarchical Regression Analysis for Indices of Gender Bias in Friendship Qualities Predicting Gender Cleavage Based on Best Friend Nominations by Girls in Single-sex Classes (n = 163)

Variable	B	SE B	β
Step 1			
Closeness (SGPI)	0.78	.17	.33*
Step 2			
Closeness (SGPI)	0.65	0.22	.28*
Companionship (SGPI)	0.16	0.16	.09

Note: $R^2 = .112$ for Step 1 ($p = < .001$); $\Delta R^2 = .006$ for Step 2 ($p = > .05$). SGPI = Same-Gender Preference Index. * $p < .05$.

The analysis was completed in two steps with gender bias in Closeness as the only significant predictor of gender cleavage, accounting for 11% of the variance in gender cleavage. When the indices of gender bias in Companionship were entered into the

equation, there was a marginal and non-significant increase of less than 1% in the variance accounted for. The standardised beta weights are positive, indicating covariance between same-gender bias in perceptions of closeness and same-gender preference in friendship choices for girls in single-sex classes.

Table 11 shows the results for girls in coeducational classes

Table 11

Summary of Hierarchical Regression Analysis for Indices of Gender Bias in Friendship Qualities Predicting Gender Cleavage Based on Best Friend Nominations by Girls in Coeducation Classes (n = 117)

Variable	<i>B</i>	<i>SE B</i>	β
Step 1			
Help (SGPI)	0.87	0.13	.53*
Step 2			
Help (SGPI)	0.57	0.17	.35*
Companionship (SGPI)	0.39	0.16	.27*

Note: $R^2 = 0.285$ for Step 1 ($p < .001$); $\Delta R^2 = 0.037$ for Step 2 ($p < .05$). SGPI = Same-Gender Preference Index. * $p < .05$.

The analysis was completed in two steps with gender bias in perceptions of Help as a significant predictor of gender cleavage, accounting for 28% of the variance in gender cleavage. When gender bias indices for Companionship were entered into the equation there was a small but significant increase of nearly 4% in the variance accounted for.

The standardised beta weights are positive, indicating covariance between same-gender bias in perceptions of help and companionship and same-gender preference in friendship choice. However, from the results it is apparent that same-gender bias in perceptions of help are more important than bias in perceptions of companionship in predicting gender cleavage for girls in coeducational classes.

Table 12 shows the results for boys in single-sex classes

Table 12
Summary of Hierarchical Regression Analysis for Indices of Gender Bias in Friendship Qualities Predicting Gender Cleavage Based on Best Friend Nominations by Boys in Single-Sex Classes (n = 171)

Variable	B	SE B	β
Step 1			
Companionship (SGPI)	0.58	0.13	.33*
Step 2			
Companionship (SGPI)	0.40	0.18	.22*
Closeness (SGPI)	0.25	0.17	.14

Note: $R^2 = .106$ for Step 1 ($p = < .001$); $\Delta R^2 = .011$ for Step 2 ($p < .05$). SGPI = Same-Gender Preference Index. * $p < .05$.

The analysis was completed in two steps with gender bias in Companionship as the only significant predictor of gender cleavage, accounting for nearly 11% of the variance in gender cleavage. When Closeness indices were entered into the equation there was a non-significant increase of less than 1% in the variance accounted for. The standardised beta weights are positive, indicating covariance between same-gender bias in companionship and same-gender preference in friendship choices for boys in single-sex classes.

Table 13 shows the results for boys in coeducational classes

Table 13

Summary of Hierarchical Regression Analysis for Indices of Gender Bias in Friendship Qualities Predicting Gender Cleavage Based on Best Friend Nominations by Boys in Coeducational Classes (n = 114)

Variable	<i>B</i>	<i>SE B</i>	β
Step 1			
Companionship (SGPI)	0.79	0.12	.51*
Step 2			
Companionship (SGPI)	0.51	0.16	.33*
Closeness (SGPI)	0.42	0.16	.27*
Step 3			
Companionship (SGPI)	0.44	0.17	.29*
Closeness (SGPI)	0.30	0.19	.19
Help (SGPI)	0.26	0.20	.16

Note: $R^2 = .263$ for Step 1 ($p < .001$); $\Delta R^2 = .042$ for Step 2 ($p < .05$); $\Delta R^2 = .011$ for Step 3 ($p > .05$). SGPI = Same-Gender Preference Index. * $p < .05$.

The analysis was completed in three steps with the Companionship and Closeness indices as significant predictors of gender cleavage. Same-gender bias in companionship alone accounted for 26% of the variance in gender cleavage. When Closeness indices were entered into the equation there was a small but significant increase of 4% in the variance accounted for. However, when Help indices were entered into the equation there was a non-significant increase. The standardised beta weights indicate covariance between same-gender bias in companionship and closeness and same-gender preference in friendship choice. However, from the results it is apparent that same-gender bias in perceptions of companionship are more important than bias in perceptions of closeness in predicting gender cleavage for boys in coeducational classes.

Discussion

The aim of this study was to investigate how coeducational and single-sex school environments influence gender cleavage and friendship quality, including both sex differences and the developmental trajectory in these aspects of children's peer relationships. A further aim was to investigate how ideas of friendship quality are related to gender cleavage.

