

**Attachment Representations, Parental
Differential Treatment and Sibling
Relationships**

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OVERVIEW

The initial section of the thesis reviewed and analysed the sibling relationship literature. The importance of understanding sibling relationships because of their association with poor psychosocial adjustment was discussed. Additionally, the review considered the factors that influence sibling relationship quality. The research literature focused on structural, temperamental variables and the influence of peer relationships and these are therefore discussed. Furthermore, the impact of the parent-child relationship on sibling relationship quality is examined. The literature has found that when parents treat their children differently it has significant and negative repercussions for the quality of the sibling relationship. The empirical paper further investigated parental differential treatment and sibling relationship quality by examining the associations between maternal attachment status, parental differential treatment and sibling relationship quality. Although no significant links were found between attachment and the other constructs, there were associations between parental differential treatment and the quality of the sibling relationship, and the quality of the sibling relationship and child adjustment. An extended discussion in the critical review focused on understanding the lack of association between attachment measures and parental differential treatment. The stability of attachment measures over time as well as the links between attachment and parenting were considered. The implications of the research for clinical practice were also discussed.

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Part 1: Literature Review. Siblings and
Sibling Relationships

ABSTRACT

The purpose of this review is to examine the literature on siblings and sibling relationships. To outline the importance of this under-researched field the review details the link between sibling relationship quality and individual psychosocial outcome. Initial research into the area started with investigations of the influence of structural variables and temperament on sibling relationship quality but found that they explained only a small proportion of the variance in sibling relationship quality. Associations between sibling relationships and peer relationships have been found but as yet no studies investigated the direction of causality. The nature of the parent-child relationship has been found to be a strong predictor of the quality of the sibling relationship. Further investigations have discovered that how parents treat children differently is not only related to the quality of the sibling relationship but also to psychosocial adjustment. Where greater differential experience is perceived it is associated with poorer sibling relationship quality and more problem behaviours.

INTRODUCTION

Studies of family relationships have tended to focus on the parent child relationship and inter-parental relationship factors (Dunn, Slomkowski, Beardsall, & Rende, 1994; Updegraff, McHale, & Crouter, 2002). However, now there is greater understanding of the influence of multiple family factors (such as an individual's impact on the family and the general environment of the family) and the desire to understand the relative importance of these on child outcome (Moser & Jacob, 2002).

All individuals within the family system interact with each other, and these interactions impact on the relationships that are formed within the unit (Brody, 1998). During preadolescent years, siblings are each other's most frequent companions. Eleven-year-old children report spending approximately 33% of their out-of-school time with their siblings (McHale, Crouter, McGuire, & Updegraff, 1995; Stocker & McHale, 1992). Additionally, the relationship with a sibling is full of mixed emotions: love at finding someone in a similar position in the family to oneself, and hate, as one's own position in the family has been usurped (Mitchell, 2000).

The quality of the sibling relationships can vary considerably between families and even within them. Conflicting relationships can be upsetting for parents and may be damaging for later child outcome (Dunn, Slomkowski, & Beardsall, 1994; Garcia, Shaw, Winslow, & Yaggi, 2000). These marked differences in the quality of the sibling relationship, together with the quantity of time and the powerful emotions that are associated with being a sibling, suggest that investigating siblings and the

sibling relationship may further enlighten understanding of family relationships and of child psychosocial adjustment.

Aims

The aim of this review is to examine the effects of sibling relationships on both positive and negative psychosocial outcome. The review will reflect on and discuss the variables that may influence the quality of the sibling relationship. Research has focused on structural variables (such as birth order, age gap, gender), temperament, peer relationships, and parental relationships to help explain variations in the quality of the sibling relationship. Attachment theory will be used as a theoretical model to understand the possible mechanisms that underlie the effect of these variables on sibling relationships.

The review will conclude that although structural variables (such as birth order, age gap and gender) and temperament impact on the quality of the sibling relationship the amount of unique variance that seems to be explained by each variable is small. The extent of peer relationships' influence on siblings is unclear, as there is a dearth of research to clarify the direction of causality in the association. Whether sibling relationships are affected by or affect peer relationships needs further clarification. The parent-child relationship presents a more complex picture. The quality of the parent-child relationship does appear to affect the sibling relationship; however, this predominantly appears to be through a non-shared aspect of the family environment – parental differential treatment. Parental differential treatment seems to share unique variance with the quality of the sibling relationship and impact on later adjustment,

although no research has been conducted to properly evaluate the direction of causality in these relationships.

PSYCHOSOCIAL ADJUSTMENT

Negative Outcomes

Given the amount of time that children spend with their siblings, it is important to consider how it may impact on their later adjustment. Siblings imitate each other, and it is thought that the experiences encountered in a sibling relationship provide practice for later life and other relationships (Garcia et al., 2000; Volling & Belsky, 1992).

Adolescent alcohol and substance use are positively associated with sibling usage. These associations extend to problematic behaviours: for example, where one adolescent sibling shows risky sexual behaviour, the other sibling is more likely to show similar difficult behaviours (Yeh & Lempers, 2004). In middle childhood, aggressive behaviour by one sibling is correlated with aggressive behaviour in the other. When one sibling is aggressive, the other is twice as likely to be aggressive, (compared with when the first sibling does not show aggressive behaviour) (Bank, Patterson, & Reid, 1996). Aggressive children are likely to be rejected by their peers and are more likely to show later adjustment problems (Dunn, 1992). These findings suggest that negative sibling interactions play a role in children's learning of anti-social behaviour (Bank et al., 1996).

Dunn, Slomkowski, Beardsall and Rende (1994) attempted to predict internalising and externalising problems on the basis of the quality of the sibling relationship and

the mother-child relationship. Families participated in three waves of the study. In each wave, measures of the sibling relationship and the mother-child relationship were assessed by interview (and observation on the initial time point only). Child adjustment was measured in the third wave through maternal report. Multiple regression analyses showed that maternal report of sibling negative behaviour accounted for a significant amount of the variance for both younger and older siblings internalising difficulties. However, the study lacked a measure of child behaviour difficulties at earlier time points, and as such no account was taken of the influence of adjustment on the sibling relationship. Therefore, a causal link between the sibling relationship quality and later adjustment cannot be assumed.

Further negative experiences in the sibling relationship have been linked to later increases in externalising behaviours. In a study by Garcia et al. (2000) multiple regression analyses showed that conflict in the sibling relationship accounted for unique variance in the later prediction of aggressive and delinquent behaviour after social-economic status, early child behaviour difficulties and rejecting parenting had been accounted for. The study measured the adjustment of the target child when they were 2 years (mother only report), 5 years and 6 years (mother and teacher report). Additionally, maternal rejecting parenting was observed at 2 years and sibling interactions were observed at 5 years (maternal report only). The study also found that the interaction between destructive sibling conflict and rejecting parenting accounted for unique variance in the predicted development of aggressive behaviour (Garcia et al., 2000). In support of the interaction effect, further analysis showed that those who had both high sibling conflict and rejecting parenting were more likely to have higher aggression scores (both mother and teacher report). This suggests that

although sibling conflict is associated with poorer adjustment, rejecting parenting behaviour may amplify its effects in an interactive fashion.

In sum, many studies, some of which have been discussed above, have found associations between negative sibling relationships and adjustment difficulties (Bank et al., 1996; Dunn et al., 1994; Garcia et al., 2000; Moser & Jacob, 2002; Yeh & Lempers, 2004). However, whether sibling relationships play a causal part in later adjustment needs further investigation.

Positive Outcomes

Outcome studies have also looked at sibling relationships and their role in promoting positive development. In one study, young adolescents who had experienced warm and supportive sibling relationships showed fewer adjustment problems later in life (Yeh & Lempers, 2004). Additionally, an older sibling's pro-social behaviour towards a younger sibling was able to predict the younger sibling engaging in more helping, sharing and co-operating behaviours (Garcia et al., 2000; Yeh & Lempers, 2004).

Interestingly, a child's perception of warmth in the sibling relationship has been found to be strongly associated with that child disclosing information and turning to their sibling for support as well as showing an increased understanding about the feelings and thoughts of others (Anderson, Hetherington, Reiss, & Howe, 1994; Dunn, Deater-Deckard, Pickering, & Golding, 1999a; Howe, Aquan-Assee, Bukowski, & Rinaldi, 2001). These findings suggest that sibling relationships promote adjustment partly via their impact on children's understanding of others,

which is an important skill to learn for future successful intimate relations and may provide resilience against the development of later adjustment problems.

Warmth and closeness in sibling relationships have also been associated with a buffering effect on the impact of life events, which may also help to understand why siblings relationships may affect adjustment. Findings suggest that siblings that grow up experiencing marital conflict are likely to have fewer later adjustment problems if they have good sibling relationships (Dunn, 1992). Adolescents who have positive relationships with siblings are more likely to have higher self-esteem, and this is likely to further enhance the sibling relationship (Yeh & Lempers, 2004).

Yeh and Lempers (2004) used structural equation modelling to help understand the associations between sibling relationships, friendships, academic achievement, self-esteem and adolescent adjustment. All of which were measured at three different time points. Yeh and Lempers tested a hypothesised model whereby the risk of adolescent adjustment was directly reduced by positive sibling relationships and indirectly through good friendships, academic achievement and self-esteem. Their results showed an association between positive sibling relationships at time point 1 and self-esteem and good friendships at time point 2. However, when an alternative model was tested, these original associations were shown to be bi-directional, with good friendships and self-esteem at time point 1 also associated with positive sibling relationships at time point 2. In this second model, positive sibling relationships at time point 2 were directly associated with a positive adjustment at time point 3. Further studies are required to untangle the direction of causation but it may be that

there is a bi-directional effect with sibling relationships effecting self-esteem and self-esteem effecting sibling relationships.

Summary

The difficulty in looking at links between sibling relationships and outcomes is that most associations are correlational and not causal. This means that it is not possible to know whether the problems shown in sibling relationships or indeed the positive aspects are contributing directly or indirectly to later adjustment (Dunn & McGuire, 1992), or whether sibling relationships mediate or moderate the effects of other relationships such as the parent-child relationship. Although it is clear that sibling relationships are associated with many positive and negative aspects of psychosocial adjustment, further research is needed to clarify the independent role that sibling relationships have.

THE NON-SHARED ENVIRONMENT

Siblings share a substantial part of their environment; because of their shared environment, and shared genes, it was thought that they would be similar to one another because they would be exposed to similar experiences (O'Connor, Hetherington, Reiss, & Plomin, 1995). In fact, siblings growing up in the same family have been found to be as different from one another as children growing up in different families. The sources of such differences are labelled the 'non-shared environment'. Differences in each child's experiences of growing up in the family are thought to account for different outcomes and differing relationships (Dunn, Plomin, & Nettles, 1985; Feinberg, Neiderhiser, Simmens, Reiss, & Hetherington, 2000; Plomin, Manke, & Pike, 1996; Volling & Elins, 1998).

Twin and adoption studies have shown that most of the similarities found between siblings can be accounted for by genetic factors, suggesting that shared environmental influences play only a small part in the lives of siblings, and that the non-shared environment is at least as important as shared influences (Daniels, 1986; Jenkins, Rasbash, & O'Connor, 2003; O'Connor et al., 1995; Reiss et al., 1994). The implications of the non-shared environment for understanding differences between siblings and sibling relationships are clearly significant; differences in each child's experiences may well impact on their individual outcome and the sibling relationship.

DIFFERENCES IN SIBLINGS AND SIBLING RELATIONSHIP QUALITY

Overview

So how do siblings differ, and what are the sources of these differences (the non-shared environment) in quality of sibling relationships? These questions will be investigated by looking at the distinct areas that have been researched. As research initially focused on structural variables such as birth order and the sex of the dyad, this is where this investigation will begin. Temperament, peer and parental relationships will then be explored to examine how they link to the differences between siblings and in the quality of the sibling relationship.

Structural Variables

Initial research focused on structural family variables such as birth order and the gender mix of the sibling dyad. With same-sex dyads, boys are shown to engage in more physical play, whereas interactions from girls are aimed more at enhancing relationships (Buhrmester & Furman, 1990; Burhmester, 1992). More generally, warmth and closeness have been associated with same-sex siblings. During middle childhood, confiding, intimacy and affection in the sibling relationship is more associated with same-sex siblings than different-sex siblings, although this is particularly true for girl dyads (Buhrmester & Furman, 1990; Burhmester, 1992). In mixed-sex dyads, older boys show less warmth and intimacy towards their younger sibling than girls do (Dunn, 1996).

Buhrmester and Furman investigated the effects of birth order, relative age (older/younger) and age spacing on sibling relationships in 363 children ranging in age from 8–17 years (Buhrmester & Furman, 1990). Unsurprisingly, the balance of power within the sibling relationship was related to the age of the sibling: younger siblings reported being less dominant and feeling more nurtured than older ones (Burhmester, 1992). Siblings who are four-years or more younger than the older sibling reported the least power and status. As well as being more dominant, older children were found to be more nurturing and caretaking of their younger siblings. Where there is a narrow age spacing, older siblings report more dominance that with a wide age gap. However, as children grow up, the sibling relationship becomes more egalitarian and adolescents reported spending less time with their siblings than younger children did (Buhrmester & Furman, 1990; Burhmester, 1992; Furman & Buhrmester, 1985).

The age gap between siblings has been linked to the amount of conflict in the sibling relationship. More arguments have been found associated with a narrow age gap between siblings compared with a wide age gap (4+ years), and siblings report greater satisfaction in the relationship with a wider age gap (Buhrmester & Furman, 1990; Burhmester, 1992; Furman & Buhrmester, 1985). It may be that, with a smaller age gap, the older sibling feels like their position in the family has been usurped, causing conflictual feelings to arise (Mitchell, 2000).

There are some reports that siblings growing up in a household that is of high socio-economic status are more likely to show warmth and intimacy towards each other, compared with than those growing up in a lower socio-economic environment (Dunn, 1996). It is difficult to understand these findings as resulting from purely difference in socio-economic status. It is more likely that differences arise because of environmental influences on the siblings rather than because of socio-economic status per se. Low socio-economic groups are sometimes linked with greater environmental instability and life events which may lead to relationship stressors (Erikson, Sroufe, & Egeland, 1985).

Although all of these structural variables show a significant impact on the quality of the sibling relationship, the amount of variance that can be accounted for by these bio-social structures explains only 1-2% of sibling relationship differences (Burhmester, 1992; Daniels, Dunn, Furstenberg, & Plomin, 1985). Therefore, evidence suggests that sibling relationship and adjustment differences are predominantly independent of the effects of these structural variables.

Volling & Belsky (1992) conducted a study of 30 families that had a mixed variety of genders in the sibling dyad. The families participated in the study when the oldest child was between 5-6 years, and the second born was between 2-5 years. A home observation was conducted to carry out detailed observations of sibling interaction and the parent-child relationship. Levels of conflict (e.g. physical or verbal aggression) and prosocial behaviour (e.g. helping or comforting one another) were coded from the observations. Although a series of analyses were carried out, sibling age, the age gap or the gender composition of the dyad did not have a significant effect on the levels of conflict or prosocial behaviour (Volling & Belsky, 1992). Fundamentally it appears that structural effects do not provide sufficient explanation as to what cause sibling relationships to vary.

Summary

There is evidence for the impact of structural variables on the sibling relationship (Buhrmester & Furman, 1990). However, these variables alone account only for a small percentage of the variance in sibling relationship quality, and therefore are unlikely to be the predominant cause of the variations in sibling relationship quality (Volling & Belsky, 1992).

Temperament

Temperament appears to affect the sibling relationship at its very earliest stage - children that are more adaptable seem to show less distress at the birth of their sibling (Brody, 1998). Additionally there is evidence that child temperament can predict a unique part of the variance in the quality of the sibling relationship

(Stocker, Dunn, & Plomin, 1989). Stocker, Dunn & Plomin (1989) examined the influence of temperament on sibling relationships in 96 sibling pairs by observing families and interviewing parents when the first-born child was aged between 5-10 years. They found that temperament was associated with the quality of the sibling relationship but that the associations differed for older and younger siblings. First-born temperamental shyness was correlated with less controlling and competition in the sibling relationship. When second-born children showed high sociability traits it was associated with less cooperation but more positivity in the sibling relationship. Additionally, when second-born children showed high temperamental levels of anger and upset it was associated with less control and more competition in the sibling relationship. Greater temperamental emotional upset from first-born siblings was associated with greater negativity in the sibling relationship. This study found that child temperament explained approximately 9% of the variance in sibling relationship quality after family structure and maternal behaviour had been accounted for. However, it is important to note that structural variables such as whether a child is first- or second-born seem to play an important role in moderating the influence of temperament.

Another study examined the moderating role that sibling temperament had on sibling relationships (Brody, Stoneman, & Gauger, 1996). One hundred and two families with same-sex children participated when the first-born children were between 6-11 years. Results found that when the first-born had an easy temperament the sibling relationship quality was higher than when the first-born's temperament was more difficult. The second-born temperament did not contribute significantly beyond that of the older sibling's temperament. Additionally, the effect of the parent-child

relationship on the sibling relationship was moderated by the first-born siblings temperament. Where the first-born had a more difficult temperament, positive changes in the parent-child relationship were associated with positive changes in the sibling relationship. This suggests that the development of a good parent-child relationship can have a protective influence over sibling relations which ameliorates the effects of a difficult sibling temperament.