Gender Cleavage

The current study investigated whether the presence or absence of opposite-gender peers in the school environment would increase or decrease the level of opposite-gender friendships. In other words would single-sex schooling intensify gender cleavage? In the absence of a significant main effect for school type, it was apparent that the presence or absence of opposite-gender peers in the school environment had no significant effect overall on gender cleavage. This suggests that the experience of single-sex schooling does not increase the level of same-gender friendships at the expense of opposite-gender friendships, which by necessity have to be cultivated outside the school environment. By the same token, a ready-made pool of opposite-gender peers at school does not increase the rate of choosing opposite-gender friends relative to same-gender friends. Epstein (1986) in her review contends that the gender mix in classrooms can influence friendship choice, but in the present study there was no evidence that a whole-school coeducational or single-sex environment had a significant impact. Moreover, Thorne (1986) found that when classroom interventions to decrease gender cleavage were terminated; self segregation quickly reverted to the previously observed high

levels. This research, plus the present findings that immersion in single-sex and coeducational school environments had little impact, attests to the contention that gender cleavage is indeed a powerful phenomenon that may be only minimally or transitionally influenced by environmental manipulations.

However, significant interactional effects in the results suggested that the type of school environment might have some influence on both the developmental trajectory of gender cleavage across middle childhood and adolescence, and some influence on the relative degree of gender cleavage found in boys and girls. Therefore, it appears that environmental influences in terms of gendered school environments may be operating in a more subtle way rather than grossly affecting the level of observed gender cleavage.

In the present study boys in a coeducational environment showed significantly higher levels of gender cleavage than did coeducational girls, but this effect did not occur for students in single-sex classes. Bukowski et al. (1993) using a similar sociometric method to the present study, found that Grade 3 to 6 girls and boys in coeducational schools exhibited a similar degree of same-gender preference. The present findings however, are based on results from students in a wider age range from Grades 3 to 10. Few nomination-based studies that have examined sex differences in gender cleavage have included high school students. Bjerstedt (1956) found no evidence of sex differences in gender cleavage amongst Danish Grades 3 to 8 students and likewise Gronlund (1959) with US Grade 7 to 12 students. Burton Smith (1998) in her review of sex differences in nomination-based sociometric studies contends that culture and the choice-criterion used are significant factors that may affect results. For example, contrasting results regarding sex differences have been found between US and Swedish Grade 5 children (Cohen, D'Heurle & Widmark-Petersson, 1980). Burton Smith (1998)

found that Australian Grade 4 and 6 girls showed greater same-gender preference than did boys in the same grades when a limited playmate nomination was used.

The present study using an unlimited friendship nomination has shown the opposite effect in a coeducational sample with a greater age range. The accompanying finding of no sex differences in gender cleavage between single-sex schooled boys and girls suggest that Australian boys might be more susceptible than are girls to environmental influences. It could be conjectured that the presence of the opposite gender in their everyday school environment may heighten same-gender preference in boys. This is made clear by the contrast between the results in same-sex and mixed-sex environments. Previous research has not drawn these contrasts. The presence of girls in boys' learning environments appears to make a difference to the comparative degree of same-gender preference, but boys in girls' learning environments does not have a similar effect. Girls in coeducational classes were more amenable than were boys to opposite-gender friendships, and in these settings girls may be the primary instigators of opposite-gender contact. However, this suggestion would need to be confirmed by further research perhaps using observation techniques in different school settings.

As shown in previous research, the present findings indicated that maturation expressed in the grade factor is perhaps the most significant influence on gender cleavage. In the current study, there was a general trend for lower same-gender preference in higher grades as hypothesised. These findings are consistent with previous research in coeducational schools (eg, Eder & Hallinan, 1978; Shrum, Cheek & Hunter, 1988). However, the type of school that students attended had a significant effect on findings, and therefore on the possible developmental trajectory of gender cleavage. From the present cross-sectional findings, it would appear that gender cleavage begins to

break down in both types of school at Grade 6. Therefore, the hypothesis that the absence of same-gender peers would delay this watershed was not upheld. The grade-related pattern of gender cleavage was highly similar in both school settings up to Grade 6. However, in the high school grades some significant school differences emerged. In single-sex classes there was an uncharacteristically higher same-gender preference in Grades 8 and 9 compared with Grade 7, a finding that was absent in coeducational classes. For single-sex classes it seems that the absence of opposite-gender peers may interact with maturational factors at puberty to bring about an uncharacteristic strengthening of same-gender preference in high school. Alternately this effect might be the result of substantial numbers of students transferring from coeducational primary schools to single-sex schools in the early high school years. Immersion in a new single-sex environment after coeducational primary schooling may affect the emerging gender-based schemata of early adolescent children who might identify more strongly with their new single-sex environment, thus contributing to a greater gender cleavage effect. However, this hypothesis would need to be investigated in relation to the school history of participants.

The present study helps to set in context the role of environmental factors in the determination of gender cleavage. Theoretical accounts have largely focused on individual-level factors (eg, Maccoby, 1994; Martin, 1994) and on group-level processes (eg, Thorne, 1986) in the emergence and maintenance of gender cleavage. Burton Smith (1998) investigated the relative contributions of individual-level factors such as gender stereotyping and behavioural compatibility, and group processes represented by indices of class-based segregation. She found that overall, group processes were more important than were individual-level factors in the maintenance of gender cleavage during middle

childhood. The present findings deal at a still wider level with possible factors important in maintaining gender cleavage. The absence of a strong overall school effect influencing gender cleavage attests to the relatively minor role that environmental variables such as gendered school environments play. It appears that organisational structures in schools and social engineering to alter such structures in the interests of decreasing gender cleavage may be a less effective strategy than concentrating on the group dynamics that occur within and between the two gender groups in schools.