There is evidence that the parent-child relationship can moderate the association between difficult child temperament and the quality of the sibling relationship (Brody et al., 1996). It seems as though, having positive other close relationships (such as the parent-child one) can protect against the risk factors present in one sibling having a difficult temperament.

Summary

Temperament alone has an impact on the quality of the sibling relationship (Stocker et al., 1989). However, other influences, such as structural variables and the parent-child relationship, combine with temperament to have a greater sway over the sibling relationship (Brody, 1998). Influences on the sibling relationship are therefore complex.

Peer Relationships

A key question when examining peer and sibling relationships is whether ways of behaving in relationships are generalised from family relationships to peer ones, or whether peer relationships have an impact on family relations in particular the sibling relationship? Additionally, it is interesting to note how similar these types of

relationships are. Updegraff has hypothesised that during adolescence, sibling and peer relationships will become more similar to each other as it is a time in which relationships become more emotionally intimate, and there is a change towards equality in power and control (Updegraff et al., 2002). Adolescents rely on both their siblings and friends for intimacy, companionship and emotional support (Updegraff et al., 2002). There is evidence, however, that this may only be the case in peer relationships for girls, in siblings for same-sex dyads or where girls are the first born again showing the impact of structural variables on these other factors (Burhmester, 1992).

Much of the research has focused on whether sibling and peer relationships are congruent or compensatory (Seginer, 1998; Updegraff & Obeidallah, 1999). When an adolescent lacks close, confiding peers, do they compensate by having a particularly close relationship with their siblings? Or when adolescents lack close peers do they also lack close sibling relationships? There is evidence that there is a congruent relationship between siblings and friends, such that positive interactions with friends are correlated with positive sibling relations (Updegraff et al., 2002; Updegraff & Obeidallah, 1999; Yeh & Lempers, 2004).

Seigner (1998) collected data on sibling and peer relationships from 147 school children. Results showed that high peer acceptance and low peer-related loneliness was significantly associated with high levels of intimacy, admiration and nurturance by siblings, providing further evidence for congruent relationships (Seginer, 1998). When low involvement and intimacy are reported with friends, a similar pattern is found with siblings relationships (Updegraff & Obeidallah, 1999). It appears that a

protective or risk factor in one relationship type influences and therefore multiplies the risk/buffering influence by affecting other relationship types.

However, there is also evidence that the relationships can be compensatory, for example, when a child is isolated from their peers they may find their sibling relationships more supportive (Updegraff et al., 2002). A differentiated pattern has also been discovered with some adolescents described a high level of intimacy with both siblings and friends, but low involvement with friends compared with siblings (Updegraff & Obeidallah, 1999).

Updegraff & Obeidallah (1999) used cluster analysis to discover the different patterns in how siblings and peers relate. One hundred and fifty three families participated and information about young adolescents' levels of intimacy and the amount of time spent with their siblings and peers was collected. Three clusters were found: (i) a differentiated group who showed high levels of intimacy and temporal involvement with siblings, and a high level of intimacy with their best friend but a low amount of time spent with friends; (ii) an incongruent (compensatory) pattern was found in which a group reported high levels of intimacy and time spent with friends, but not with siblings; and (iii) a third group of congruent relationships was found in which adolescents reported low intimacy and temporal involvement with both peers and siblings. No group was found that showed a congruent relationship with high involvement. A further sample was recruited to replicate the findings of the first study and the same three groups were found. The first group that displayed low involvement with friends is in fact not dissimilar to a congruent pattern as high levels of intimacy are found with both siblings and peers. There may be many reasons for the low temporal involvement with friends but distance and cultural expectations

would seem to be key factors that need to be accounted for. The incongruent pattern is not unexpected as in adolescence peer relationships begin to become more important and it would seem appropriate for this to be reflected in the amount of time spent with peers. The third group showing congruent relationships of low involvement with peers and siblings would seem to be at the greatest risk from adjustment difficulties as they describe having no same-age support. Further replication outside of the particular sample in America would strengthen these findings.

A further study by Updegraff (2002) showed evidence for compensatory processes occurring in sibling and peer relationships. One hundred and seventy nine families participated in a 3-year longitudinal study. Siblings were interviewed annually about their relationships with each other and their friendships, focusing on intimacy and control aspects of those relationships. Both first- and second-born children reported an increase in sibling intimacy and decrease in friendship intimacy over the 3-year period. Further analyses showed a gender division in first-born children; girls showed a greater level of intimacy with friends than with siblings. Second-born children showed a similarly more intimate relationship with friends than with siblings. With regards to control, there was a more congruent picture, with first- and second-born children being less controlling with friends and siblings over time. However, first- and second-born children generally reported being more controlling with their siblings than in their friendships. The pattern of relationships is far from simple, as influences from structural factors also need to be accounted for. However, the finding of a decrease in peer intimacy over adolescence is surprising and seems

to be in contrast with other studies that have found the opposite (Dunn & McGuire, 1992; Updegraff & Obeidallah, 1999).

In terms of adjustment, the indication is that positive outcomes, such as better socio-emotional functioning and more positive parent-child relations, are associated with a positive congruent relationship, compensatory relationships or differentiated relationships with siblings and peers. Unsurprisingly, there was a poorer outcome associated with the lower involved congruent pattern (Seginer, 1998; Updegraff & Obeidallah, 1999). These results support findings that close relationships act either as a risk- or protective factor for child adjustment outcomes.

In terms of causality, the picture is not clear. There seems to be a bi-directional relationship between the quality of friendships and sibling relationships. It is possible that as the quality of sibling relationships is a stronger predictor of the quality of friendships (than peer quality is of predicting sibling relationship quality), relationships may be generalised from family relationships to the social environment (Brody, Copeland, Sutton, Richardson, & Guyer, 1998; Yeh & Lempers, 2004). However, as peer relations increase in importance during adolescence it may be that peers begin to influence or differentiate from sibling relationships.

Summary

There is consistent evidence of associations between sibling and peer relationships. The exact pattern of the congruent, differentiated and complementary relationship needs further investigation to determine why particular patterns occur. It may be that peer relationships begin to influence sibling ones when peers gain more importance

during adolescence. Additionally, as peer and sibling relationships have shown bi-directional associations, with each being able to predict the quality, the issue of causality is key.

Parental Influences

The Parent-child relationship

There is extensive evidence that points to associations between parenting or parent-child relationships and sibling relationship quality. Children that are insecurely attached to their mothers are more likely to show conflictual sibling relationships than securely attached children (Dunn & McGuire, 1992; Volling & Belsky, 1992). Higher levels of positivity in the parent-child relationship are connected with positive affect and pro-social behaviour in the sibling relationship (Brody, 1998). A study by Stocker and McHale (1992) emphasises these points. One hundred and three families that participated in a longitudinal study agreed to be interviewed about their relationships. Mothers, fathers, first- and second-born siblings took part when the target children were between 10 and 11 years old and the younger sibling was at least 6 years old. Questionnaire measures of the levels of affection, hostility and rivalry in the sibling relationship were collected as well as information pertaining to the level of activities carried out with parents and the levels of warmth in the parent-child relationship. Correlational analyses found that there were negative associations between reports of hostility and rivalry in the sibling relationship and both maternal and paternal levels of warmth, indicating that the greater the level of parental warmth, the less hostility and rivalry in the sibling relationship. Data were then divided into high and low parental warmth, and high and low parental involvement. Further analyses showed that where children experienced high levels of warmth and

involvement with their parents (both with mothers and fathers analysed separately) there was significantly more affection and significantly less hostility in the sibling relationship (compared with if they had experienced low levels of warmth and involvement) (Stocker & McHale, 1992).

In support of this study, results of a study by Bussell et al., (1999) also found significant correlations between parent-adolescent interactions and the quality of the sibling relationship. The study investigated the proportionate effects of genetics, the shared and the non-shared environment in 700 families of varying degrees of genetic relatedness (sibling pairs, non-identical twins, identical twins and in stepfamilies including siblings with varying relatedness) with siblings that were between the ages of 10 and 18 years. The siblings were the same sex and no more than four years apart. Measures of positivity and negativity in the sibling relationship, and measures of positivity and negativity in the maternal-adolescent relationship, were made by each sibling, the mother and through observations of discussions arranged by a trained interviewer. Although the authors used a complex structural equation model to investigate the influences of the environment and genetics, they also analysed the relationship between the parent-adolescent relationship and the sibling one.

Significant correlations were found for a positive parent-adolescent relationship and a positive sibling relationship, and a negative parent-adolescent relationship was also significantly correlated with a negative sibling relationship. These significant findings were apparent for mother, adolescent and observer reports, confirming their robustness (Bussell et al., 1999). Caution is needed however, as links are only correlational and no causal investigations have been conducted as yet.

Alternative hypotheses state that siblings may compensate for poor parental care by developing a close sibling relationship and there is some evidence to support this (Boer, Goedhart, & Treffers, 1992). Older siblings may serve as substitute carers when parents are unable to do so, but this type of compensation seems only to take place in situations where there is under-involvement (but not deprivation) in parental care. It may be though that findings of an inverse relationship between the parent-child and sibling relationship only occurs in extreme groups as most studies seem to find congruent relationships (Boer et al., 1992; Brody, 1998; Brody et al., 1996; Bussell et al., 1999).

The connection between parent-child relationships and sibling relationships are further complicated by research that has shown that mothers treat children differently in the same family. Jacobs & Moss (1976) examined the interaction between mother and infants with their first- and second-born when they reached 3 months old. They found mothers to be less social, less affectionate and to demonstrate less care-taking behaviour towards their second-born than with their first-born child. Bryant & Crockenberg (1980) also found significant differences in maternal behaviour between their first- and second-born child. These results suggest that there is a significant aspect of non-shared parenting ('parental differential treatment') experienced by each child within a family and that these unique experiences have notable influences on the quality of the sibling relationship, and may explain some of the differences found between siblings.

Summary

Although there are significant associations between the quality of the parent-child relationship and the sibling one, so far no studies have fully examined the direction of causality between these relationships. In extreme cases sibling relations may compensate for parent ones.

Studies have begun to find evidence that parents do not treat their children in the same way and have considered the impact of this on the sibling relationship (Bryant & Crockenberg, 1980; Jacobs & Moss, 1976). With the discovery of the importance of the non-shared environment, research shows that siblings experiences of their parents treatment may not be as equal as initially assumed (Reiss et al., 1994). The concept of parental differential treatment has emerged with this finding.

Parental Differential Treatment

There is substantial support for the notion that parental differential treatment of siblings is associated with poorer sibling relationships and worse individual outcome. Children's experience of both maternal and paternal differential treatment has been related to greater conflict and hostility in the sibling relationship, and to greater adjustment difficulties for the less favoured sibling (Boer et al., 1992; Brody, 1998; Dunn, 1992; Kowal & Kramer, 1997; McHale, Updegraff, Tucker, & Crouter, 2000; Volling & Elins, 1998).

Differential experiences of maternal warmth, positive affect and responsiveness have been correlated with sibling rivalry, lack of communication and reduced interactions between siblings (Brody et al., 1996; Stocker & McHale, 1992). Different maternal

control has been linked to lower positive behaviours and greater negativity in the sibling relationship (McHale et al., 1995). The experiences that siblings have of differential paternal warmth and responsiveness correlate with differences in affection, hostility and higher rates of negative behaviours in the sibling relationship (Brody et al., 1996; Stocker & McHale, 1992). When siblings notice differences in paternal control and negative behaviour, they display fewer positive behaviours and more negative behaviours in the sibling relationship (Brody et al., 1996). In cases where mothers and fathers discipline the older sibling in the family more than the younger, the older sibling is more likely to show internalising and externalising behaviours (Volling & Elins, 1998).

Researchers have suggested that the negative outcomes that are associated with parental differential treatment are associated with the less favoured sibling experiencing feelings of shame, resentment and anger. Over time, such feelings may lead to low self-esteem and depression. Similarly, it is assumed that the favoured sibling may feel guilty and fear that in the future they may no longer be favoured (Boer et al., 1992; Boll, Ferring, & Filipp, 2003; Brody et al., 1998). And so it appears that children who are favoured or disfavoured are at risk from adjustment problems not only because of low self-esteem caused by differential treatment but because of the negative impact on the sibling relationship multiplying the risk of adjustment problems.

Kowal and Kramer (1997) interviewed 61 families that had a first-born child between 11 and 13 years of age. The second-born child was no more than four years younger. Siblings were interviewed separately about their sibling relationship and

their experience of parental differential treatment. The findings provide further evidence to support the assertions stated above. Negative correlations were found between maternal and paternal differential treatment and warmth between siblings. They also found significant positive correlations between maternal and paternal differential treatment and conflict between siblings. The results suggest that where siblings experience a greater level of parental differential treatment, they also experience reduced warmth and increased conflict in the sibling relationship (Kowal & Kramer, 1997).

Hypotheses have been put forward to investigate whether mothers and fathers show a congruent or complementary pattern of parental differential treatment. In a congruent pattern, mothers and fathers favour their children in a similar way. A complementary pattern is described when a mother favours one child and a father favours the other. It is interesting that actually most parents seem to display congruent treatment towards siblings, and a complementary pattern is rarely found (McHale et al., 1995; Seginer, 1998; Volling, 1997). Some of the congruent ways in which parents interact with siblings can be identified. For example, parents direct higher rates of affectionate, controlling and responsive behaviour towards the younger sibling, and at the same time parents are more likely to give more responsibility to the older sibling (Brody, Stoneman, & McCoy, 1992; McHale et al., 2000). As younger children require more supervision and discipline than their older siblings, researchers have begun to investigate the possibility that some parental differential experience could be normative and maybe even adaptive (Volling, 1997). In contrast to Jacobs & Moss and Bryant & Crockenburg's findings that there were differences in maternal behaviour other studies have found a high consistency in maternal

behaviour (Boer et al., 1992; Bryant & Crockenburg, 1980; Dunn et al., 1985; Jacobs & Moss, 1976).

Dunn, Plomin & Nettles (1985) conducted a study that provides evidence to support the notion of maternal consistency. Fifty families participated in a study that observed mother-infant interactions when both the first- and second-born child each reached 12 months of age. Maternal behaviours in a feeding and in free-play situations were analysed. The results showed a great similarity in maternal behaviour when looking at affectionate behaviours, verbal attention, as well as controlling and directive behaviours (Dunn et al., 1985). However, the observation times were only 10 minutes for each child, and therefore the results need to be replicated with a significantly longer observation period before generalisations can be made.

So it may be that some different treatment is actually responding most appropriately to their child's differing needs and that when looked at closely mothers treat their children similarly. This suggests that it may be bio-social structures, such as age, gender and temperament, that make it impossible to treat siblings in the same way. For example, children who show high levels of irritability are more likely to elicit negative interactions and inhibit positive interactions from their parents.

Additionally, boys are more likely to experience more negative differential parenting than girls (Jenkins et al., 2003). When siblings have different characteristics from one another it may require parents to behave differently or may elicit different behaviours from parents towards each child (Jenkins et al., 2003). Parental differential treatment in some situations may be the most appropriate way to sensitively respond to differing child's needs (Brody, 1998).

Additionally to these findings are studies that have shown that although parental differential treatment does account for some of the differences in sibling relationship quality, the associations are not particularly strong (Feinberg, McHale, Crouter, & Cumsille, 2003; Kowal & Kramer, 1997). Volling & Belsky (Volling & Belsky, 1992) (a study mentioned above with regards to structural variables) conducted a study where 30 families with 2 siblings participated when the first born was 6 years old. Questionnaire measures of parental differential treatment were completed by the mothers and fathers and were correlated with observations of sibling interaction that were formed into composite scores of sibling conflict and prosocial interaction. No correlations show significance, but a correlation ($r = -.30$, $p = .07$) was found, suggesting that there was a trend towards more sibling conflict in families where the mothers reported more controlling behaviour to the older sibling than the younger. Where fathers reported that they were relatively more affectionate towards second-born children, there was an association with less prosocial interaction between siblings ($r = -.31$, $p = .06$). This study supports the notion that although parental differential treatment has an association with the quality of sibling relationships, the strength of the associations suggest that it does not fully determine why sibling relationship's differ. However it has been noticed that there is less reporting of parental differential treatment if questionnaire measures are used in contrast to interview or observational measures (McHale et al., 2000; Updegraff et al., 2002).

Since the beginning of this research into different treatment, researchers have been keen to elicit the particular factors that cause parental differential treatment to be linked to child adjustment and sibling relationship quality. Investigations started to

focus on the child's interpretation of what the different parental treatment means (Kowal & Kramer, 1997). Studies have found that children are particularly at risk from negative outcomes if they perceive the treatment as less favourable. Therefore focus has been placed on the child's understanding of the different treatment and their perception of fairness (McHale et al., 1995).

The Kowal & Kramer study (mentioned above) (1997) did not stop at their descriptions of the relationship between parental differential treatment and the negative impact on the quality of the sibling relationship. They continued to investigate the reasons why parental differential treatment may have this negative impact. In 75% of cases, children were able to justify why they thought their parents treated them differently and therefore to determine whether they perceived the treatment to be 'fair' or not. Analyses showed that where first-born children perceived their differential treatment to be 'fair' they also reported less of a power differential (when maternal treatment was seen as fair), higher levels of warmth and lower conflict in the sibling relationship (when paternal treatment was seen as fair). How children attributed the fairness was also important. Where children explained the differential treatment in terms of their sibling's needs there were more positive outcomes for the sibling relationship, regardless of whether there was a great deal of differential treatment or not.

It seems that, where children are able to attribute 'fair' reasons to their experience of differential treatment it becomes less of a risk factor and their quality of sibling relationships and later adjustment are less affected (Jenkins et al., 2003; Kowal & Kramer, 1997). Therefore, where disfavour is perceived, it is associated with a

poorer quality of sibling relationship (Boll et al., 2003). These results suggest that it may be the attributions made by children that affect their outcome rather than objectively greater differential treatment.

In support of this Feinberg et al., (2000) found that moderators of social comparison such as temperament and self-esteem influenced perceptions of parental differential treatment. Children that were higher in emotionality or who had low self-esteem were more likely to report greater experiences of parental differential treatment. These findings suggest that again that it may be child-related factors that lead to the reporting of parental differential treatment rather than actual differences in parental behaviour. Currently however, it is still unclear whether children who show greater emotionality and lower self-esteem are more likely to report parental differential treatment or whether the low self-esteem and greater emotionality result from being treated less favourably than their sibling.

There has been a shift in thinking away from seeing parental differential treatment as negative in itself and towards identifying more specific predictors of the quality of sibling relationships as there may be other factors that influence the perception of parental differential treatment. The concept of sibling de-identification has been investigated by Feinberg, McHale, Crouter & Cumsille (2003). The process of de-identification occurs when siblings appear to become very different from one another, pursuing separate interests in leisure and academic domains in an attempt to determine separate identities (Feinberg et al., 2003). One hundred and eighty five families took part in the study by Feinberg et al., (2003) where mothers, fathers, first-born and second-born adolescents were interviewed. The hypothesis was based on

the de-identification theory: that larger differences in parental treatment of siblings improved the quality of the sibling relationship as it indicated greater de-identification and therefore less competition. Difference scores from sibling reports of parent-child differential treatment were used to predict conflict and warmth in the sibling relationship. Results showed that when parents treated their children more differently with regards to warmth, the quality of the sibling relationship increased, but only when the amount of parental differential treatment was above a certain threshold. However, differences in how parents treated siblings with regards to conflict were not significantly related to changing sibling relations (Feinberg et al., 2003). The focus on sibling de-identification is interesting and has yielded some significant findings. The null finding with regards to conflict in the sibling relationship is in contrast with other studies that have found significant differences in control are associated with negative consequences for the quality of the sibling relationship (McHale et al., 1995; Volling & Elins, 1998). However, this study illustrates some of the complexities involved in determining the role of parenting and parental differential treatment on the quality of the sibling relationship.

Summary

Initially investigations of parental differential treatment found that there was a poorer psychosocial outcome and that there were negative consequences to the quality of the sibling relationship associated with greater differential treatment (Boer et al., 1992; McHale et al., 2000; Volling & Elins, 1998).

The pattern of different treatment between parents seemed to be congruent rather than complementary, with most studies finding that mothers and fathers act in a

similarly different way to each other (rather than one showing preferential treatment to one sibling and the other favouring the other) (McHale et al., 1995; Seginer, 1998; Volling, 1997). The fact that parents are similar in their differential treatment may be more to do with sensitively responding to the child's needs and recognising that treating children in the same manner may not be appropriate, given structural differences such as age, gender and temperament (Brody, 1998). The association between parental differential treatment and the quality of the sibling relationship is not as strong as one might expect for it to be a main determining factor in sibling relationship quality (Volling & Belsky, 1992).

Careful analysis has shown that the perception of fairness that is associated with differential treatment accounts for a significant amount of the variance in the quality of the sibling relationship (Kowal & Kramer, 1997). Where parental differential treatment is perceived as fair, there is a less negative impact on the sibling relationship (Kowal & Kramer, 1997). Additionally, low self-esteem and emotionality moderate children's perception of parental differential treatment (Feinberg et al., 2000).

So, it seems that parental differential treatment is not solely responsible for the occurrence of a positive or negative sibling relationship. The picture is further clouded by the sibling de-identification hypothesis, which states that for siblings to create a separate identity, they become as different from one another as possible (Feinberg et al., 2003). Evidence to support this has been discovered by Feinberg et al., who found that the more marked the differences in parental treatment in relation

to the expression of warmth, the better the quality of the sibling relationship (Feinberg et al., 2003).

What is apparent are the complexities in unravelling the impact of parenting and parental differential treatment on the quality of the sibling relationship. As such, there needs to be a greater understanding of the mechanisms that affect parental differential treatment, and how this impacts on the sibling relationship quality.

THEORETICAL CONCEPTUALISATION

There are a number of distinct perspectives that try to explain individual differences and differences in relating to others. Attachment theory is often mentioned in research to help understand the connections between relationships (Brody, 1998; Dunn, 1992; Seginer, 1998; Stocker & McHale, 1992; Updegraff & Obeidallah, 1999; Volling & Belsky, 1992). Researchers have discussed the role of the internal working models developed in the early parent-child relationships and how they provide a template for understanding and interacting in other relationships (Updegraff & Obeidallah, 1999). To further develop our understanding of sibling relationships it was thought that it may be beneficial to consider the how attachment theory might explain some of the research findings discussed above.

Attachment Theory and Sibling Relationships

Attachment theory will be used to try and explain the parent-child relationship and its impact on sibling relations, the interaction between peer relationships and sibling relationships and lastly, the connection between parental differential treatment and sibling relationships.

Bowlby believed that the early parent-infant attachment relationship would be used as a template for other ways of relating (Bretherton & Munholland, 1999). As such he supposed that early parent-child relationships would be internalised and held at a representational level as internal working models (Berlin & Cassidy, 1999; Cassidy, 1999; Pietromonaco & Feldman Barrett, 2000). These models would hold expectations of how to interact with others based on previous experience, and would include a view of others (parents) and the self (child) (Sroufe & Fleeson, 1986). Therefore children who had not been responded to sensitively would internalise a view of others as unpredictable, insensitive and the self as not worthy of attention and not loveable (Pietromonaco & Feldman Barrett, 2000; Weinfield, Sroufe, Egeland, & Carlson, 1999). Their way of relating to other people later in life would reflect these feelings about the self and the other (Cassidy, 2001). Therefore, attachment relationships are associated to later relationships as they are hypothesised to form the basis for expectations of how to relate to others. Because of the strength of these expectations, the learnt pattern of relating will be re-enacted in other relationships. This re-enaction will occur because other relationships will be chosen that ensure the pattern is expressed (Sroufe & Fleeson, 1986).

Bearing this in mind, how would attachment theorists explain the similarities found between the quality of the sibling relationship and the parent-child relationship?

Where children have experienced a secure relationship with their caregiver, it might be expected that aspects of that security are found in the sibling relationship. So, one might expect a positive sibling relationship based on a belief in the other's availability and responsiveness, and a sense that they are worthy of the other's attention

(Weinfield et al., 1999). In this way it would be hypothesised that the relationship with siblings should be similar, in some respects, to the primary caregiving relationship. So when children have had a positive relationship with their parents it would be expected that they would also have positive sibling relationships and this is supported by the evidence (Brody & Stoneman, 1996; Bussell et al., 1999; Dunn, Deater-Deckard, Pickering, & Golding, 1999b; Seginer, 1998). Attachment theory would also stress the inverse view - through an insecure parent-child attachment relationship, the child would internalise a view of themselves as unworthy of attention and that others are likely to behave in an inconsistent and unresponsive manner towards them (Weinfield et al., 1999). With a more negative parent-child relationship attachment theory would predict the development of more negative sibling relationships, this is also borne out in the research findings (Brody & Stoneman, 1996; Bussell et al., 1999; Dunn et al., 1999b; Seginer, 1998).

Sibling relationships and peer relationships have been found to follow distinctive patterns. Some have found considerable similarities between the two relationship types - when there are close and intimate sibling relationships there are correlations with close and intimate peer relations and when there is low involvement in the sibling relationship there is also low involvement in peer relationships (Seginer, 1998). However others have found a different pattern of relationships whereby close intimate peer relationships are correlated with low involvement and intimacy in the sibling relationship. Can attachment theory offer an explanation for these different patterns of relating? The emergence of social competence is thought to be an important developmental task that enables positive social relationships to occur (Erikson et al., 1985). Attachment relationships have been shown to be closely linked

to the development of social competence in that they provide a model for expectations on how to relate to others (Sroufe & Fleeson, 1986). Research has found that sensitive and responsive parenting towards a child increases the child's social skills in preschool. This greater social competence stays with children throughout their childhood meaning that they are more likely to develop friendships and be more competent in group situations (Weinfield et al., 1999). Therefore, it would be expected that when a child had a positive parenting experience the increased social competence that develops would mean other positive relationships would occur.

With regard to peer relationships, attachment theory would speculate that similarly to sibling relationships they would be influenced by the internal template of relating to others and therefore follow a similar pattern to the parent-child relationship and the sibling relationship (Sroufe & Fleeson, 1986). This also seems to be consistent with some of the research findings (Seginer, 1998). However, there are also reports of an incongruent pattern of relating between siblings peers whereby there is high peer intimacy and low sibling intimacy. This is more difficult for attachment theory to explain as it does not fit with the 'similarity to the internal working model' hypothesis. Attachment theory might speculate that as peer relations become more important these types of relationships becomes differentiated and assimilated into internal working models.

So far attachment research has not focused on providing an explanation for parental differential treatment and so this discussion can only provide tentative hypotheses.

As parental differential treatment is a form of parenting behaviour the literature that has investigated what causes differences in parenting behaviours will be briefly discussed. Research has found associations between sensitivity and responsiveness in

parenting behaviour and the adult attachment representation that the parent has (van Ijzendoorn, 1995). Van Ijzendoorn (1995) conducted a meta-analysis on 10 studies that have focused on these links and found that although there was a large range in effect sizes parental attachment status seemed to account for approximately 12% of the variance in the way parents respond to their children. Parents who have an autonomous/secure representation seem to be more sensitive and responsive to their child's needs than parents who have an insecure attachment representation. It may be that differential treatment is a form of insensitive, unresponsive and inconsistent parenting that could be associated with parents with an insecure attachment. If this is the case, it may be that parents with a secure attachment representation treat their children more similarly, or because their children feel valued and worthy they do not perceive parental differential treatment as unfair and therefore it would not impact negatively on them. There is some evidence to support this final part of the hypothesis. Teti and Ablard (1989) found that insecurely attached infants, were more likely to protest when their mother played with their older sibling than securely attached infants. Teti concludes that this finding may be because securely attached infants feel less threatened than insecurely infants when their parent switches their attention away from them because they are more certain of their parents availability. It is clear though that further research is required to determine whether there are associations between attachment and parental differential treatment.

CONCLUSION

Studies of family relationships have predominantly focused on the parent-child relationship. However, the importance of other relationships within the family context has now been recognised. This review has focused on sibling relationships

and individual differences between siblings. With so much apparent similarity between siblings, it is surprising to find such large differences in the quality of their relationships and in their outcome. Consideration has been given to the impact of constellation variables, temperament, peer relations, the parent-child relationship and parental differential treatment. Although most seem to show some impact on the siblings, the effects are small and often only correlational evidence has been provided.

Structural variables and Temperament

Structural variables only seem to account for a small percentage of the variance involved in the differences in sibling relationship quality. However, there is evidence that they do have some impact (Buhrmester & Furman, 1990; Volling & Belsky, 1992). There is also evidence that temperament impacts on the quality of the sibling relationship, but the influence of temperament appears to be moderated by other factors such as structural variables and the parent-child relationships that seem to have a combined influence over the sibling relationship (Brody, 1998; Stocker et al., 1989).

Temperament and constellation variables, although small in effect, may need to be looked at in a more holistic manner. Rather than investigating them as lone factors that influence siblings, it may be more appropriate to look at their impact with other variables such as parental differential treatment. For example, with peer relationships, gender seems to have a differential impact on the amount of intimacy between siblings and peers, with boys being more controlling with their friends than girls (Updegraff et al., 2002). Feinberg has shown that both self-esteem and

temperament, both moderators of social comparison, are involved in the perception of differential treatment (Feinberg et al., 2000).

Peer Relationships

Research has shown clear associations between sibling and peer relationships. Updegraff's (Updegraff et al., 2002; Updegraff & Obeidallah, 1999) findings of complementary, differentiated and compensatory patterns need to be replicated, and mechanisms that underlie when one pattern of relating will be found rather than another need to be determined. Additionally, as there seems to be bi-directional effect with the quality of the sibling relationship influencing the peer relationship, and the other way round, the lack of prospective studies makes it difficult to make predictions about direction of effects. Further investigation is required to elucidate this point.

The Parent-Child Relationship

Studies have shown associations between the quality of the parent-child relationship and the sibling relationship (Stocker & McHale, 1992; Volling & Belsky, 1992).

Where there are positive parent-child relations there also seem to be positive sibling relationships, and when more negative parent-child relationships are found there seems to be an association with negative sibling relationships. However, so far no studies have examined the direction of causality between the relationships.

With the discovery of the non-shared environment, researchers have been looking for factors that may be experienced differently by siblings. The discovery that parents

treat their children differently has been used to explain the sibling relationship and some of the differences between siblings (Bryant & Crockenberg, 1980; Jacobs & Moss, 1976; Reiss et al., 1994).

Parental Differential Treatment

Evidence initially pointed to the poorer psychosocial outcomes and negative sibling relationship quality associated with parental differential treatment (McHale et al., 1995; Volling & Elins, 1998). However research has started to investigate the factors that underlie what makes parental differential treatment a negative experience for both sibling outcomes and for the quality of the sibling relationship. An initial focus on the perception of fairness in parent's treatment of children has yielded some positive results; it seems that there are less negative sibling relationships found when parental differential treatment is perceived to be fair (Kowal & Kramer, 1997). Also when children have low self-esteem or high levels of emotionality they seem to report greater parental differential treatment (Feinberg et al., 2000).

Future Directions

With regards to parenting, much still needs to be clarified. It is apparent that parental differential treatment can have a significant impact on child outcome and the quality of the sibling relationship. However, researchers are only just beginning to discover the key factors that are involved. The analysis of the mechanism behind parental differential treatment and the realisation of the child-related factors are an important start to help elucidate the complexities in the influences on the quality of the sibling relationship and on sibling outcomes themselves.

Importantly, from a theoretical perspective, clarification of the link between attachment theory and parental differential treatment is required. Do children of parents with a secure attachment history experience less parental differential treatment children? Answering this question would further elucidate the predictive nature of attachment relationships and their power to govern future relations.

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**Part 2: Empirical Paper. Attachment
Representations, Parental Differential
Treatment and Sibling Relations**

ABSTRACT

This study investigated the associations between mothers' attachment status and children's relationships with siblings by examining maternal attachment status, sibling experience of parental differential treatment and the quality of sibling relationships. The sample comprised families involved in a longitudinal investigation of attachment patterns across generations. Forty-two families were available for follow-up and had more than one child. Mothers had been interviewed using the Adult Attachment Interview before the birth of their first child. The families were invited to participate in follow-up when their first-born child reached 16 years old. No associations were found between maternal attachment status and sibling relationship quality. Neither were links found between maternal attachment status and parental differential treatment. In support of previous research, analyses showed that sibling experience of parental differential treatment was able to predict the quality of the sibling relationship. Additionally, sibling relationship quality was associated with psychosocial outcome for the first-born child.

INTRODUCTION

The development of the Adult Attachment Interview signalled a move towards understanding the impact of attachment relationships throughout the life span. The theoretical underpinnings of the interview hypothesise that a representation of one's early experience is held in memory and that the representation is an ongoing reconstruction of those early relationships (van Ijzendoorn, 1995). Bowlby believed that the early parent-infant attachment relationship would be used as a template for other ways of relating (Bretherton & Munholland, 1999). As such he supposed that the early relationship would be internalised and held at a representational level as internal working models (Berlin & Cassidy, 1999; Cassidy, 1999; Pietromonaco & Feldman Barrett, 2000). These models would hold expectations of how to interact with others based on previous experience, and would include a view of others and the self (Sroufe & Fleeson, 1986). Therefore children who had not been responded to sensitively would internalise a view of others as unpredictable, insensitive and the self as not worthy of attention and not loveable (Pietromonaco & Feldman Barrett, 2000; Weinfield et al., 1999). Their way of relating to other people later in life would reflect these feelings about the self and the other (Cassidy, 2001). Therefore, attachment relationships are associated to later relationships as they are hypothesised to form the basis for expectations of how to relate to others. Because of the strength of these expectations, the learnt pattern of relating will be re-enacted in other relationships. This re-enaction will occur because other relationships will be chosen that ensure the pattern is expressed. One seeks to find validation for what one is expecting (Sroufe & Fleeson, 1986).

This study aims to investigate further parental attachment representations and the impact they have on relating to others. Parental attachment representations affect how parents treat their children and how this effects siblings and the sibling relationship will be investigated in this study (van Ijzendoorn, 1995). Therefore, a hypothesis for this study will be to look at the association between maternal attachment representations and sibling relationships. Developmental psychologists have also made links between sibling relationships, parenting and adjustment. Studies have shown that it is the different ways that parents treat their *individual* children that affects sibling relationships and individual outcome (Brody & Stoneman, 1994; Daniels et al., 1985; Dunn, 1992). An additional hypothesis therefore, will be to examine how parental attachment status affects parents' different treatment of their individual children, and whether both of these affect the quality of sibling relationships and individual adjustment.