Friendship Qualities

Previous research into friendship qualities has focused almost exclusively on same-gender friendships. There has been little research into perceptions of opposite-gender friends and the qualitative and quantitative differences that might exist. As predicted analysis revealed that children consistently rated more highly the quality of their relationships with same-gender friends than with opposite-gender friends. Companionship, help, security and closeness were rated significantly more highly for same-gender friends than for opposite-gender friends. From these results and gender cleavage findings, it appears that children not only have more friends of the same sex but they also achieve a higher quality of relationship with same-gender friends regardless of age. Whether this is a cause or consequence of same-gender preference is disputable. It may be that greater similarity in same-gender friendships promotes these values, or it could be that children gravitate more towards same-gender friends because they provide positive interpersonal characteristics more readily than do peers of the opposite sex.

Same- and opposite-gender friendships were examined separately in terms of the qualities that children perceived in these friendships. Sex differences and grade-related variations were explored in relation to school type. Different patterns of results were found in same- and opposite-gender friendships. This indicates that not only are there gross differences in the perceptions of same- and opposite-gender friendships, there are also subtle differences for boys and girls of varying ages in different school environments.

Opposite-Gender Friendship Qualities

The present results showed that for ratings of opposite-gender friends there were a number of significant school effects as predicted. Students in single-sex classes rated all the positive qualities (companionship, help, security and closeness) more highly than did their counterparts in coeducational classes. It seems that for opposite-gender friendships there may be an idealisation factor by students in single-sex classes, who see the other sex more positively than do coeducational students who are more exposed to everyday opposite-gender interactions. However, for companionship only boys upheld the trend for students in single-sex classes, rating their opposite-gender friends more highly than did coeducational students. Therefore, in regard to perceptions of companionship, it would appear that boys in single-sex classes may idealise girls as companions, but girls in single-sex classes are no different from their coeducational counterparts in their view of boys as companions.

There were significant sex differences in the case of help and closeness. Girls overall rated their opposite-gender friends higher than did boys for these qualities, indicating greater perceived help and closeness in boys than boys saw in girls. This is

consistent with Sharabany et al.'s (1981) research where girls reported higher ratings for dimensions related to closeness and help with opposite-gender peers than did boys.

However, for conflict, the type of school further elaborated sex differences. Girls in coeducational classes reported the highest levels of perceived conflict with opposite-gender friends, significantly exceeding the ratings by both girls in single-sex classes and boys in coeducational classes. From these findings it seems that the presence of boys in coeducational school environments might be impacting negatively on perceptions of opposite-gender relationships for girls. They see greater conflict in their relationships with boys in contrast to boys, for whom the presence of girls in their school environment does not appear to be related to perceived levels of friendship conflict. These effects could be clarified by further investigation using interview techniques.

Grade-related effects were indicative of possible developmental trends where increases in friendship quality are observed with age (Sharabany et al., 1981). High school students consistently reported higher levels of friendship quality than did primary school students for their opposite-gender friendships. Older children not only reported a greater number of opposite-gender friends but they also seem to get more out of these relationships in adolescence than during childhood in terms of help and security. This finding is also consistent with Sharabany et al.'s 1981 research where similar dimensions showed that ratings for opposite-gender friends increased in high school.

Same-Gender Friendship Qualities

In contrast to ratings of opposite-gender friends, ratings for same-gender friends showed more limited and less consistent school effects. Students in single-sex classes

rated same-gender friends more highly for help and security than did students in coeducational classes but there were no school differences for any of the other qualities. Therefore, there did not seem to be the same degree of idealisation of same-gender friends as opposite-gender friends in single-sex schools.

However, sex differences were more evident, with girls rating same-gender friends more highly for the positive friendship qualities; help, security, companionship and closeness than did boys. This is consistent with hypotheses and with prior research (eg, Sharabany et al., 1981; Jones & Dembo, 1989; Furman & Buhrmester, 1992; Bukowski et al. 1993a; Jones & Costin, 1995). These effects occurred regardless of school environment except in the case of companionship where there were some limited school effects. Therefore, the hypothesis that masculinised and feminised school environments would exaggerate sex differences in friendship expectations was generally not upheld.

In relation to negative friendship qualities, boys perceived greater conflict with same-gender friends than did girls. Parker and Asher (1993) in a friendship quality study found no sex differences in the amount of reported conflict for student's best friends, but found that boys reported more difficulty resolving conflict. It seems that girls view their same-gender friendships more positively than do boys, and may achieve a higher level of interpersonal satisfaction from these relationships, with more positive and less negative interactions. This largely occurs regardless of grade.

There was a clear grade-related trend for only one of the same-gender friendship qualities. In the case of closeness there was a significant trend for lower ratings of closeness in boys with higher grade whereas closeness ratings for girls was similar in all grades. This finding coupled with the sex difference findings for conflict shows some

fundamental differences between close friendships in boys and girls. In terms of boys' same-gender friendships, not only does closeness appear to decline as they get older, but they also report more conflict with other boys they regard as close friends. In the case of girls closeness remains higher and more stable, while conflict with close girlfriends is lower than that found in boys. This trend is in line with much previous research in friendship qualities (eg, Sharabany, et al., 1981; Bigelow, 1982; Berndt, 1982; Moore & Boldero, 1991; Clark and Bittle, 1992).

The remaining positive friendship qualities of companionship, help and security in same-gender friendships do not appear to increase with age in the same way as they do for opposite-gender friends. This is consistent with Sharabany et al.'s (1981) research where similar positive friendship qualities increased with grade for opposite-gender friends and remained stable for same-gender friends.