Attachment research has found associations between adult attachment status, parenting quality and the development of prosocial behaviour (van Ijzendoorn, 1995; Weinfield et al., 1999). In a meta-analysis of 10 studies that examined parent attachment representations and parenting quality, van Ijzendoorn (1995) found that approximately 12% of the variance in parents' sensitive responding to their children could be accounted for by their own attachment patterns. Effect sizes ranged from 0.35 – 1.37 in these studies showing that in some situations there were substantial links between parental attachment status and sensitivity of parenting. Different classifications of attachment status seemed to show differing patterns of parental responsiveness. Those parents classified as autonomous/secure were more likely to react in a sensitive and responsive manner than those parents classified as insecure

(van Ijzendoorn, 1995). Therefore, it is hypothesised that parents with a secure representation will be more likely to treat their children in a similar manner because they are more consistently sensitive and responsive than those parents with an insecure attachment pattern who are more likely to be inconsistent and therefore treat their children differently.

The hypothesised associations between adult attachment patterns and positive sibling relationships may be explained by the links found between attachment and the development of social competence. The emergence of social competence is seen as an important developmental task enabling positive social relationships to occur. Through the development of internal working models attachment relationships are thought to provide a model for expectations on how to relate to others based on prior experience with parents; it is these models that then forms the basis for the development of social competence (Sroufe & Fleeson, 1986). Research has supported these claims as studies have shown that sensitive and responsive parenting increases a child's social skills in pre-school (Weinfield et al., 1999). This greater social competence stays with children throughout their childhood, meaning that they are more likely to develop friendships and be more competent in group situations (Erikson et al., 1985). Therefore, one might expect that those parents who respond sensitively to their children would have children with more positive sibling relationships. The mechanism for transmission of positive relationships is thought to be the child's internal working models that would already have experience of close supportive relationships and therefore have the skills to become more socially competent than children whose parents were not sensitive and responsive.

Early parent-child relationships are not only predictive of social competence but of other facets of psychosocial adjustment. Some studies have shown that where children develop an insecure attachment they are at an increased risk of developing problem behaviours although findings have varied (Fagot & Kavanagh, 1990; Lewis, Feiring, McGuffog, & Jaskir, 1984; Sroufe, Carlson, Levy, & Egeland, 1999).

Because early parent-child relationships are related to parent attachment patterns, this study will investigate whether maternal attachment status can predict the development of behaviour problems directly (Ammaniti, van Ijzendoorn, Speranza, & Tambelli, 2000).

Having examined the evidence to support the associations between attachment representations, parenting behaviour and sibling relationship quality, it is crucial to consider the evidence gained by developmental psychologists who have also investigated sibling relationships. Siblings and their relationships form an important part of a child's family environment and, in fact, children in the pre-adolescent years spend a third of their time outside of school with their sibling (McHale et al., 1995; Stocker & McHale, 1992). Given this fact it is unsurprising that investigations have linked the quality of the sibling relationship to later psychosocial adjustment (Bank et al., 1996; Yeh & Lempers, 2004). Studies have found that maternal report of sibling negative behaviour accounted for a significant amount of the variance for both younger and older sibling's internalising difficulties (Dunn, Slomkowski, Beardsall et al., 1994). Additionally, conflict in the sibling relationship has been found to account for unique variance in the later prediction of aggressive and delinquent behaviours once social-economic status, early child behaviour difficulties and rejecting parenting had been accounted for (Garcia et al., 2000).

Initial studies on sibling relations focused on structural differences (such as gender of the sibling dyad & age spacing between siblings) and the role of temperament in the sibling dyad that may cause differences in the relationship. However, these differences actually account for only a minimal proportion of the variance, suggesting that there are other crucial factors that are not accounted for by structural and temperamental differences (Daniels et al., 1985; Volling & Belsky, 1992).

Attention turned then to the impact of the parent-child relationship on the sibling relationship, and significant relations were found between the two (Brody, 1998; Brody & Stoneman, 1996; Bussell et al., 1999; Stocker & McHale, 1992; Volling & Belsky, 1992). For example, maternal control and punishment have been associated with aggression and conflict between siblings (Volling & Belsky, 1992), and higher levels of positivity in the parent-child relationship have been linked with higher levels of positive affect and prosocial behaviour in the sibling relationship (Brody & Stoneman, 1996). This has led researchers to consider what the crucial aspects of the parent-child relationship are that influence sibling relationships and siblings.

As siblings grow up in the same household and share 50% of the same genes, assumptions have been made that they also share similar experiences which, in turn, mean they ought to be similar to each other (Daniels, 1986). However, siblings have actually been found to be as different from one another as children growing up in different houses (Bussell et al., 1999; Daniels et al., 1985; Jenkins et al., 2003; Volling & Elins, 1998) and explanations have centred on what has been called the non-shared environment (Plomin et al., 1996). The non-shared environment

describes the different experiences that siblings face growing up in the same household. As a result, it is now thought that siblings in the same household experience very different family environments and interaction. One of the focuses for the non-shared environment position has been the different experiences of being parented i.e. how parents treat their children differently or 'parental differential treatment' (Dunn et al., 1985; Volling & Elins, 1998). It has been discovered that parental differential treatment influences later psychosocial outcome and the quality of the sibling relationship. Children's experience of both maternal and paternal differential treatment has been related to greater conflict and hostility in the sibling relationship, and to greater adjustment difficulties for the less favoured sibling (Boer et al., 1992; Brody, 1998; Dunn, 1992; Kowal & Kramer, 1997; McHale et al., 2000; Volling & Elins, 1998). It will be expected in this study therefore, that where children experience parental differential treatment it will have negative consequences on the quality of their sibling relationship and their individual adjustment.

Some studies have examined the link between sibling relationships and attachment theory. The main focus in each was on the concordance of attachment security between siblings (van Ijzendoorn et al., 2000; Ward, Vaughn, & Robb, 1988). Each study found that although there was significant consistency between sibling attachment status, there were also stable differences found. Differences in attachment security were supposed to be associated to differing maternal behaviour towards siblings. The studies demonstrated that differential treatment is a stable phenomenon and suggested that it affects siblings attachment patterns (Teti & Ablard, 1989; van Ijzendoorn et al., 2000; Ward et al., 1988). Additionally, a recent study by Sheehan & Noller (2002) investigated the role of adolescent attachment style in the effects of

differential parenting on psychosocial adjustment. Results found that adolescent attachment style seemed to mediate the association between parental differential affection and self-esteem and levels of anxiety. Therefore the experience of being disfavoured was associated with attachment insecurity and poorer adjustment.

So the findings from attachment research demonstrate the associations between parental attachment status and parenting quality and show links between parental attachment status and the development of prosocial and problem behaviours. From developmental psychology the associations between parenting behaviour, in the form of parental differential treatment, and sibling relationship quality have been demonstrated as have the links between parental differential treatment and problem behaviours. What has not yet been tested is whether there is an association between parental attachment status and parenting behaviour, in the form of parental differential treatment, and parental attachment status and the quality of the sibling relationships. These hypotheses will form the basis for the current study.

It has been suggested that parental attachment representations would be enacted in the way that children in a family are treated and interacted with by their parent (Sroufe & Fleeson, 1986). From this assumption, it is hypothesised that the parent-child interaction leads to the development of the child's internal working models thereby governing the child's later relationships with siblings and meaning it ought to be possible to predict one from the other. Therefore, parental differential treatment may be a behavioural expression of the parent's internal working model. As such it would be a mediating variable between parental attachment status and sibling relationship quality (Baron & Kenny, 1986).

In summary, parental attachment status will be used to predict (1) the quality of sibling relationships, (2) the perception of parental differential treatment of siblings. (3) psychosocial adjustment. (4) Additionally, parental differential treatment will be examined to determine whether it mediates the relationship between parental attachment status and sibling relationship quality. (5) Finally, as other studies have found links between sibling relationships and psychosocial outcome and between parental differential treatment and psychosocial outcome these issues will also be investigated.

METHOD

Participants and procedure

The sample comprised families who participated in the sixteen-year follow up of the London Parent-Child Project, a longitudinal investigation of attachment patterns across generations which began in the late 1980's with the recruitment of 100 pregnant women and their husbands/partners from prenatal classes at a London teaching hospital (Fonagy, Steele, & Steele, 1991). 57 families were available for this follow-up of which 42 families had more than one child and will be discussed in this paper. The families were invited to participate when their first-born child reached 16 years old (age range = 192-202 months, mean = 195.8 months, sd = 2.4). The second-born sibling was also invited to take part (age range = 107-183 months, mean age = 163.16 months, sd = 17.85). The mean age gap between the first- and second-born child was 32 months with a minimum gap of 12.1 months and a maximum gap of 85.8 months. There were 8 families who had more than 2 children

however, this study is focusing on data collected only from the first-and second-born children. All families that were contacted for this part of the study and had a second sibling agreed to participate. There were 12 girl-girl pairs, 7 boy-boy pairs, 12 older boy-younger girl pairs, and 11 older girl-younger boy pairs. The parents of the children were predominantly white and came from range of socio-economic backgrounds and all were competent in English (only one family in the sample came from an ethnic minority group). The mothers were aged between 23-40 years old when the first child was born while the fathers were between 23-49 years.

This study is focused on the information gathered regarding sibling relationship quality and parental differential treatment. Fathers have been involved in the study from its conception and they did participate in this 16-year follow-up. However, their results will be analysed and reported at a separate time. It is also important to note that the research investigated other factors that may impact on family relationships such as child temperament, life events and self-esteem. These issues will analysed and discussed in further papers.

Families were initially contacted by letter, which was followed up by a telephone call. Two trained interviewers visited each family. One carried out an interview with the first-born child and the other – the current author interviewed the second-born child. Questionnaire packs were given to each child and mother following the interview and family members were asked to answer the questions independently from one another. Of the 42 families involved, 40 first-born children completed questionnaires, and 39 were interviewed; 39 siblings completed questionnaires and 40 were interviewed; and 33 mothers completed questionnaires.

Ethical Approval

Ethical approval was sought and received from the University College London Committee on the Ethics of Non-NHS Human Research. The letter of approval is included in the Appendices, as are the consent forms and information sheets used in the study.

Measures

Questionnaire measures

Sibling Relationship Measures

To gain independent reports of the sibling relationship, each sibling and the mother were asked to complete the *Sibling Relationship Questionnaire*: a 48-item self-report questionnaire designed to capture the qualities of the sibling relationship (Furman & Burhmester 1995) (see appendices for questionnaire). Furman & Burhmester (1985) found that the main parts of the sibling relationship could be described by four main factors - warmth, conflict, rivalry and relative status/power. The SRQ shows good test-retest scores ranging between 0.67 to 0.85. To examine the convergent validity, the specific factors in the questionnaire – warmth, conflict, rivalry & power/status were found to correlate well but also discriminate between allied factors in the Family Environment Scale (Moser & Jacob, 2002). Two of the factors were examined in the current study - *Warmth* (“Some siblings do nice things for each other a lot, while other siblings do nice things for each other a little. How much do both you and this sibling do nice things for each other?”) and *Conflict* (“How much do you and this sibling insult and call each other names?”). Many other studies have utilised positive and negative aspects of the sibling interaction as an assessment of

the quality of the sibling relationship (Boll et al., 2003; Brody et al., 1996; Bussell et al., 1999; Dunn et al., 1999b; Dunn, Slomkowski, Beardsall et al., 1994; McHale et al., 1995; Volling & Belsky, 1992). Therefore the constructs of warmth and conflict were decided upon to represent sibling relationship quality in this study. Answers are given on a 5-point Likert scale, a score of 1 = hardly at all, 2 = not too much, 3 = somewhat, 4 = very much & 5 = extremely much. The internal consistency of the scale items for the *Warmth* and *Conflict* scales (for the present sample) were $\alpha = .92$ & $.88$ respectively for first-born report, $\alpha = .95$ & $.91$ respectively for second-born report and $\alpha = .92$ & $.88$ for maternal report.

To assess each sibling's perception of parental differential treatment the self-report questionnaire the *Sibling Inventory of Differential Experience* (SIDE) was given to each sibling (Daniels & Plomin, 1985). This well utilised self-report questionnaire asks directly about siblings' experience of differential treatment. The SIDE showed good two week test-retest reliability coefficients ranging from 0.77 to 0.93 (Daniels & Plomin, 1985). The current author has not found studies examining either the convergent or criterion validity of the SIDE and is therefore unable to report on these aspects of its psychometric properties. Sub-scales relating to differential parental treatment were administered as these provide information on *Differential Maternal Affection* and *Differential Paternal Affection* ("Has enjoyed being with us") as well as *Differential Maternal Control* and *Differential Paternal Control* ("Has been strict with us"). Answers are given on a 5-point scale, 1 = parent has been much more like this toward my sibling than me, 2 = this parent has been a bit more this way toward my sibling than me, 3 = this parent has been the same toward my sibling and me, 4 = this parent has been a bit more this way toward me than my sibling, 5 = this parent

has been much more this way toward me than my sibling. The internal consistency of the scales (derived from the present sample) are reported for first born and second born children respectively. *Differential maternal affection* $\alpha = .76$ & $.34$, *differential maternal control* $\alpha = .74$ & $.62$. The alpha coefficients for *differential paternal affection* were $\alpha = .79$ & $.58$ and were $\alpha = .85$ & $.70$ for *differential paternal control*. Most of the subscales show good internal consistency except for the second born *differential maternal affection*. Accordingly, this lack of internal consistency means that interpretations should only be cautiously made from the results.

Psychosocial adjustment

Both adolescents completed *The Strengths and Difficulties Questionnaire* (SDQ) (Goodman, 1997) a 25-item self-report scale devised by Goodman which allows information to be gathered about current adjustment levels. The SDQ displays good convergent validity with The Rutter Parent and Teacher Questionnaires, which have well established validity and reliability in measuring adjustment difficulties (Goodman, 1997). Also, the SDQ is able to discriminate well between those who have problems and those who do not (Muris, Meester, Eijkelenboom, & Vinchen, 2004). Test-retest scores over a 4-6 month period have shown a reliability of 0.62 (Goodman, 2001). Additionally to both siblings completing the questionnaire, mothers were requested to complete a questionnaire about each sibling, providing a multi-informant perspective. The questionnaire yields 4 problem based subscales, *Hyperactivity* (“Restless, overactive, cannot stay still for long”), *Emotional Symptoms* (“Many worries, often seems worried”), *Conduct Problems* (“Often fights with other children or bullies them”), *Peer Problems* (“Rather solitary, tends to play alone”). These can be summed to form a *Total Difficulties Score*. For the present

study the *Total Difficulties Score* will be analysed. The internal consistency of the scale for first born, second born and maternal reports of first and second born are as follows $\alpha = .71, .69, .77$ & $.89$ respectively.

Interview Measures

Adolescents Interview

Each adolescent was interviewed about their relationship with their sibling as part of a wider interview gathering information about relationships. Questions regarding sibling interactions were taken from the Friends and Family Interview and can be seen in the Appendices. This interview was designed to assess coherence concerning attachment relationships as well as to provide evidence and information on domains such as the quality of the sibling relationship (Steele & Steele, 2004). Interviewing focused on what the siblings do together, whether they are able to confide in each other, what they like best and least about each other. From these questions subscales were developed (by the author) that related to levels of *Warmth/Closeness* and *Conflict*. These subscales were based on the factors discovered to be important in the *Sibling Relationship Questionnaire*. To achieve a high level of *Warmth* an adolescent would need to have described a companionable and affectionate relationship with their sibling, where they were admiring of each other, and where they were able to share intimate information with each other. Levels of *Conflict* were based on the amount of quarrelling, competition and antagonism described in the relationship. A 4-point scale was used to code these subscales, 0 = no evidence, 1 = slight/mild evidence, 2 = moderate evidence and 3 = marked evidence. To establish reliability two researchers coded 10 of the same interviews and discussed each coding. A further 15 were then coded without discussion by the same two researchers to

establish an inter-rater reliability co-efficient. These 15 scores produced substantial correlations for warmth = .787 and for conflict = .714 showing the reliability of the measures.

Parent Interview

The Adult Attachment Interview. The interview was administered to all mothers during their pregnancy with the first-born child; for further information see Fonagy, Steele & Steele (Fonagy et al., 1991). A study investigating the psychometric properties of the Adult Attachment Interview found that the mean test-retest reliability coefficient measured 3 months apart using different interviewers was 0.90 showing great stability (Sagi et al., 1994). The discriminate validity of the different classifications was also investigated, classifications were found to be independent of non-attachment related memory and intelligence measures (Sagi et al., 1994). In this interview subjects are asked to describe their childhood relationship with each parent and to provide specific memories to evidence their descriptions. The interview asks directly about childhood experiences of rejection, abuse, illness, hurt and upset. Additionally, the interviewee is asked to offer explanations for their parent's behaviour towards them and to consider the impact that their early experiences have had on their later life and development. The interviews were coded according to the rating guidelines established by Main & Goldwyn (Main & Goldwyn, 1996). A classification of *F – Autonomous-secure*, was made if the interview was a coherent narrative. Autonomous adults provide a coherent, consistent and relevant narrative about their experiences. This way of being is strongly associated with secure attachment relationships in the parent-child relationship. A classification of *D - Dismissing*, was made when the interview displayed a lack of evidence to support

reports of idealised parenting. Dismissing adults appear to be highly idealising of their attachment experiences but are actually unable to provide substantive evidence to back up their claims, and the detail in their narrative contradicts the idealisation. A classification of *E – Preoccupied*, was made when an interview includes irrelevant details, when interviewees seem angry yet passive and still preoccupied with the parental relationship. A classification of *U – unresolved* is made when there appears to be an unresolved trauma or loss. In cases where this classification is given participants are also given one of the other three classifications. Because of the small sample size the results will be analysed using a 3-way split in the attachment classifications into *Autonomous/secure, dismissing and preoccupied*.

RESULTS

The results are divided into 9 sections. Descriptive statistics are provided in the first section, which give an overview of the sample characteristics. Following this, the process that was used to reduce the number of dependent variables for analysis is presented. The composite variables that were formed as a result of this process are then analysed to determine whether background factors such as demographic information cause them to vary. Subsequently, the associations between maternal attachment status, sibling relations and parental differential treatment are examined. Further to this, the links between parental differential treatment and sibling relations are investigated. Finally, the impact of sibling relationships and experience of differential treatment on psychosocial adjustment are analysed.

All variables were examined to check their distribution. Those that were not normally distributed were transformed.

Sample characteristics

22 of the mothers in this phase of the study were given Adult Attachment classifications of autonomous-secure preceding the birth of their first child. 11 were classified as dismissing and 9 as preoccupied. Chi-Square analysis showed that there was no significant difference between the distribution of attachment classifications for those in the present sample in comparison to those who were no longer taking part in the study ($\chi^2(4) = 2.360, p = .307$).

Social class was measured categorically, using five categories ranging from unskilled to professional. No significant differences were found for social class in relation to the different attachment categories (for mothers $\chi^2(6) = 8.241, p = .221$, for fathers $\chi^2(6) = 4.689, p = .584$). Analysis of variance (ANOVA) showed there were no differences in the age of either mothers or fathers for the differing attachment classifications ($F(2, 38) = .633, p = .537, F(2, 38) = .493, p = .615$ respectively).

Table 1 presents the observed and expected frequencies of the attachment classifications by gender. No significant differences were found for the gender of the children with the attachment classification of the parents (first-born & mother's AAI classification $\chi^2(2) = .900, p = .638$, second-born & mother's AAI $\chi^2 = 1.002; df = 2; p = .606$).

Table 1. Observed and expected counts for maternal attachment security by gender of first- and second-born children.

Maternal Attachment Classification	Observed (Expected)			
	First-born		Second-born	
	Female	Male	Female	Male
Autonomous/Secure	5 (6)	6 (5)	6 (6.3)	5 (4.7)
Preoccupied	6 (4.9)	3 (4.1)	4 (5.1)	5 (3.9)
Dismissing	12 (12)	10 (10)	14 (12.6)	8 (9.4)

Table 2 shows the means and standard deviations of the first- and second-born dependent variables by gender. Independent sample t-tests were carried out and showed significant gender differences in the first-born report of differential paternal control. First-born boys were more likely to report their father controlling them more than their sibling whereas girls were more likely to report their father controlling their sibling more than them, $t(37) -3.041, p = .004$. Additionally, significant gender differences were found for the second-born questionnaire report of warmth in the sibling relationship suggesting that second-born girls were more likely to report warmth in the sibling relationship than second-born boys, $t(36) 2.264, p = .030$. This is supported by the maternal report of the sibling relationship which displays a similar finding again with mothers of second-born girls more likely to report warmth in the sibling relationship than mothers of second-born boys, $t(32) 2.283, p = .029$.

Table 2. Means and standard deviations for dependent variables by gender

	Means (S.D.)			
	First-born		Second-born	
	Female	Male	Female	Male
SDQ Maternal report - total problem behaviour	2.02 (.78)	2.40 (1.02)	1.94 (1.24)	2.13 (1.22)
SDQ – total problem behaviour	12.32 (4.87)	11.06 (5.31)	10.7 (5.35)	11.60 (3.73)
SRQ – sibling relationship warmth	3.28 (.64)	2.91 (.66)	3.20 (.66)	2.69 (.71)
Interview sibling relationship - warmth	2.05 (.69)	1.78 (.73)	1.9 (.97)	1.67 (.84)
SRQ – sibling relationship warmth	2.53 (.82)	2.64 (.76)	2.67 (.94)	2.72 (.81)
Interview sibling relationship - conflict	1.10 (.64)	1.22 (1.00)	1.05 (.95)	1.11 (1.08)
SIDE - differential maternal affection	2.7 (.63)	2.99 (.19)	2.95 (.24)	3.05 (.30)
SIDE - differential maternal control	3.25 (.72)	3.27 (.46)	2.90 (.42)	2.93 (.48)
SIDE - differential paternal affection	2.86 (.52)	3.02 (.51)	2.95 (.35)	3.12 (.32)
SIDE - differential paternal control	2.83 (.50)	3.35 (.56)	2.88 (.41)	2.94 (.35)

Scoring

SRQ = 1 – 5, 1 = hardly at all (warmth or conflict), 5 = extremely (warmth or conflict)

Sibling relationship Interview measure = 0 – 3, 0 = no evidence (warmth or conflict), 3 = marked evidence (warmth or conflict)

SIDE = 1 – 5, 1 = my sibling has been much more this way than I have,
 2 = my sibling has been a bit more this way than I have,
 3 = my sibling and I have been the same in this way,
 4 = I have been a bit more this way than my sibling,
 5 = I have been much more this way than my sibling.

Data reduction of dependent variables

Measures of Problem Behaviour

To reduce the number of variables and therefore to diminish the Type 1 error rate composite measures were formed where moderately strong correlations were found between variables tapping related constructs. Firstly the amount of overlap between different reports of child behaviour problems was examined. Maternal reports of the Strengths and Difficulties questionnaire about the first- and second-born children have been correlated with the adolescent self-report measures in Table 3. Significant correlations were found between maternal and self-report and so these measures were combined to form two composite variables, one of the *first-born problem behaviour* and the other of the *second-born problem behaviour*.

Table 3. Univariate correlations between problem behaviour scores

Variable	1.	2.	3.	4.
1. SDQ total problem behaviour – maternal report about first-born		.081	.512**	.105
2. SDQ total problem behaviour – maternal report about second-born			.247	.541**
3. SDQ total problem behaviour – first-born self report				.158
4. SDQ total problem behaviour – second-born self report				

Note. SDQ = Strengths and Difficulties Questionnaire.

*p<.05. **p<.01.

Measures of Sibling Relationship Quality

The associations between interview, questionnaire & cross-informant reports of sibling relationship quality were investigated. The sibling relationship measures looked at levels of warmth and conflict in the sibling relationship. Table 4 shows correlations between the warmth variables. Strong associations were found within informant, first-born questionnaire report was highly correlated with first born interview report of warmth. Additionally, second-born questionnaire report of warmth was significantly correlated with second-born interview report of warmth in the sibling relationship. However, there are weak correlations between first- and second-born reports suggesting that they are reporting the warmth in the relationship differently. Maternal report of warmth does not consistently correlate with either of the adolescent reports. Therefore 3 composite measures will be formed: firstly, the first-born questionnaire and interview – *first-born report warmth*; the second born questionnaire and interview – *second-born report warmth*; and lastly the maternal report of warmth in the sibling relationship – *maternal report warmth*.

The picture was rather different with regards to variables measuring conflict in the sibling relationship as can be seen in Table 5. Substantial correlations were found both within informant (interview and questionnaire report) and between informants (first-born, second-born and maternal report). All (but one) of the variables correlate well with each other suggesting that adolescents were reporting their conflict in more similar ways than their warmth. There was one non-significant finding between the second-born interview and maternal reports of conflict but as both measures correlate with all other variables it would still seem appropriate to form one composite variable of conflict in the sibling relationship - *conflict*.

Table 4. Univariate correlations between measures of sibling relationship quality – warmth

Variable	1.	2.	3.	4.	5.
1. SRQ first-born report		.531**	.222	.279	.234
2. Interview with first-born			.227	.355*	.482**
3. SRQ second-born report				.654**	.416*
4. Interview with second-born					.189
5. SRQ maternal report					

Note. SRQ = Sibling Relationship Questionnaire.
* $p < .05$. ** $p < .01$.

Table 5. Univariate correlations between measures of sibling relationship quality – conflict

Variable	1.	2.	3.	4.	5.
1. SRQ first-born report		.447**	.465**	.370*	.662**
2. Interview with first-born			.363*	.481**	.523**
3. SRQ second-born report				.687**	.425*
4. Interview with second-born					.220
5. SRQ maternal report					

Note. SRQ = Sibling Relationship Questionnaire.
* $p < .05$. ** $p < .01$.

Measures of Sibling Experience of Differential Treatment

In this next section, the overlap between different reports of sibling experience of differential treatment was examined. The Sibling Inventory of Differential Experience scores were recoded to provide scores of relative differential experience as recommended by the authors (Daniels & Plomin, 1985). This provides a continuous scale whereby a greater score signifies greater difference experienced (without indicating the direction of this experience). These variables were then correlated to examine associations in reporting of differential experience. The correlations in Table 6 show strong within informant associations for differential affection and strong between informant associations for differential control. Firstly, a clear association was found between first-born report of differential treatment for maternal and paternal affection. There were also significant correlations between second-born reports of differential treatment for maternal and paternal affection. With regards to differential control the pattern was somewhat different. There were significant associations between first-born maternal control and second-born maternal control. There were also clear correlations between first-born paternal control and second-born paternal control. Four composite measures for differential treatment were formed, two relating to affection: first-born experiences of differential affection combining maternal and paternal scores – *first-born differential affection* and second born experiences of differential affection combining maternal and paternal scores- *second-born differential affection*. Two further composites were formed for differential experiences of control, one consisting of first-born and second-born experience of differential maternal control – *maternal differential control* and the other consisting of first-born and second-born experience of differential paternal control – *paternal differential control*.

Table 6. Univariate correlations between assessments of sibling differential treatment

Variables	1.	2.	3.	4.	5.	6.	7.	8.
1. First-born maternal affection		.433**	.493**	.217	.080	.126	.150	.065
2. First-born maternal control			.338*	.501**	.224	.391*	.128	.503**
3. First-born paternal affection				.376*	.147	-.091	.314	.101
4. First-born paternal control					.329	.162	.117	.447**
5. Second-born maternal affection						.315	.621**	.315
6. Second-born maternal control							.338*	.301
7. Second-born paternal affection								.205
8. Second-born paternal control								

Note. SIDE = Sibling Inventory of Differential Experience.

* $p < .05$. ** $p < .01$.

Summary of Composite Variables Formed

Psychosocial adjustment composite variables
<i>First-born problem behaviour</i>
<i>Second-born problem behaviour</i>
Sibling relationship composite variables
<i>First-born report warmth</i>
<i>Second-born report warmth</i>
<i>Maternal report warmth</i>
<i>Conflict</i>
Sibling experience of differential treatment composite variables
<i>First-born differential affection</i>
<i>Second-born differential affection</i>
<i>Maternal differential control</i>
<i>Paternal differential control</i>

Associations between background factors and dependent variables

To investigate the possibility of background factors influencing the dependent variables, ANOVA's were carried out. All of the composite dependent variables were examined in relation to mothers' and fathers' age (divided into 5-yearly categories ranging from 20-25 to 45-50); mothers' and fathers' socio-economic status (measured categorically using 5 categories from unskilled to professional); mothers' level of education (measured on a 5-point scale from "left school without qualifications to post-graduate degree); and first- and second-born gender. Second-born age was also examined by categorising the age into four 24-month categories (ranging from 96-120 months to 169-192 months). First-born age was not included in the analyses as all first-born children were 16-years of age at the time of testing.

Mothers' socio-economic status in relation to maternal reports of sibling warmth was significant. It appears that mothers from a lower socio-economic class were more likely to report warmth in the sibling relationship than mothers from higher socio-economic groupings, $F(3, 29) = 5.392, p = .004$. Additionally, significant differences were found in maternal reports of sibling relationship warmth due to gender of the second-born sibling, $t(32) 2.283, p = .029$. Mothers were more likely to report higher levels of warmth in the sibling relationship if the second-born child was a girl rather than a boy. Mothers' socio-economic status and second born gender were therefore included as a covariate in any further analyses using *maternal report warmth* in the sibling relationship. No other significant differences were found.

Associations between maternal attachment representations and the quality of the sibling relationship

To investigate whether the quality of the sibling relationship varied as a function of maternal attachment classifications ANOVA statistics were used. No significant results were found for the *first-born report warmth*, $F(2,33) = .248$, $p = .782$, *second-born report warmth*, $F(2,33) = .289$, $p = .751$, *maternal report warmth* (Maternal socio-economic status and second-born gender were included in this analysis as covariates), $F(2,28) = .971$, $p = .391$, or for *conflict*, $F(2,24) = 1.602$, $p = .222$. The first hypothesis expecting links between maternal attachment status and sibling relationship quality was thus not supported.

Table 7. Means and standard deviations of adult attachment classifications and sibling relationship quality

Sibling relationship quality	AAI Classifications means (sd)			F	p
	Dismissing	Preoccupied	Secure		
<i>First-born report warmth</i>	5.07 (1.4)	4.8 (1.05)	5.17 (1.15)	.248	.782
<i>Second-born report warmth</i>	4.87 (1.98)	4.47 (1.17)	4.93 (1.45)	.298	.751
<i>Maternal report warmth</i>	2.7 (.65)	2.9 (.36)	3.16 (.54)	.971	.391
<i>Conflict</i>	9.96 (3.8)	7.5 (1.96)	10.26 (3.44)	1.6	.222

Associations between maternal attachment representations and sibling report of differential parental treatment

ANOVA's were used to examine whether reports of parental differential treatment varied according to different maternal attachment classifications. All four of the composite scores of parental differential treatment were investigated. No significant effects were found for *first-born differential affection*, $F(2, 36) = .533$, $p = .591$, or for *second-born differential affection*, $F(2, 34) = 1.361$, $p = .270$. Neither were significant effects found from *differential maternal control*, $F(2, 34) = .425$, $p = .657$, or for *differential paternal control*, $F(2, 33) = .193$, $p = .825$. The second hypothesis that expected associations between maternal attachment status and sibling experience of differential treatment was not supported.

Table 8. Means and standard deviations of adult attachment classifications and sibling experience of differential treatment.

Sibling differential treatment	AAI Classifications means (sd)			F	P
	Dismissing	Preoccupied	Secure		
<i>First-born differential affection</i>	.812 (.65)	1.04 (.55)	1.08 (.70)	.533	.591
<i>Second-born differential affection</i>	.76 (.64)	.38 (.42)	.82 (.70)	1.36	.270
<i>Maternal differential control</i>	1.27 (.55)	1.07 (.67)	1.03 (.67)	.425	.657
<i>Paternal differential control</i>	.80 (.62)	.64 (.78)	.82 (.69)	.193	.825

Associations between maternal attachment representations and psychosocial adjustment

ANOVA's were used to examine the association between maternal attachment status and first-born and second-born problem behaviour. No significant effects were found (*first-born problem behaviour* $F(2, 30) = 1.408, p = .246$, *second-born problem behaviour* $F(2, 22) = .647, p = .533$).

Table 9. Means and standard deviations of problem behaviour scores by attachment classification.

Problem behaviours	AAI Classifications means (sd)			F	p
	Dismissing	Preoccupied	Secure		
<i>First-born problem behaviour</i>	13.50 (6.96)	17.25 (3.82)	12.72 (5.39)	1.408	.246
<i>Second-born problem behaviour</i>	10.66 (5.78)	14.42 (5.41)	13.45 (6.15)	.647	.533

Associations between sibling experience of differential treatment and sibling relationship quality

Regression analyses were conducted to determine the association between parental differential treatment and the quality of the sibling relationship. All four variables relating to parental differential treatment (*first-born differential affection, second-born differential affection, differential maternal control and differential paternal control*) were included in the model and four separate regression analyses were run, for each of the variables relating to sibling relationship quality (*first-born report warmth, second-born report warmth, maternal report warmth & conflict*). Where *maternal report warmth* was used as the dependent variable maternal socio-economic status and second born gender were entered into the analysis before the differential treatment variables to account for their variance in this report of the sibling relationship.

The regression analysis predicting *first-born report warmth* was not significant, $F(4, 28) = .324, p = .860$. Neither was the overall model for *second-born report warmth*, $F(4, 29) = 1.336, p = .280$. The model for *maternal report warmth*, however, neared significance $F(6, 23) = 2.52, p = .051$. In this last model a specific association between sibling experience of differential treatment and sibling relationship quality was found to be significant. The individual regression coefficients showed that *maternal report warmth* could be predicted independently by *differential maternal control*, $\beta = -.433, p = .043$. This strong relationship showed that an increase in differential control by mothers was associated with less warmth in the sibling relationship. This finding was supported by a significant individual coefficient from the analysis of *second-born report warmth*. As was found with *maternal report*

warmth, the *second-born report warmth* could also be predicted by *differential maternal control*, $\beta = -.448$, $p = .041$.

The regression model for *conflict* was not significant ($F(4, 21) = 2.062$, $p = .122$), however, the individual coefficient of *differential paternal control* was able to predict the degree of conflict in the sibling relationship, $\beta = .484$, $p = .046$. This suggests that there was more conflict in the sibling relationship when children experienced more differential control by fathers. These findings support the literature that has found links between greater differential parental treatment and poorer sibling relationship quality.