In summary, the most consistent factor affecting same-gender friendships is the child's sex. Whereas the school environment most consistently showed its influence in opposite-gender friendship qualities. From these findings it would appear that students' perceptions of opposite-gender friendships might be influenced more strongly by the absence or presence of that gender group in the everyday school environment. Whether they have a day-to-day experience with opposite-gender peers is highly dependent on whether they are in a single-sex or coeducational class. It is this absence or presence of the opposite sex that seems to make a difference to how boys and girls of different ages view their opposite-gender peers, but not their same-gender peers. Whether they are in single-sex or coeducational settings young people will always be in the company of same-sex peers.

Prediction of Gender Cleavage by Gender Bias in Friendship Quality Perceptions

In the analysis involving students' perceptions of friendship qualities predicting gender cleavage there were contrasting results for boys and girls. For boys, regardless of the type of school attended, gender bias in perceptions of companionship alone was predictive of gender cleavage, with no other measure of gender bias in friendship quality accounting for a significant proportion of the variance in gender cleavage. In regard to the results for boys in the study the hypothesis that there would be differential importance in the predictive ability of the different indices was strongly upheld.

This predictive relationship was stronger for boys in a coeducational setting with same-gender bias indices for companionship accounting for 26% of the variance, compared to 11% of the variance for boys in single-sex classes. The positive direction of this predictive relationship indicates that stronger the perception by boys of companionship being available through same-gender contact, the greater is their preference for same-gender friendship. The Companionship Scale of the Friendship Qualities Scale measures companionship in terms of voluntary time spent together in shared activities, with items such as "My friend thinks of fun things to do together" and "My friend and I go to each other's houses after school and on the weekends" (Bukowski et al., 1994). Previous research indicates that boys principally relate to one another on the basis of shared activities (Maccoby, 1990), and this may be an important factor in the single predictive relationship found. It would appear that the remaining positive friendship qualities are less important in boys' same-gender friendships and therefore any predictive relationship with preference for same-gender friends would be weaker.

For girls the significant predictors varied from those of boys, thus upholding the hypothesis of sex differences in the prediction of gender cleavage. Furthermore, for girls there were differences according to the type of school environment. Gender bias in perceptions of closeness was most predictive of gender cleavage for girls in single-sex classes, accounting for 11% of the variance in gender cleavage. In contrast, gender bias in perceptions of help was most predictive of gender cleavage for girls in coeducational settings, accounting for 28% of the variance in gender cleavage. According to Bukowski et al. (1994) the Help Scale of the Friendship Qualities Scale, comprises items relating to aid (mutual help and assistance) and protection from victimization (willingness to come to another child's aid if another child was bothering him or her),

On the basis of these findings it appears that girls in coeducational and single-sex classes have a preference for same-gender friends for markedly different reasons, and this might have something to do with the presence of boys in the school environment. Thus coeducational girls' preference for same-gender friendships is related to the perceived ability of other girls to help and protect them from victimization, and this may be due to feelings of being challenged by boys in the school environment. Significantly this study found that girls in a coeducational setting reported the highest level of conflict with boys, exceeding that of single-sex girls. Leaper (1994) argues that girls have a less domineering interactional style than boys and as a consequence withdraw instead of challenge the dominant male culture in schools.

In contrast, gender bias in the perceptions of help did not contribute significantly to the prediction of gender cleavage for girls in single-sex schools. Instead closeness was the strongest predictor. This was in line with the hypothesis that gender bias in intimacy-related qualities would be most strongly related to gender cleavage

because of their relative importance in female same-gender relationship. This is also consistent with Maccoby's (1990) assertion that girls relate on the basis of intimacy including shared confidences. Thus for girls in a single-sex environment the hypothesised predictive relationship held in contrast to girls in a coeducational environment where a perceived need for help and protection apparently overrode the more usual quality that typifies females' relationships in predicting gender cleavage.

Summary

The current findings provide important information about the effect of environmental factors on gender cleavage and friendship quality. First, it is apparent that the absence of opposite-gender peers in the school environment has a minimal impact on gender cleavage, with experience of single-sex schooling not contributing significantly to increases in same-gender preference. In terms of the different factors maintaining gender cleavage during childhood and early adolescence, it seems that individual-level factors such as age, and group processes are more important than are environmental variables such as the gender structure of the school.

In relation to friendship qualities the present study showed that the school environment had some impact, in that perceptions of opposite-gender friendship qualities were affected by the absence or presence of opposite-gender peers in the school environment. Same-gender friendship qualities were generally perceived as similar between the two types of schools probably because students have greater experience of same-gender friendship regardless of which school environment they find themselves in.

The present study also demonstrated important links between friendship qualities and friendship choice, two aspects of peer relationships that heretofore have been investigated separately. Gender bias in perceived friendship qualities significantly and

substantially predicted gender cleavage and furthermore, environmental factors were also found to influence predictive relationships, modifying the predictors of gender cleavage for girls but not for boys. Perceived friendship qualities appear to be important determiners of friendship choice, and are a further factor that could be fruitfully investigated in future studies to throw light on the mechanisms underlying gender cleavage in peer relationships.

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Appendices

Appendix A

Parent information letter and consent form



UNIVERSITY OF TASMANIA

Department of Psychology

RESEARCH PROJECT ON CHILDREN'S FRIENDSHIPS INFORMATION SHEET FOR PARENTS

Dear parents

This is to let you know about a research project at your child's school. The researchers are Rosanne Rawlinson who lectures in developmental and educational psychology at the University of Tasmania and Sally Leeson who is completing her Master of Psychology (Education) degree. We are interested in what boys and girls in Grade 3 to 10 think about friendships. We're also interested in whether single-sex and coeducational schools influence these ideas, and children's choice of friends.

We'd like.....to participate in our project. Students will fill in two questionnaires in class. This will take about 30 minutes. The questionnaires will ask students to rate some statements about their friendships, for example "My friend thinks of fun things for us to do together". Also they will need to make a list of the first names of their friends, and let us know the age and sex of their sisters and brothers, and their own age. We'll need to know some school history, including how long they have spent at their present school and any previous schools. We will also be asking some questions about which clubs and associations they belong to, and which sports they play. We'll be presenting the results of this research to school staff and any interested parents towards the end of 1998.

We'll explain the research to the students in a way they will be able to understand. We'll arrange the classroom so that students can fill in the questionnaires privately. As parents, you can withdraw your children from the research at any time. We'll make it clear to students that they can decide not to continue at any time during the classroom session. Teachers will be present in the classroom during the questionnaire administration. All student's answers and identities will be kept private. Results from the whole group of students, not individuals, will be analysed.

The research project has the approval of the University of Tasmania Ethics Committee and the Principal, Mr Toppin has agreed to this project going ahead in the school. The staff also have given their support to it.

We would greatly appreciate your support of the project, by giving your permission for to participate. Could you please fill in the form provided, detach it, and return it to the school via your son or daughter as soon as possible? Please keep this sheet for your information. If you would like to know more about the research, please feel free to ring Rosanne Rawlinson on 62262237 during business hours, or on 62278078 after 6pm.

Rosanne Rawlinson M.Ed. (Psych) (Exeter, U.K.)

Sally Leeson B.A., Dip. Psych (Tas.)

RESEARCH PROJECT ON CHILDREN'S FRIENDSHIPS

STATEMENT OF INFORMED CONSENT

Parent/s: Please complete this part of the form and return to your child's class teacher.

I have read and understood the information sheet for this research. The nature and possible effects of the research, and the activities my child/ren will be involved in have been explained to me. I understand that the study will involve my child/ren answering a questionnaire about friendships and making a list of their friends during class. I understand that while some children may feel uncomfortable talking about their friendships, the questions have been carefully worded and children's privacy will be guarded at all times to minimise any negative effects. Any questions that I have asked have been answered to my satisfaction. I also understand that I can withdraw my child from the research at any time without prejudice, and that I will have access to a copy of the research report on its completion.

I hereby give consent for(name of child/ren) to take part in this research, and agree that data gathered for the research may be published, provided that my child's/children's identities are not revealed.

.....
(Parents/guardian signature)

Date.....

To be filled in by Researcher at the time of the questionnaire administration:

I have explained this research and the implications to

.....
(child/ren's name/s). I believe the consent is informed and that he/she understands the implications of participation

.....
(Researcher's signature)

Date.....

Appendix B



Unlimited nomination task

(Bukowski, Gauze, Hoza & Newcomb, 1993)

Grades 3 to 6 form and grades 7 to 10 form

1. Think about your friends inside and outside school.

2. In the first column, write down the *first* name of your friends who are the *same* sex as you. If you're a boy, write down the name of all the boys who are your friends. If you're a girl, write down the name of all the girls who are your friends. You can write as many names as you like, or none at all.
3. Look at each name. If the person goes to your school, then write **S** next to the name. If the person *does not* go to your school, then write **N**.
4. In the second column, write down the *first* name of your friends who are the *opposite* sex to you. If you're a boy, write down the name of all the girls who are your friends. If you're a girl, write down the name of all the boys who are your friends. You can write as many names as you like, or none at all.
5. Look at each name. If the person goes to your school, write **S** next to the name. If the person *does not* go to your school, write **N**.

Friends who are the same sex as you	Friends who are the opposite sex to you
	

We can use some numbers to say how true you think these sentences are. If you think that the sentence is *very true* for you, put a circle around the number 5. If you think that the sentence is *very untrue* for you, put a circle around the number 1. If what you think is in between, you should choose the number that says how you feel.

Let's try some practice sentences

Circle one number only.

Circle one number only.	sometimes true or sometimes true				
	very untrue	untrue	untrue	true	very true
1. Dogs are friendly.	1	2	3	4	5
2. I like playing sport.	1	2	3	4	5
3. Hanson are the best group.	1	2	3	4	5

FRIENDS: Who are your friends?

1. Think about your friends inside and outside school.
2. In the first column, write down the *first* name of your friends who are the *same sex* as you. If you're a boy, write down the name of all the boys who are your friends. If you're a girl, write down the name of all the girls who are your friends. You can write as many names as you like, or none at all.
3. Look at each name. If the person goes to your school, then write **S** next to the name. If the person *does not* go to your school, then write **N**.
4. In the second column, write down the *first* name of your friends who are the *opposite sex* to you. If you're a boy, write down the name of all the girls who are your friends. If you're a girl, write down the name of all the boys who are your friends. You can write as many names as you like, or none at all.
5. Look at each name. If the person goes to your school, write **S** next to the name. If the person *does not* go to your school, write **N**.

Friends who are the same sex as you	Friends who are the opposite sex to you

Appendix C

Original North American version of the *Friendship Qualities Scale*

(Bukowski, Hoza & Boivin, 1994)

My friend and I spend all our free time together.

My friend thinks of fun things for us to do together.

***My friend and I go to each other's houses after school and on the weekends.**

Sometimes my friend and I just sit around and talk about things like school, sports, and things we like.

I can get into fights with my friend.

***My friend can bug or annoy me even though I ask him not to.**

My friend and I can argue a lot.

My friend and I disagree about many things.

***If I forgot my lunch or needed a little money, my friend would loan it to me.**

My friend helps me when I am having trouble with something.

My friend would help me if I needed it.

***If other kids were bothering me, my friend would help me.**

My friend would stick up for me if another kid was causing me trouble.

If I have a problem at school or at home, I can talk to my friend about it.