Table 10. Differential treatment regression coefficients for each of the sibling relationship dependent variables

First-born report warmth	β	T	P
<i>First-born differential affection</i>	.090	.445	.660
<i>Second-born differential affection</i>	.114	.565	.576
<i>Maternal differential control</i>	.093	.395	.695
<i>Paternal differential control</i>	-.216	-.930	.360
Second-born report warmth	β	T	P
<i>First-born differential affection</i>	.200	1.092	.284
<i>Second-born differential affection</i>	.125	.680	.502
<i>Maternal differential control</i>	-.448	-2.139	.041
<i>Paternal differential control</i>	.073	.354	.726
Maternal report warmth	β	T	P
<i>First-born differential affection</i>	-.180	-1.028	.315
<i>Second-born differential affection</i>	.025	.144	.887
<i>Maternal differential control</i>	-.433	-2.143	.043
<i>Paternal differential control</i>	.234	1.188	.247
Conflict	β	T	P
<i>First-born differential affection</i>	-.171	.857	.401
<i>Second-born differential affection</i>	-.301	1.527	.142
<i>Maternal differential control</i>	.163	.735	.470
<i>Paternal differential control</i>	.484	2.118	.046

Associations between sibling relationship quality and psychosocial adjustment

All four measures of sibling relationship quality (*first-born report warmth, second-born report warmth, maternal report warmth & conflict*) were used as predictors in regression analyses using the adolescents problem behaviours as the dependent variables. Two regression analyses were run, one using the *first-born problem behaviour* composite, the other using the *second-born problem behaviour* composite as the dependent variable. On both occasions, second-born gender and maternal socio-economic status were entered into the analysis before the sibling relationship variables to account for their variance in the maternal report of warmth in the sibling relationship. The overall model was significant for the first-born child, $F(6, 19) = 3.499, p = .017$, meaning that there was an association between sibling relationship quality and child problem behaviours. In fact the statistics (adjusted R Square = .375) suggests that 37% of the variance in child problem behaviours can be accounted for by the quality of the sibling relationship. None of the individual coefficients for sibling relationship quality were significant, although first-born report of warmth neared significance, $\beta = -.382, p = .064$. The negative relationship suggesting that increased reporting of warmth in the sibling relationship by the first-born child was associated with a decrease in first-born problem behaviours. There were no associations between the variables of sibling relationship quality and the second-born problem behaviours, the overall model was not significant, $F(6, 17) = .436, p = .842$, and none of the individual coefficients was able to significantly predict the occurrence of problem behaviours in the second-born child. These findings provide some support for the literature linking the quality of sibling relationships to later outcome.

Table 11. Sibling relationship regression coefficients for the problem behaviours dependent variables

First-born problem behaviour	β	T	P
<i>First-born report warmth</i>	-.382	-1.966	.064
<i>Second-born report warmth</i>	-.108	-.480	.637
<i>Maternal report warmth</i>	-.213	-.942	.358
<i>Conflict</i>	.243	1.22	.237
Second-born problem behaviour	β	T	P
<i>First-born report warmth</i>	.323	1.017	.328
<i>Second-born report warmth</i>	.162	.408	.690
<i>Maternal report warmth</i>	-.428	-1.094	.294
<i>Conflict</i>	.264	.863	.404

Associations between parental differential treatment and psychosocial adjustment

The measures of parental differential treatment (*first-born differential affection, second-born differential affection, differential maternal control and differential paternal control*) were used to predict *first-born problem behaviour* and *second-born problem behaviour*. Two regression analyses were carried out, one using the *first-born problem behaviour* as a dependent variable, the other using the *second-born problem behaviour*. Neither of the models was significant, $F(4, 24) = 2.170, p = .103$ for *first-born problem behaviour* and $F(4, 18) = 1.110, p = .382$ for *second-born problem behaviour*. These findings do not support the literature that has found an association between sibling differential treatment and adjustment.

Table 12. Differential treatment regression coefficients for the problem behaviour dependent variables

First-born problem behaviour	β	T	P
<i>First-born differential affection</i>	.144	.774	.447
<i>Second-born differential affection</i>	-.315	-1.702	.102
<i>Maternal differential control</i>	.228	1.126	.271
<i>Paternal differential control</i>	.300	1.461	.157
Second-born problem behaviour	β	T	P
<i>First-born differential affection</i>	-.279	-1.150	.265
<i>Second-born differential affection</i>	.017	.075	.941
<i>Maternal differential control</i>	.248	.975	.343
<i>Paternal differential control</i>	.327	1.240	.231

DISCUSSION

The study was designed to examine the association between maternal attachment patterns and parental differential treatment of siblings, and the impact both have on sibling relationship quality. The sample consisted of 42 sibling pairs whose family had been involved in a longitudinal study where mothers had been interviewed on the Adult Attachment Interview prior to the birth of their first-born child. The current study followed up these families when the first-born reached 16 years old. A primary hypothesis was that differences in maternal attachment status could predict the quality of the sibling relationship. A second hypothesis investigated whether maternal attachment status predicted sibling experience of parental differential treatment. Thirdly, the hypothesised association between maternal attachment status and problem behaviours was examined. A fourth hypothesis looked at whether parental differential treatment mediated the link between maternal attachment status and sibling relationship quality. The last hypothesis investigated the associations between sibling relationship quality, parental differential treatment and psychosocial adjustment.

Maternal attachment representations, sibling relationship quality, parental differential treatment and adjustment

The first hypothesis predicted an association between maternal attachment status and sibling relationship quality. It was expected that mothers with a secure attachment representation would have been more likely to pass on the capacity to develop positive relationships with others, meaning that their children would be more likely to have good sibling relations. The results however, found no significant link between the two.

A second hypothesis examined whether parental differential experience could be predicted from maternal attachment representations. It was expected that those mothers with a secure attachment pattern would be more able to respond similarly to both their children, whereas those mothers with an insecure pattern would be more likely to treat their children differently as their behaviour would be less sensitive and predictable. Nevertheless, the results found that there were no associations between maternal attachment representations and parental differential treatment. A further hypothesis that parental differential treatment mediated the relationship between maternal attachment representations and sibling relationship quality was not tested because of the previous two null results.

There are a number of reasons why these null results could have been found. Firstly, because of a lack of stability in the adult attachment classification. Secondly, because of other important relationships, such as father-child relations, the marital relationship and peer relations, which may have had significant impacts that were unaccounted for. Lastly, it may be that adult attachment representations were unrelated to parental differential treatment.

Mothers were interviewed about their attachment representations prior to the birth of their first child, 16 years before the current study took place. So far, longitudinal studies have found mixed results as to the long-term stability of attachment (Lewis, Feiring, & Rosenthal, 2000; Waters, Merrick, Treboux, Crowell, & Albershiem, 2000). A doctoral dissertation in progress examining the Adult Attachment Interview's stability over five years found 90% were allocated to the same three main categories (three-way classifications) (Perez, In progress). Of 51 participants that

took part in the same longitudinal research studied in this paper, 46 were given the same broad attachment classifications five years later ($k = .91$, $p < .001$) (Perez, In progress). The current study assumed that maternal attachment representations provided a stable influence over 16 years, which is as yet unproven. It is distinctly possible that there was variation in the attachment patterns because of subsequent relationship and life influences that would alter the internal working models and therefore ways of relating to others (Belsky, Sligo, Jaffee, & Woodward, 2005).

In this study parenting measures and sibling relationship quality have been investigated in relationship to maternal attachment patterns, however it is well known that children form multiple attachment relationships. What is not known yet though is whether internal working models that are developed are an amalgamation of all attachment relationships, a hierarchical one, or whether the maternal relationship has primacy (if the mother functions as the primary caregiver) (Ammaniti et al., 2000). Therefore, other important relationships such as the father-child one may also impact on sibling relationship quality and therefore need to be considered. Additionally, it has been demonstrated that mothers with an insecure attachment pattern are more likely to parent effectively if they have a supportive marital relationship which appears to moderate the impact of insecure attachment patterns (Das Eiden, Teti, & Corns, 1995). Finally, during adolescence, peer relationships begin to dominate over parental ones (Updegraff et al., 2002). It is therefore conceivable that peer influences have had significant input into the internal working models of the siblings, overriding some of the impact of the maternal attachment representation. Future studies may wish to consider assessing other

significant relationships in both the sibling and maternal world to examine the links between each of them, differential parenting, and sibling relationship quality.

Differing classifications within the Adult Attachment Interview have been related to differences in parental sensitive responding towards their children (van Ijzendoorn, 1995). Differences in sensitive responding are not, however, synonymous with treating children differently from one another. Differential treatment may be influenced by factors other than adult attachment, such as temperament and sibling behaviour (Feinberg et al., 2000). Aside from this there is little information on how adult attachment patterns link to parenting domains other than sensitive responding. Although it is known that warmth is linked to parental attachment status, there is considerable variation in the effect sizes from 0.35-1.67 and there is little research on the association between attachment status and control (van Ijzendoorn, 1995). It may be that the influence of attachment is specifically linked to certain parenting domains and not others. Further research would help to provide a clearer picture of how adult attachment is related to all aspects of parenting.

A third hypothesis investigated the link between maternal attachment status and child behaviour outcome. No significant effects were found. This is unsurprising given previous research findings based on looking at parent-child attachment patterns and their links to behaviour problems. These studies have found associations between child attachment patterns and behaviour problems only in high-risk samples, suggesting that insecure children are at greater risk from behaviour problems only when faced by multiple risk factors (Erikson et al., 1985). The adolescents in the

current sample were from a low-risk group, therefore no associations would have been expected.

Parental differential treatment, the sibling relationship and psychosocial adjustment

This study did find a link between parental differential treatment and the quality of the sibling relationship which supports previous research findings (Feinberg et al., 2000; McHale et al., 2000; Volling, 1997). Maternal report of warmth in the sibling relationship could be predicted by the extent of differential maternal control experienced by siblings. Where there was an increase in differential control by mothers there was less warmth in the sibling relationship. This finding was given further credence by the second-born report of warmth in the sibling relationship where, again, increases in differential experience of maternal control were associated with lower levels of warmth in the sibling relationship. Although the overall model between sibling experience of parental differential treatment and conflict in the sibling relationship was not significant, there was a positive individual association between increases in differential paternal control and increases in conflict in the sibling relationship. It is interesting that in all cases it was experiences of differential control that impacted on the sibling relationship rather than warmth. Other studies have found significant effects of differential affection on the quality of the sibling relationship (Brody et al., 1996; McHale et al., 1995). Kowal & Kramer investigated children's understanding of parental differential treatment and found that where children perceived parental differential treatment to be fair the different treatment had less impact on the quality of the sibling relationship (Kowal & Kramer, 1997). It may be that these adolescents experienced differential control as less fair than

differential warmth. Or, it may reflect a real association that perceived differential control has a greater impact on the sibling relationship than differential affection.

Significant associations were found between sibling relationship quality and psychosocial adjustment which uphold findings from other studies (Bank et al., 1996; Garcia et al., 2000). First-born report of warmth in the sibling relationship was related to first-born problem behaviours - increases in warmth in the sibling relationship were related to decreases in problem behaviours. It is interesting that there were no associations between sibling relationship quality and second-born adjustment problems, and this difference is supported by the lack of correlation between first- and second-born report of problem behaviours. Other studies, however, have found that from early to middle childhood and in adolescence sibling's difficult behaviours correlated with one another and were both related to variations in the sibling relationship quality (Dunn, 1996; Dunn, Slomkowski, Beardsall et al., 1994; Garcia et al., 2000). Nevertheless, second-born and maternal reports were significantly correlated to each other meaning that there was similar reporting of problems between the two. This low risk and small sample reported a small range of problem behaviours about the second-born child meaning that it may have been difficult to detect an effect.

In contradiction with other studies where sibling conflict has been predictive of later difficult behaviours, this study found no significant links between conflict in the sibling relationship and adjustment problems (Garcia et al., 2000). A study by Garcia linked later delinquency to destructive sibling conflict which was defined as the "extreme behaviours in the negative conflict sequences" (Garcia et al., 2000). It

is clear that these behaviours were observed rather than reported by the siblings and that in the current sample reporting of such behaviours was rare. It appears, therefore, that warmth in the sibling relationship functions as a protective factor to adjustment difficulties, and that conflict is a risk factor - but only when the conflict in the sibling relationship is of a sufficiently extreme nature.

The finding that there was no association between parental differential treatment and problem behaviours was surprising given the negative impact shown by differential treatment on sibling relationships and the association between sibling relationships and problem behaviours. The literature provides evidence for the negative impact of parental differential treatment on adjustment (Brody, 1998; Brody et al., 1998; McHale et al., 2000). This particularly seems to be the case when children perceive differential treatment to be unfair (Kowal & Kramer, 1997; McHale et al., 2000). In these circumstances it appears to negatively impact on self-esteem of the disfavoured sibling. However, there is some evidence that those who already have low self-esteem may be more likely to notice parental differential treatment (Boll et al., 2003; Brody, 1998; Brody et al., 1998; Feinberg et al., 2000).

Conclusion

This study aimed to investigate further the intergenerational transmission of the internal working models by examining the links between maternal attachment representations, parental differential treatment and sibling relationships. No evidence was found to support the assumptions that different classifications of attachment representation would lead parents to treat their children differently, or that these differing classifications impacted on the quality of the sibling relationship. Also, no

link was found between maternal attachment status and child adjustment. However, there were associations found between parental differential treatment and sibling relationships, supporting previous studies that have found similar results.

The small sample size cannot be overlooked as the low power may have led to poor sensitivity that missed crucial effects. Additionally, the lack of observational data meant that the study relied on self-report to provide the studies data. However, the multi-informant responses ensured that different perspectives were recorded and, where results were found, different informants showed similar associations to one another which provides evidence that reporting was accurate. This study was an important step in thinking beyond the parent-child attachment relationship to examine the impact of attachment on relationships to others.

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Part 3: Critical Review

OVERVIEW

This review will firstly outline the process that I undertook in deciding upon the research questions and the data collection. It will move on to discuss the methodology used and describe strengths and weaknesses in the research design. Following this, a prolonged discussion will further debate some of the results and the current evidence base. Lastly, the clinical implications of the findings and more generally of the subject areas will be considered.

PROCESS

My historical context

My working interest in family relationships and their impact on the psychosocial functioning of the children within the family started after I finished university. My first job after graduating was working with adolescents with emotional and behavioural problems in a secondary school. My 'task' was to prevent them from being excluded by developing a positive working relationship with them. This work was rewarding but frustrating as the focus on the child without considering their family environment seemed to miss the most fundamental interactions and influences on the child's emotional and behavioural states. Following this I started a research post investigating the family relationships in 'non-traditional' families. This study took a holistic approach in examining the family environment. The mother-child, father-child, sibling-child, peer-child and school-child interactions were inquired into using a combination of interview and questionnaire methods with mother, father, first-born child and teacher. This well thought out study highlighted to me the

importance of considering multiple family relationships in determining child adjustment.

The development of the study

As an introduction to thinking about our doctoral thesis Dr Howard Steele presented his longitudinal study into the intergenerational transmission of attachment patterns. In a later meeting he told me of the plans to carry out a sixteen-year follow up of families that had been participating prior to the birth of their first-born child. He was keen to include second-born children in this follow up study and we agreed my involvement in the study would focus on the sibling aspects to the family relationships.

The literature search that followed highlighted to me the importance of sibling relationships within the family context and the associations that they had with child psychosocial adjustment. It appeared to me that the culmination of many previous studies had indicated that the parent-child relationship and, in particular, parental differential treatment, was key in understanding variations in sibling relationships. In attachment research there are clear links between parenting behaviour and parental attachment representations and it seemed important, therefore, to clarify whether parental attachment representations were involved in differential treatment of siblings.

Links to clinical practice

Coincidentally, the importance of differential parental treatment has become apparent in my current clinical work. Two of my current clients have described how they felt their parents treated them very differently to their siblings and both have developed a deep sense of unacceptability and worthlessness as a result. In one case, the client felt that their sibling received all the attention and that because of this focus their parents were unavailable to them. They were left feeling unimportant and ignored. This way of relating to others has continued throughout the client's life and they now are in an unhappy relationship that mirrors this early pattern. Additionally, this client has cut off relations with their sibling. The second client felt that their sibling received all the positive attention and that they received all the negative attention leaving them feeling 'not as good as' the sibling. Interestingly though, it appears that the sibling also was not happy in being 'the good one' as a great deal of pressure was placed upon them. In this situation the sibling relationship has remained intact but the parent-child relationship is poor. As with the first client, the second also finds that they repeat these early interactions so that they are often in the position of feeling 'not as good as' others. In both cases this deep-rooted sense of low self-worth has brought the clients to seek psychological therapy.

CRITIQUE OF METHODOLOGY

It is important to discuss the strengths and weaknesses in the study design and methodology to determine how the study could have been improved and the role the methods played in the results that were found. The credence and interpretations given to the results might be altered if the methods and design of the study were found to lack validity (Barker, Pistrang, & Elliot, 2002). If the research methods were found to be unreliable they may account for the lack of associations found between maternal attachment status and parental differential treatment and sibling relationship quality.

Power & sample size

One hundred families were originally recruited for the longitudinal study and sixteen years later 57 families were still contactable and willing to participate. Of those, 42 families had more than one sibling and were utilised in this research. Examination of effect sizes to help calculate required power prior to the start of the study found that parental attachment can predict child attachment representations with effect sizes ranging between 0.28 – 0.40 (Steele & Steele, 2004). Research predicting the quality of sibling relationships from parent-child relations find effects ranging between 0.23 – 0.45 (Bussell et al., 1999). Power calculations showed that a sample size of 36 is required with an effect size of 0.45. It was therefore crucial that as many as possible of the 42 families available took part to decrease the Type II error rate. The good relationship that Dr Steele had built up with these families meant that none turned down the invitation to participate. Even with all families participating the sample was still small. Because of the small sample size it can only be expected that effects of 0.45 or larger will be reliably found. Previous effect sizes that have been detailed

above show a considerable range with 0.45 being the highest. It is unfortunate, therefore, that this study did not have necessary power to pick up smaller effect sizes. This lack of power may explain the lack of findings between maternal attachment status and parental differential treatment & sibling relationships.

Questionnaire measures

To determine the strengths and weaknesses of the questionnaire measures and therefore the impact they may have had on the results, their reliability and validity will be examined. The questionnaire measures selected for this study were chosen because they were well known and well used within their domains. Test-retest reliabilities were good for all questionnaire measures. Internal consistency scores testing the reliability of each scale were high for all the sub-scales of the questionnaires, with one exception (second-born report of differential maternal affection) suggesting that all items were measuring the same construct (Barker et al., 2002). All questionnaires had good face and content validity. The Sibling Relationship Questionnaire (SRQ) and Strengths and Difficulties Questionnaire (SDQ) both showed good convergent validity with other questionnaires measuring similar constructs. The different factors in the SRQ were able to correlate with allied factors and discriminate between non-allied factors in other questionnaires (The Family environment scale). The SDQ was able to sensitively discriminate between those having problems and those who did not and showed good correlations with other questionnaire measuring the same construct (The Rutter Parent & Teacher Questionnaires). It is unfortunate that studies have not reported further psychometric properties of the Sibling Inventory of Differential Experience (SIDE). The convergent validity of the SIDE, which tests whether constructs are correlated with

other questionnaires measuring related constructs, and discriminate validity, which examines whether the constructs tested are uncorrelated to non-related measures, has not been examined (Barker et al., 2002). Generally though, the questionnaire measures chosen showed strengths in their psychometric reliability, internal consistency and validity. The multi-informant approach, receiving information from both siblings and mother, strengthened the study design.

The SIDE measures two aspects of differential parenting. In improving the study it would have been beneficial to investigate other parts of parenting behaviour where differential treatment may be found, for example time spent together (Kowal & Kramer, 1997). Additionally, gender, self-worth and temperament have been found to be moderators of parental differential treatment. Although gender did not account for any of the variance in this study, measures of the other two may have helped to explain the lack of association found between attachment and parental differential treatment (Feinberg et al., 2000).

In addition to those questionnaire measures that were in the study, in hindsight it would have been helpful to include questionnaire measures of the parent-child relationship. The hypothesis that attachment status alters parenting behaviour, and therefore the parent-child relationship, would have been tested. In addition to this, research has shown the importance of the family context on sibling relationships and therefore information on the parent-child relationship and even marital relations would have helped to clarify determinants that cause the sibling relationship to vary (Yeh & Lempers, 2004). Inclusion of information from fathers would have also provided a more rounded picture of the family interactions and relationships.

Interview measures

The interview measures provided important information for the study, therefore their reliability and validity could influence how the results are interpreted. The Interview gauging the quality of the sibling relationship asked open-ended questions. A pre-determined structure was then used to code transcripts of the interviews. The codes were developed by the current author but discussed with a co-rater so that inter-rater reliability could be established. High inter-rater reliability coefficients were found providing evidence for the reliability of the results. The substantial correlations between the questionnaire and interview approaches provides convergent validity and give credence that the adolescents were reporting their perceptions of the sibling relationship from self- and interview-report in a similar way. Low correlations (for first-born report) between warmth in the sibling relationship measured in the interview and conflict measured by questionnaire ($r = -.19$ for first-born, $r = -.35$ for second-born) and conflict in the interview and warmth measured by questionnaire ($r = -.14$ for first-born, $r = -.37$ for second-born) demonstrates the interview measure's discriminate validity. However, a more qualitative approach looking for themes that arose in the material might have gained interesting and different information on the sibling relationships, such as information on rivalry and competitiveness.

The Adult Attachment Interview (AAI) was carried out by researchers who had been trained in its use (Fonagy et al., 1991). The psychometric properties of this interview have been well established, however the long-term stability has not. The issue of AAI stability and its implications for the current studies results will be further debated later on in the review. It is well known that children attach to more than one individual. Therefore, information about fathers' attachment patterns could have

provided greater insight into the study of how parental attachment patterns alter parenting behaviours and sibling relations (Cassidy, 1999). It would have been interesting to see whether the hypotheses made about attachment status, parenting behaviour and sibling relations would have been strengthened when both parents shared attachment status.

A further improvement to this study would have been the inclusion of interview data to back up the findings on parental differential treatment. Research has shown that when self-report measures of differential treatment are utilised, less difference is reported than when using observational or interview measures (McHale et al., 2000). In addition, an interview assessment of the parent-child relationship would have more clearly helped to ascertain the nature of the links to maternal attachment status and sibling relationship quality.

Observational data

A flaw in this study was the lack of observational data that meant no objective perspective could be gained by the author (Jenkins et al., 2003). It would have been valuable to collect observational information on the quality of the sibling relationship, parental differential treatment and parent-child interaction.

Summary of critique of methodology

In search of gaining a clear picture of the family relationships first-born children, second-born children and mothers were involved in the study to gain different perspectives on the same topic. Questionnaires and interviews measured the same

constructs to determine the robustness of responses from first-born child and second-born child. This multi-informant and multi-method approach is a strength in the research design.

Improvements to the study have also been described. Inclusion of observational data and measures from fathers and of the parent-child relationship would have improved the study design. Additional information such as temperament and marital relations would also have proved useful. Although inclusion of all the mentioned facets would have improved the design, they would have substantially increased the number of analyses that needed to be carried out, potentially increasing the Type I error rate.

IMPLICATIONS FOR THEORY AND RESEARCH

The predictive nature of adult attachment patterns

The results from the current study found no associations between maternal attachment representations measured by the Adult Attachment Interview (AAI) pre-birth of the first-born child and parental differential treatment or sibling relationship quality measured 16 years later. To investigate whether the null findings demonstrate that there are no real associations between these constructs or whether the results could be due to methodological problems it is important to determine whether there is any evidence to support the notion that the AAI is stable over long time periods. Theoretically, some attachment theorists state that although internal working models are subject to environment influence, with age they becomes less accessible and therefore less susceptible to change. Considerable stability over time is assumed (Hamilton, 2000; Waters, Hamilton, & Weinfield, 2000). Others, however, feel that this presentation of secure attachment is unfair as it is discussed as if it provides

inoculation to later adverse experience, suggesting that later experience will not have negative impacts when actually they may do (Lewis et al., 2000; Waters, Hamilton et al., 2000). So, with both perspectives in mind, greater stability would suggest that either the environment has not changed or that internal working models are not easily modifiable. Few studies have concentrated on the stability of adult attachment representations and most have focused on attachment stability from childhood to adulthood. These studies will be discussed because if stability is found from childhood to adulthood it could be reasonably assumed to remain stable in adulthood as well. However, research has found a mixed picture with regards to the stability of the attachment representation over long periods of time (Hamilton, 2000; Lewis et al., 2000; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000; Weinfield, Sroufe, & Egeland, 2000). Waters et al., carried out the Strange Situation on 50 children. Twenty years later these same participants were interviewed with the Adult Attachment Interview (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Seventy two per cent received the same secure/insecure rating on the Adult Attachment Interview as they had with the Strange Situation. They found that the presence of stressful life events was associated with those who had changed attachment patterns. Hamilton also found considerable stability from childhood to adolescence (Hamilton, 2000). Seventy seven per cent of the 30 participants received the same secure/insecure attachment classification on the Adult Attachment Interview as they did with the Strange Situation. Having a negative life event was associated with maintenance of insecure attachment. In both of these studies the impact of the environment on the attachment is clear, also clear is the stability of attachment patterns over time. This provides evidence for the presence of stable internal working models governing attachment patterns over time but also that the

continuity may be maintained by stable environmental- rather than within person- factors and that changes are related to environmental events (Hamilton, 2000).

In contrast to the findings of stability, Weinfield's et al. study with a high-risk sample discovered little continuity in attachment patterns over 18 years (Weinfield et al., 2000). 50.9% of participants kept the same secure/insecure Adult Attachment classification 18 years after the Strange Situation was carried out. The study found that maternal life events were not correlated to stability or change in attachment patterns. However, they did discover that those who remained insecure were more likely to be maltreated than those who became secure. Additionally, those participants who became insecure were more likely to have had mothers with depression. Lewis et al. also discovered that attachment security at one year was not related to attachment at 18 years (Lewis et al., 2000). They found that only 38% of their sample of 84 middle–upper class participants remained insecure at the second time point, additionally, 43% changed from secure to insecure. These discontinuities in attachment patterns provide convincing evidence that there is continued influence of environmental events and family stressors on attachment representations and that internal models do change as a result of environmental influences (Lewis et al., 2000).

So how do these studies influence understanding of the current study? The current study assumed stability in AAI classifications over a period of 16 years. The impact of the environment on altering attachment patterns is clear in both studies that have found continuity of attachment and in studies that have not. This environmental influence on attachment representations has not been taken into consideration in the

current study. Although there is evidence that in this sample there is continuity in maternal attachment representations over a period of five years (Perez, In progress), it would not be possible to assume the stability in attachment representation for a longer time period than this. Bearing this in mind, it is not surprising that the results did not show links between maternal attachment status and parental differential treatment or sibling relationships 16 years later. The environmental changes that would have occurred in this time period are likely to have altered a significant number (at least 30% as found by Waters et al., & Hamilton) of the attachment patterns leading to alterations in maternal behaviour to their children.

Attachment and parenting

In understanding the lack of association between maternal attachment representations and parental differential treatment in the current study, it is important to thoroughly discuss the research that has investigated attachment and parenting to determine whether the null finding was to be expected or not. Research has focused on the well-evidenced link between parental attachment status and parental sensitive responding to the child. A study by Crowell and Feldman (Crowell & Feldman, 1991) investigated a sample of 45 mothers and their children. They examined mothers' behaviour towards their child during separation and reunion situations in relation to maternal attachment status. They found that mothers classified as secure prepared their children more thoroughly for separations and were more responsive to their children during reunions than those mothers classified as either preoccupied or dismissing. The association between differing adult attachment classifications and differences in parental sensitivity have been replicated a number of times. In a meta-analysis of 10 studies that have focused on these links, van Ijzendoorn found that

although there was a large range in effect sizes parental attachment status seemed to account for approximately 12% of the variance in the way parents respond to their children (van Ijzendoorn, 1995). Since this analysis, research has moved on to examine whether sensitive parenting is a stable phenomenon but results have been varied. Lohaus et al., (Lohaus, Keller, Ball, Voelker, & Elban, 2002) found low stability in maternal sensitivity when looking at interactions when infants were three months and 12 months. They concluded that during development the meaning of what it is to be sensitive may change therefore reflecting changes in behaviour. Another study, however, did find relative stability over a four-year period in parents' monitoring and warmth behaviours towards their adolescent children (Forehand & Jones, 2002). Further research is needed to clarify patterns of stability.

Other studies have tried to broaden the search for determinants of parenting behaviour and links to attachment status. Adam et al., (Adam, Gunnar, & Tanaka, 2004) investigated whether parental emotion could be a mediating or moderating variable in the relationship between adult attachment status and parenting behaviour. One hundred mothers and infants took part in the study. An association was found between attachment status and parental warmth but only when maternal depressive symptoms had been accounted for. Where there were low levels of depression there were no differences in parenting according to attachment classification. However, with higher levels of depression, mothers classified as dismissing were found to show significantly less warmth than secure mothers. This suggests a moderating influence of depressive emotion.

How do these findings relate to the results found in the current study? Interestingly, what becomes apparent is the lack of breadth in research linking adult attachment status to parenting behaviour. There appears to be little published evidence as to the associations between attachment and parenting behaviours other than warmth/sensitivity and this may reflect a lack of significant findings. The current study investigated links between differential parental warmth and control in relation to attachment status and found no associations. Further research would help to clarify whether the lack of association between parental control and attachment status is genuine or caused by measurement problems, such as low power or low AAI stability. The lack of a link between parental warmth and attachment is unexpected given the clear links between warmth/sensitive responding and attachment in other studies. The reason for the lack of association may be due to the low power missing smaller effects, because of discontinuity in attachment classifications, or because differential warmth is not connected with attachment status in the same way that individual sensitive responding is connected. Further research to untangle these issues is important. Additionally, because of the variability in studies addressing stability of sensitive behaviour, further work confirming patterns of behaviour would help to determine the link between parenting and later adjustment.

CLINICAL IMPLICATIONS

Sibling Relationships

The current study supports previous research that has found significant associations between sibling relationships and the individual psychosocial adjustment of each sibling. There is now a substantial body of research that has discovered that warmth in the sibling relationships is related to positive adjustment and that high conflict is

related to negative adjustment (Bank et al., 1996; Brody, 1998; Daniels & Plomin, 1985; Garcia et al., 2000; Moser & Jacob, 2002; Seginer, 1998). This study found negative links between first-born report of warmth in the sibling relationship and problem behaviours in the first-born child. Where there was less warmth in the sibling relationship the first-born child was more likely to show problem behaviours. No associations were found between conflict in the sibling relationship and problem behaviours, maybe because the level of conflict was not sufficiently extreme - Garcia found that 'destructive' sibling conflict was predictive of later delinquency (Garcia et al., 2000). Although there are no causal links, the well-replicated findings suggest that it would be valuable to routinely assess the quality of the sibling relationships in clinical practice when working with children and adolescents.

Research has also found significant associations between sibling relationships and peer ones. Sometimes peer relationships appear to compensate for poor sibling ones and sibling relationships appear to compensate for poor peer relations (Updegraff & Obeidallah, 1999). Other studies, though, have found that peer relationships often mirror sibling ones. Seginer recruited 147 school children who were asked about their sibling and peer relationships (Seginer, 1998). High peer acceptance and low peer acceptance were related to similar aspects of the sibling relationship. Rejection by peers is related to hyperactivity, disruptive behaviour and aggression in childhood and adolescence (Dunn & McGuire, 1992). If, as it appears to be the case, that children's social competence with peers is linked to their sibling relationships it seems appropriate to investigate and focus on sibling relationships when treating children who are experiencing peer difficulties.

Having reviewed the literature linking conflictual sibling relationships and later adjustment difficulties it is important to consider how these mechanisms may work. No studies have provided evidence of causality between these two domains, however it is probable that they influence each other (Noller, 2005). But the study of developmental psychopathology has led to the investigation of protective factors and risk factors that may account for later problem behaviours (Sroufe et al., 1999). The impact of sibling relationships will be examined under this framework of potential risk. Two explanations predominate in the literature regarding the mechanisms underlying the association between negative sibling relations and adjustment problems. Firstly, according to attachment theory, a template for relating to others is developed through early life experiences. And, although it is continually updated it provides a framework for expectations in relating to others (Sroufe & Fleeson, 1986). In this way the family and their interactions become part of the individual's internal model of relationships, therefore the sibling relationship feeds directly into the individual characteristics of each child (Brody & Stoneman, 1994; Daniels, 1986; Furman & Buhrmester, 1985). Secondly, social learning theory provides the basis for direct transmission of behaviours from one situation to another (Bandura, 1963). The learning of coercive behaviours are negatively reinforced and thought to provide training for the potential to engage in antisocial behaviour later in life (Bandura, 1961; Bank et al., 1996; Volling & Belsky, 1992). Additionally, while negative sibling relationships prevail, prosocial skills required for the development of positive other relationships are not developed (Bank et al., 1996; Brody, 1998). In this way negative sibling relationships can be thought of as having a double negative consequence. Not only are they a risk factor for later adjustment problems but also they deny the protective consequences of having a good sibling relationship. When

working with children with adjustment problems it would be important to consider not only what the general family processes are but to closely investigate the role siblings play in the development of problem behaviours. Additionally, a careful analysis of the social learning factors and sibling influences on the individual characteristics of the child would be crucial. Where positive sibling relationships are found, the interactions can be highlighted and used to promote the development of other positive relationships.

These findings give credence to the necessity of careful examination of all close family relationships during assessment and treatment. Currently, the involvement of siblings and the sibling relationship are not usually key focuses for therapy (unless in family therapy or with early rivalry difficulties). Although the author has found no studies that have focused on sibling relations as an intervention, where the sibling relationship poses a risk to individual psychosocial adjustment, careful attention should be paid. Positive sibling relations could be strengthened and utilised to buffer further against later adversity.

Parental Differential Treatment

As with sibling relationships, there is a substantial body of research linking the experience of parental differential treatment to later adjustment problems and to negative impacts on the sibling relationship (Brody & Stoneman, 1996; Brody et al., 1998; Feinberg et al., 2000; McHale et al., 1995; Volling & Elins, 1998). This study's findings that there are associations between parental differential treatment and the quality of the sibling relationship is in keeping with previous research. The findings showed that greater experience of differential maternal control was linked to

less warmth in the sibling relationship. Additionally, more conflict was experienced in the sibling relationship when there was a greater amount of differential paternal control. However, surprisingly in this study there were no links between parental differential treatment and adolescent problem behaviours. Because there were negative impacts on the sibling relationship it is not possible to assume that in this sample parental differential treatment was not having a negative impact. With the body of research finding associations between parental differential treatment and later adjustment problems it is important that in clinical work the clients' experience of parental differential treatment is routinely investigated not only in children but in adults as well.