***If there is something bothering me, I can tell my friend about it even if it is something I cannot tell to other people.**

***If I said I was sorry after I had a fight with my friend, he would still stay mad at me.**

***If my friend or I do something that bothers the other one of us, we can make up easily.**

If my friend and I have a fight or argument, we can say 'I'm sorry' and everything will be alright.

***If my friend had to move away, I would miss him.**

I feel happy when I am with my friend.

***I think about my friend even when my friend is not around.**

When I do a good job at something, my friend is happy for me.

***Sometimes my friend does things for me, or makes me feel special.**

(* The original statements which were reworded in the Australian study)

Appendix D

Friendship Qualities Scale questionnaire used in Australian study

Grades 3 to 6 form and grades 7 to 10 form

When you look at these sentences, you will be thinking about *one* best friend who is a girl. If you can't think of a best friend who is a girl, think of a girl that you know well and like.

Read each sentence carefully and choose the number that says what you feel. Make sure that you are thinking about the *same* friend for all the sentences.

Also, choose the number that says what you think **NOW**, not what you would like your friend or your friendship to be. Say you and your friend fight a lot. You might wish that you didn't fight. But you would need to circle true or very true for this sentence because that is how your friendship is now.

Please put a circle around just *one* number.

	very untrue	untrue	sometimes true or sometimes untrue	true	very true
1. She and I spend all our free time together.	1	2	3	4	5
2. I can get into fights with her.	1	2	3	4	5
3. If I forgot my lunch or needed some money, she would lend it to me.	1	2	3	4	5
4. If I have a problem at school or at home, I can talk to her about it.	1	2	3	4	5
5. If she moved away, I would miss her.	1	2	3	4	5
6. She thinks of fun things for us to do together.	1	2	3	4	5
7. She can annoy me even though I ask her not to.	1	2	3	4	5
8. She helps me when I'm having trouble with something.	1	2	3	4	5
9. When something worries me, I can tell her about it even if it is something I can't tell other people.	1	2	3	4	5
10. I feel happy when I'm with her.	1	2	3	4	5

	very untrue	untrue	sometimes true or sometimes untrue	true	very true
11. She and I go to each other's houses after school or on the weekends.	1	2	3	4	5
12. She and I can argue a lot.	1	2	3	4	5
13. She would help me if I needed it.	1	2	3	4	5
14. If I had a fight with her, and I said I was sorry, she'd still be mad at me.	1	2	3	4	5
15. When she's not around. I sometimes think about her.	1	2	3	4	5
16. Sometimes she and I just sit around and talk about things like school, sports, and things we like.	1	2	3	4	5
17. She and I disagree about many things.	1	2	3	4	5
18. If other kids were annoying me, she would help me.	1	2	3	4	5
19. If I do something that upsets her or she does something that upsets me, we can make up easily.	1	2	3	4	5
20. When I do a good job at something, she's happy for me.	1	2	3	4	5
21. She would stick up for me if another kid was causing trouble for me.	1	2	3	4	5
22. If she and I have a fight or argument, we can say 'I'm sorry' and everything will be alright.	1	2	3	4	5
23. Sometimes she does kind or thoughtful things for me, which makes me feel special	1	2	3	4	5

When you look at these sentences, you will be thinking about *one* best friend who is a boy. If you can't think of a best friend who is a boy, think of a boy that you know well and like.

Read each sentence carefully and choose the number that says what you feel. Make sure that you are thinking about the *same* friend for all the sentences.

Also, choose the number that says what you think NOW, not what you would like your friend or your friendship to be. Say you and your friend fight a lot. You might wish that you didn't fight. But you would need to circle true or very true for this sentence because that is how your friendship is now.

Please put a circle around just *one* number.

	very untrue	untrue	sometimes true or sometimes untrue	true	very true
1. He and I spend all our free time together.	1	2	3	4	5
2. I can get into fights with him.	1	2	3	4	5
3. If I forgot my lunch or needed some money, he would lend it to me.	1	2	3	4	5
4. If I have a problem at school or at home, I can talk to him about it.	1	2	3	4	5
5. If he moved away, I would miss him.	1	2	3	4	5
6. He thinks of fun things for us to do together.	1	2	3	4	5
7. He can annoy me even though I ask him not to.	1	2	3	4	5
8. He helps me when I'm having trouble with something.	1	2	3	4	5
9. When something worries me, I can tell him about it even if it is something I can't tell other people.	1	2	3	4	5
10. I feel happy when I'm with him.	1	2	3	4	5

	very untrue	untrue	sometimes true or sometimes untrue	true	very true
11. He and I go to each other's houses after school or on the weekends.	1	2	3	4	5
12. He and I can argue a lot.	1	2	3	4	5
13. He would help me if I needed it.	1	2	3	4	5
14. If I had a fight with him, and I said I was sorry, he'd still be mad at me.	1	2	3	4	5
15. When he's not around. I sometimes think about him	1	2	3	4	5
16. Sometimes he and I just sit around and talk about things like school, sports, and things we like.	1	2	3	4	5
17. He and I disagree about many things.	1	2	3	4	5
18. If other kids were annoying me, he would help me.	1	2	3	4	5
19. If I do something that upsets him or he does something that upsets me, we can make up easily.	1	2	3	4	5
20. When I do a good job at something, he's happy for me.	1	2	3	4	5
21. He would stick up for me if another kid was causing trouble for me.	1	2	3	4	5
22. If he and I have a fight or argument, we can say 'I'm sorry' and everything will be alright.	1	2	3	4	5
23. Sometimes he does kind or thoughtful things for me, which makes me feel special	1	2	3	4	5

When you look at these sentences, you will be thinking about *one* close friend who is a boy. If you can't think of a close friend who is a boy, think of a boy that you know well and like.

Read each sentence carefully and choose the number that says what you feel. Make sure that you are thinking about the *same* friend for all the sentences.

Also, choose the number that says what you think NOW, not what you would like your friend or your friendship to be. Say you and your friend fight a lot. You might wish that you didn't fight. But you would need to circle true or very true for this sentence because that is how your friendship is now.

Please put a circle around just *one* number.

	very untrue	untrue	sometimes true or sometimes untrue	true	very true
1. He and I spend all our free time together.	1	2	3	4	5
2. I can get into fights with him.	1	2	3	4	5
3. If I forgot my lunch or needed some money, he would lend it to me.	1	2	3	4	5
4. If I have a problem at school or at home, I can talk to him about it.	1	2	3	4	5
5. If he moved away, I would miss him.	1	2	3	4	5
6. He thinks of fun things for us to do together.	1	2	3	4	5
7. He can annoy me even though I ask him not to.	1	2	3	4	5
8. He helps me when I'm having trouble with something.	1	2	3	4	5
9. When something worries me, I can tell him about it even if it is something I can't tell other people.	1	2	3	4	5
10. I feel happy when I'm with him.	1	2	3	4	5

	very untrue	untrue	sometimes true or sometimes untrue	true	very true
11. He and I go to each other's houses after school or on the weekends.	1	2	3	4	5
12. He and I can argue a lot.	1	2	3	4	5
13. He would help me if I needed it.	1	2	3	4	5
14. If I had a fight with him, and I said I was sorry, he'd still be mad at me.	1	2	3	4	5
15. When he's not around, I sometimes think about him	1	2	3	4	5
16. Sometimes he and I just sit around and talk about things like school, sports, and things we like.	1	2	3	4	5
17. He and I disagree about many things.	1	2	3	4	5
18. If other kids were annoying me, he would help me.	1	2	3	4	5
19. If I do something that upsets him or he does something that upsets me, we can make up easily.	1	2	3	4	5
20. When I do a good job at something, he's happy for me.	1	2	3	4	5
21. He would stick up for me if another kid was causing trouble for me.	1	2	3	4	5
22. If he and I have a fight or argument, we can say 'I'm sorry' and everything will be alright.	1	2	3	4	5
23. Sometimes he does kind or thoughtful things for me, which makes me feel special	1	2	3	4	5

Appendix E

Briefing script and administrator's instructions for Grades 3 to 10

BRIEFING SCRIPT FOR GRADES 3 to 10 (FRIENDSHIP RESEARCH)

Say: Hello. My name is Mrs Leeson and this is Mrs Rawlinson. We are from the Psychology Department at the University of Tasmania. We've come to your class today to talk to you about a special project we're doing on children (students for grades 7 to 10) and their friends. We're going to ask you some questions about your friends. This will help us to understand more about what children think about their friends, because having friends is an important thing for kids.

We're going to be in your class for about 30 minutes. You'll need to write some answers on these question sheets (Show).

The first question sheet will ask things like your age, the first names and ages of the brothers and sisters who live with you, how long you have been at.....School, and about any sports you play or clubs and associations you belong to.

Then we'll ask you to write down the names of your friends
Last, you'll read some sentences and you'll mark how true each sentence is for you. There are no right or wrong answers. We're just interested in what *you* think.

We've asked your parents if it is alright for you to take part in this project and they've said yes. You don't need to put your full name on any of the sheets. No-one will know your answers to the questions except us. We've arranged your tables so you can write your answers without anyone seeing them. If you feel uncomfortable answering any of these questions, just leave the answer space blank.

Do you have any questions? If you are not sure of what to do at any time, put your hand up and we'll come and help you.

Give out the gender coded questionnaire package with half the class receiving a cross-gender rating FQS questionnaire first, while the other half receive a same-gender rating FQS questionnaire first.

Say: We'll go through all the questions together as a class. In this way it will be easier for everyone to understand the questions, and so that people don't write down the wrong thing. Please don't try to answer any of the questions before we all come to them.

This is the first question sheet. Remember, you don't need to put your name on it. Write the name of your school at the top.

*Switch on overhead projector with enlargement of the first question sheet.
Point to the second line on the overhead. (for Grade 3 classes only)*

Say: Which year group or Grade are you in? (Seek response from class) Yes, that's right, so you circle.....

Say: **How many years old are you now?** If you're..... you'd circle(*demonstrate on overhead*). Say your birthday was next week and you were turning you'd still put down.....because that's how old you are now. Has everyone done that?

Say: Look at where it says FAMILY.

Demonstrate each step on overhead (for Grade 3 classes only). Use a volunteer student's details as an example.

1. Write down *just* the first name of each brother and sister who live with you.

Say: Name *just* the children in your family, not your mum or dad. If you have step-sisters or brothers that live with you, put their names down too.

Remember, only write their first names

Has everyone done that?

2. Write down how old your brother or sister is, next to their name

Say: Don't worry about the months, just write how old they are in years.

3. Now put a circle around the word *boy* if the person is your brother.

Put a circle around the word *girl* if the person is your sister. Has everyone done that?

4. Now write down your own name.

5. Write down how old you are.

6. Say whether you are a girl or a boy. Has everyone done that?

7. Start with the oldest child in your family. It might be you or your brother or sister. Put *number 1* next to this person's name. Now put *number 2* next the second oldest child in your family. It might be you or your brother or sister. Put *number 3* next to the third oldest child in your family. Keep going like this until you have put a number next to all the names. Has everyone done that?

Say: Now look where it says SCHOOL HISTORY (*demonstrate on overhead*) Write the name of your school in the space (*indicate on overhead*) How long have you been at.....? Write down all the grades you've been in at this school. Has everyone done that?

Say: Have you been at another school? Write down the name of the school. If there is more than one school, write them *all* down, even as far back as prep.

For example, If you were at Mt Nelson Primary last year, then you would write Mt Nelson.

Next, write down the grades you were in while you were there. Has everyone done that?

Say: Now look where it says SPORTS

Did you play any sports or do training last year and this year?

If you did, then write down the name of each sport you played this year and last year. If you didn't train or play sport, don't write anything.

If this was school sport or training, circle *yes*. If it was not, circle *no*.

Who were you with when you played or trained? If you were only with boys, put a circle around the words *boys only*. If you were only with girls, put a circle around the words *girls only*. If you were with both boys and girls, put a circle around the words *boys and girls*. Has everyone done that?

Say: Now look where it says CLUBS AND ASSOCIATIONS

Do you belong to any clubs or associations like Scouts or chess club?

If you do, then write down the name of each club you belonged to this year and last year. If you don't belong to anything, then leave this part blank. If the club or association is run by your school, then put a circle around *yes*. If it is not run by your school, then put a circle around *no*. If only boys belong to the club or association, put a circle around the words *boys only*. If only girls belong to it, then put a circle around the word *girls only*. If both boys and girls belong, then put a circle around *boys and girls*. Has everyone done that?

Say: Now look where it says FRIENDS

Who are your friends?

Think about your friends *inside* school. Also, think about the friends you know from *outside* school like in your neighbourhood, and friends you know from clubs and sports. In the first box, write down the *first* name of your friends who are the *same* sex as you. If you're a boy, write down the name of all the boys who are your friends. If you're a girl, write down the name of all the girls who are your friends. You can write as many names as you like, or none at all. Please do not put down your brothers and sisters or cousins names. We know that brothers and sisters or cousins can be friends but we are only interested in friends who aren't relatives. Has everyone done that?

Look at each name. If the person goes to your school, then write **S** next to the name. If the person *does not* go to your school, then write **N**. Has everyone done that?

In the second box, write down the *first* name of your friends who are the *opposite* sex to you. If you're a boy, write down the name of all the girls who are your friends. If you're a girl, write down the name of all the boys who are your friends. You can write as many names as you like, or none at all. Has everyone done that?

Look at each name. If the person goes to your school, write **S** next to the name. If the person *does not* go to your school, write **N**. Has everyone done that?

Next section of script just for Grades 3 to 6.

Say: Let's look at some sentences. The first one says "Dogs are friendly" Is this sentence true or untrue for you? If you *really* think that dogs are friendly, you would circle very true (number 5) on your sheet. If you *don't* think that dogs are friendly at all, you would circle very untrue (number 1) on your sheet. If you're not really sure whether dogs are friendly, then you'd mark sometimes true, sometimes untrue (number 3) on your sheet. Do you get the idea of how to do this? You need to choose the correct number to show how it is for you.

Now mark the number that says how you feel about the next two sentences. Remember to put a circle around just one number for each sentence. If you want to change your answer, just put a cross through the number you've circled and circle another number. Remember there are no wrong or right answers, just what is true for you.

Say: Now turn over to the next page. Make sure you have the right page which has a number 4 at the top. Is everybody looking at the right page? We are going to think about some sentences, and these sentences are about best friends. When you are deciding on how true or untrue these sentences are, you need to be thinking about your best friend. If you can't think of a best friend, think of someone who you are friendly towards, know well and like.

Say: When you look at these sentences, some of you will be thinking about a best friend who is a boy, and some of you will be thinking about a best friend who is a girl. If the first sentence on your sheet says "He and I spend all our free time together", you need to be thinking of *one* best friend who is a boy. If the first sentence on your sheet says "She and I spend all our free time together", you need to be thinking of *one* best friend who is a girl. If you can't think of a best friend for these sentences, just think of a boy or a girl that you know well and like. Read each sentence carefully and choose the number that says what you feel. Make sure that you are thinking about the *same* friend for all the sentences. Also, choose the number that says what you think NOW, not what you would like your friend or your friendship to be. Say you and your friend fight a lot. You might wish that you didn't fight. But you would need to circle true or very true for this sentence because that is how your friendship is now. Remember to circle just one number for each sentence.

Read each sentence to the class and check that children have marked each item (Grade 3 classes only)

About half way through say Are you still thinking about the same friend when you are reading the sentences?

When finished ask the class to turn their sheets over so that the practice sheet is uppermost. Hand out the second FSQ, pink for girls and blue for boys checking that a same-gender sheet is given to children who have a cross-gender sheet and vice versa.

Say: This time you will be looking at the same sentences as you did last time. If you were thinking about a boy for these sentences last time, you'll be thinking about a girl this time. If you were thinking about a girl for these sentences last time, you'll be thinking about a boy this time. If the first sentence on your sheet says "He and I spend all our free time together", you need to be thinking of *one* best friend who is a boy. If the first sentence on your sheet says "She and I spend all our free time together", you need to be thinking of *one* best friend who is a girl. If you can't think of a best friend for these sentences, just think of a boy or a girl that you know well and like. Don't look at your first sheet when you're working on this sheet.

Read each sentence to the class and check that children have marked each item. Make sure that children are not referring to their previous ratings.

About half way through say: Are you still thinking about the same friend when you are reading the sentences?

When children have finished, collect all sheets at each desk. Check sheets for missing information and follow up individually during the remaining class time. Ask class if there are any questions. Thank class and teacher.