So how does parental differential treatment come to affect the sibling relationship and lead to later adjustment difficulties? Again thinking under the auspices of a developmental psychopathology framework, children's experience of being the disfavoured sibling is a risk factor for later adjustment problems (Brody, 1998). It is thought that feelings of inferiority, shame and resentment lead to the disfavoured sibling feeling less worthy of love and seeing themselves as unacceptable, as if they have done something wrong or bad (Brody, 1998; Brody et al., 1998). Focusing clinically on the implications therefore, it is a clear pathway to depression and low self-worth which does not end in childhood but that continues into adulthood (Boll et al., 2003).

These findings and the associated literature lead us to think that interventions should focus on helping parents to understand the impact of their behaviour on their children, particularly where relationships between siblings are a source of concern or

are implicated in problem behaviour. Yet studies have shown that it is actually differing perceptions by children that really affect the impact of parental differential treatment. It appears that the meaning attributed to the different treatment is crucial to its impact (Kowal & Kramer, 1997). Where different treatment is perceived as fair it is associated with good self-esteem and positive sibling relationship quality. However when treatment is thought to be unfair it is associated with poor outcome (Kowal & Kramer, 1997; McHale et al., 2000). Interestingly, it is in adolescence that children are most likely to report parental differential treatment as unfair (McHale et al., 2000). Additionally, there is evidence that the presence of low self-esteem affects whether parental differential treatment is noticed, so it may be that having low self-esteem means that children perceive parental differential treatment as unfair leading them to feel worse about themselves (Feinberg et al., 2000). With a clinical focus these findings suggest that where there are sibling relationship problems it would be pertinent to explore whether parental differential treatment is involved particularly in adolescence where it is more likely to be perceived as unfair. Where it is found interventions initially should focus on understanding children's attributions about their treatment in comparison to their siblings and attention should be directed to the possibility that the attributions may be linked to an already low self-esteem.

In conclusion, parental differential treatment seems to be a risk factor for later adjustment problems. The child's perception of fairness of treatment and underlying self-esteem issues would seem to be the most appropriate foci for intervention given the evidence found so far. Many parents are all too aware of trying to treat their children in the same way and these foci for intervention circumvent the need to raise this delicate subject as an objective fault in parenting.

Attachment

The current paper found that there were no associations between maternal attachment status and child behaviour problems. Little research has been carried out on the links between adult attachment status and child adjustment difficulties, however some associations between maternal attachment status and parenting behaviour have been established and were discussed above. Less sensitive responding by a parent is linked to long-term lower pro-social behaviour in their child and more adjustment problems (Weinfield et al., 1999). Children who have been responded to in a sensitive manner are more likely to be successfully independent, have positive friendships and a greater ability to empathise with others (Weinfield et al., 1999). From a clinical perspective then, sensitive parenting seems to promote positive psychosocial adjustment. New research has been carried out looking at interventions promoting sensitive responding in parents. A meta-analysis of sensitivity and attachment interventions showed that those interventions which started six months after the birth of the first child, were short, and which focused on changing levels of sensitivity (rather than focused on effecting social support or mental representations) were the most affective in initiating change (Bakermans-Kranenburg, van Ijzendoorn, & Juffer, 2003). In addition, research has found that those parents who have changed their attachment status from insecure to secure can parent just as effectively as those who have always had secure patterns (Roisman, Padlon, Sroufe, & Egeland, 2002).

The associations between attachment classification and child behaviour problems can be thought of under the guiding framework of developmental psychopathology. The attachment relationship can be thought of as protective to, or as a risk factor for, later psychosocial adjustment (Carlson & Sroufe, 1995; Greenberg, 1999). The internal

working models based on early relationships are thought to both influence, and be influenced by, later experience so that they are continually transforming (Sroufe et al., 1999). Therefore, insecure attachment is not seen deterministically as the cause of later pathology, instead it may be one of many risk factors that combine to cause later difficulties. In the same way, secure attachment is not thought to prevent problems from occurring but may be a protective factor in aiding later resilience (Sroufe et al., 1999). The lack of association found in the current study between attachment and adjustment may reflect an insufficient quantity of risk factors. When working clinically with children with adjustment problems an insecure parent-child attachment relationship and maybe even an insecure adult attachment pattern should be assessed and the possibility of parenting interventions should be considered to lessen the risk.

The associations between child attachment classification and behaviour problems have shown an interesting divide. In high risk samples, studies have found that security of attachment can predict later competent functioning, greater sociability and compliance as well as more independence and empathic understanding of others (Erikson et al., 1985). In contrast, children who are insecurely attached are more likely to show behaviour problems and show poorer social skills (Erikson et al., 1985; Lewis et al., 1984). However, in low risk samples the attachment security seems less able to predict later outcome - studies have found that child attachment status is unable to predict psychosocial adjustment (Bates, Maslin, & Frankel, 1985; Fagot & Kavanagh, 1990). This may further explain the lack of associations found in the current study as they were a low risk sample.

How do these findings fit within the developmental psychopathology framework?

Children that have experienced a secure attachment to a caregiver develop the sense that they are worthy of care and can attain it when necessary. This experience is thought to be protective over later adversity because when facing difficulty they will be able to seek out support (Carlson & Sroufe, 1995). In terms of risk factors, those who have experienced an insecure attachment pattern will have less faith that others will provide support and care and therefore will not necessarily seek it when facing stress. This is likely to mean that these individuals are more likely to feel isolated and unsupported when in difficulty – a risk factor for poor psychosocial adjustment (Carlson & Sroufe, 1995). In this way developmental psychopathology has provided a model for understanding the differences found between the low and high risk samples. Securely attached children facing high-risk environments show resilience to later pathology, whereas the multiple risks appear to impact negatively on insecurely attached children meaning that they are more prone to adjustment problems. When working clinically with children who have faced multiple risk factors it seems crucial to determine whether the parent-child relationship can be thought of as a further risk which may need intervention or as a protective factor that could be identified as a potential buffer to adjustment problems.

These findings have important implications for clinical work. Firstly, parenting behaviour is crucial for the development of positive relations with others.

Interventions focused on changing parenting behaviours seem successful in promoting change. Additionally, the risk and protective factors involved in the parent-child attachment relationships should be investigated and taken into consideration.

CONCLUSION

This review has discussed the process that the author went through in determining the research questions. It then moved on to critique the methodology. The multi-method, multi-informant approach was a particular strength of the study. Receiving questionnaire and interview information from both siblings, as well as questionnaire data from mothers, provided the author with a well-balanced perspective of the sibling relationships, problem behaviours and parental differential treatment. The study would have been improved by recruiting a larger sample, including information from fathers, having a measure of the parent-child relationship, and using observational data. A particular weakness of the study was the implied stability of the Adult Attachment Interview over a period of 16 years. This topic and the link between attachment and parenting were chosen for a prolonged discussion. Studies that investigated attachment stability were examined and a mixed response was found. It was concluded that stability of attachment classifications over 16 years could not be assumed.

Parental attachment status and parenting behaviours were then investigated.

Significant and long-standing associations have been shown between attachment status and warmth/sensitivity (van IJzendoorn, 1995). However, there are few reports on associations between parental attachment status and other forms of parenting behaviour. The lack of information on other forms of parenting behaviour impacts on the current study in two main ways. Firstly, it may be that attachment status is unrelated to parenting control behaviours. Or it may be that attachment status is unrelated to parental differential treatment. Further investigation is required.

The review then considered the clinical implications of the current study using the framework of developmental psychopathology. Negative sibling relationships were thought to be a risk factor for later adjustment problems and positive relations were seen as having a protective function. The experience of parental differential treatment was shown to be another risk factor - it was thought that interventions should focus on the child's attribution of meaning to different treatment rather than on parents' objective behaviour. Secure parent-child attachments are thought to provide resilience in later life, as are sensitive and responsive parenting. Insecure parent-child attachments and a lack of sensitive and responsive parenting are seen as risk factors for later adjustment difficulties. Interventions focusing on altering parental sensitivity have found success with short-term focused interventions that start six-months after birth (Bakermans-Kranenburg et al., 2003).

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APPENDICES

Appendix 1 – Adolescent Consent Form

London Parent-Child Project
 University College London & The Anna Freud Centre
 Consent Form for 16-yr old or sibling
 ID No. _____

Project Title: Attachment, sibling relationships and well-being in adolescence

	Yes	No
Have you read the Participant Information Sheet?		
Has the project been explained to you orally?		
Have you had the opportunity to ask questions and discuss the study?		
Have you received satisfactory answers to all your questions?		
Have you received enough information about the study? Who have you spoken to?		
Do you understand that you are free to withdraw from the study without penalty at any stage?		
Do you agree to the publication of the results of this study in an appropriate outlet/s?		
Do you agree to have the interview tape recorded?		
Do you agree to have the interview video recorded?		
At the end of the study the recordings will be kept in a locked office when not in use. Do you agree for this to happen?		

Comment or Concerns During the Study

If you have any comments or concerns you should discuss these with the Principal Researcher (Howard Steele). If you wish to go further and complain about any aspect of the way you have been approached or treated during the course of the study, you should email the Head of The Graduate School <gradschoolhead@ucl.ac.uk>, North Cloisters, Wilkinds Building, UCL, Gower Street, London WC1E 6BT who will take the complaint forward as necessary.

Signed:..... Date:.....

Full Name in Capitals:

Signature of Witness:..... Date:.....

Full Name in Capitals:

Appendix 2 – Parent Consent Form

London Parent-Child Project
 University College London & The Anna Freud Centre
 Consent Form
 ID No. _____

Project Title: Attachment, sibling relationships and well-being in adolescence

	Yes	No
Have you read the Participant Information Sheet?		
Has the project been explained to you orally?		
Have you had the opportunity to ask questions and discuss the study?		
Have you received satisfactory answers to all your questions?		
Have you received enough information about the study? Who have you spoken to?		
Do you understand that you are free to withdraw from the study without penalty at any stage?		
Do you agree to the publication of the results of this study in an appropriate outlet/s?		
Do you agree to have your child's interview tape recorded?		
Do you agree to have your child's interview video recorded?		
At the end of the study the recordings will be kept in a locked office when not in use. Do you agree for this to happen?		
Do you agree for you child/ren to participate in this study?		

Comment or Concerns During the Study

If you have any comments or concerns you should discuss these with the Principal Researcher (). If you wish to go further and complain about any aspect of the way you have been approached or treated during the course of the study, you should email the Head of The Graduate School < >, North Cloisters, Wilkinds Building, UCL, Gower Street, London WC1E 6BT who will take the complaint forward as necessary.

Signed:..... Date:.....

Full Name in Capitals:

Signature of Witness:..... Date:.....

Full Name in Capitals:

Appendix 3 – Information Sheet For Adolescents



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

Howard Steele, PhD
Senior Lecturer in Psychology

London Parent-Child Project University College London & The Anna Freud Centre Information Sheet for Adolescents

Principal Researcher: Howard Steele
Researchers: Emma Goodman

Your participation in this study is helping us to understand something of the complex ways in which relationships and well-being change and remain the same over time.

In our interview we will be asking you how you get along with your friends, parents and siblings. We will also be talking about how things are going at school, what hobbies and interests you have and how you see yourself. We have some questionnaires for you to fill in on paper. These will also help us build up a picture of how things are going for you in general and in your relationships with your family. Please take time to read through the instructions for each of the sections. Please ask at any point if you are unsure about any words, or about how to fill something in.

We will be tape recording and videoing the interview. We record the interviews because we need to study what you have said very carefully. If you have any questions please ask us. When the study comes to an end the recordings will be studied exclusively within the small research team, in accord with the Data Protection Act, not made available to others and kept in a locked office when not in use.

It is really important that you know that all your answers to all the questions in the interviews and questionnaires are confidential, meaning that we won't share them with anyone else, including you family members, friends or any other. In the future we will report the collective findings of the study, however please remember that no-one will know who you are the only thing to identify you in our data set will be this number, **Participant's identification number:**

We think that the interview and questionnaires will take between 2-3 hours to complete. We will be paying you £5 an hour for your time.

Please ask the researcher if you have any questions. If you have any further queries please do not hesitate to contact us on (tel: _____).

This form will be given to you prior to you taking part in the study and is yours to keep. You will also be given a copy of the consent form to keep for yourself.

At the end of the study, the research team will contact you to see if you have any questions regarding the project or your participation in it.

You do not have to take part in this study if you do not want to. You do not have to answer any questions if you do not wish to. You can withdraw from this study at any point without any negative consequences.

Thank you very much for you help, your participation is very much appreciated.

This information sheet have been approved by University College London's Committee on the Ethics of Non-NHS Human Research and all researchers have undergone satisfactory criminal records checks.

Appendix 4 – Information Sheet For Parents

Sub-Department of Clinical Health Psychology

UNIVERSITY COLLEGE LONDON

GOWER STREET LONDON WC1E 6BT



Howard Steele, PhD
Senior Lecturer in Psychology

London Parent-Child Project
University College London & The Anna Freud Centre
Information Sheet for Parents

Principal Researcher: Howard Steele
Researchers: Emma Goodman

Your families participation in this study is helping us to understand something of the complex ways in which relationships and well-being change and remain the same over time.

We will be asking your children how they get along with their friends, parents and siblings. We will also be talking about how things are going at school, what hobbies and interests they have and how they see themselves. We have some questionnaires for both you and them to fill in on paper. These will also help us build up a picture of how things are going for them in general and in the relationships within the family. Please take time to read through the instructions for each of the sections. Please ask at any point if you are unsure about any words, or about how to fill something in.

We will be tape-recording and video-filming the interviews. We record the interviews because we need to study what is said very carefully. If you have any questions please ask us. When the study comes to an end the recordings will be studied exclusively within the small research team, in accord with the Data Protection Act, not made available to others, and kept in a locked office when not in use.

It is really important that you know that all the answers to all the questions in the interviews and questionnaires are confidential, meaning that we won't share them with anyone else, including family members, friends or any other. In the future we will report the collective findings of the study, however please remember that no-one will know who your family are the only thing to identify you in our data set will be this number, Participant's identification number:

We think that the interview and questionnaires will take between 2-3 hours to complete for each child. We will be paying your children £5 an hour for their time.

Please ask the researcher if you have any questions. If you have any further queries please do not hesitate to contact us on (tel: _____).

This form will be given to you prior to you taking part in the study and is yours to keep. You will also be given a copy of the consent form to keep for yourself.

At the end of the study, the research team will contact you to see if you have any questions regarding the project or your participation in it.

You and your family do not have to take part in this study if you do not want them to. You and your family do not have to answer any questions if you do not wish to. You and your family can withdraw from this study at any point without any negative consequences.

Thank you very much for you help, your participation is very much appreciated.
This information sheet has been approved by University College London's Committee on the Ethics of Non-NHS Human Research and all researchers have undergone satisfactory criminal records checks.

Appendix 5 – Sibling Relationship Questions from the Friends and Family

Interview

Now I'd like to ask you a bit about your relationship with [your brother / your sister].

What's it like you and X are together?
Can you give me an example?

What sort of things do you do together?
Can you tell me about a time?

Do you talk to X about things that are important or things that upset you?
Can you tell me about a time?

Does he/she come to you to talk or for help?
Can you tell me about a time?

What do you like *best* about X?
Can you tell me about a time when they were like that?

What do you like *least* about X?
Can you tell me about a time when they were like that?



Appendix 6

The Graduate School
University College London
Gower Street London WC1E 6BT

Head of the Graduate School

July 2004

Dr Howard Steele
Senior Lecturer
Sub-Department of Clinical Health Psychology
UCL
Gower Street
London
WC1E 6BT

Dear Dr Steele

Re: Notification of Ethical Approval

Project ID: 0044/002: Attachment, sibling relationships and well-being in adolescence

The above research has been given ethical approval following review by the UCL Committee for the Ethics of Non-NHS Human Research for a period of 12 months from the commencement of the project (July 2004) subject to the following conditions:

It was agreed at the meeting that the speech samples on the Speech Group website should be password protected in the first instance as it would be easier to obtain consent and would ensure that only serious researchers and clinicians would be able to access the samples. However, it was agreed that if this posed a major barrier to research then the Chair should be contacted and a decision made on whether removing the password protection would be in the best interests of all concerned.

It is a requirement of the Committee that research projects which have received ethical approval are monitored annually. Therefore, you must complete and return our 'Annual Continuing Review Approval Form' PRIOR to the beginning of **July 2005**. If your project has ceased or was never initiated, it is still important that you complete the form so that we can ensure that our records are updated accordingly.

You must seek Chair's approval for proposed amendments to the research for which this approval has been given. Ethical approval is specific to this project and must not be treated as applicable to research of a similar nature. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing the 'Amendment Approval Request Form'.

The forms identified above can be accessed by logging on to the ethics website homepage: <http://www.ucl.ac.uk/gradschool/ethics/> and clicking on the button marked 'Key Responsibilities of the Researcher Following Approval'.

4. It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. Both non-serious and serious adverse events must be reported.

Reporting Non-Serious Adverse Events.

For non-serious adverse events you will need to inform _____, Ethics Committee Administrator (_____), within ten days of an adverse incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Chair or Vice-Chair of the Ethics Committee will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

Reporting Serious Adverse Events

The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator immediately the incident occurs. Where the adverse incident is unexpected and serious, the Chair or Vice-Chair will decide whether the study should be terminated pending the opinion of an independent expert. The adverse event will be considered at the next Committee meeting and a decision will be made on the need to change the information leaflet and/or study protocol.

5. On completion of the research you must submit a brief report (maximum of two sides of A4) of your findings to the Committee. Please comment in particular on any ethical issues you might wish to draw to the attention of the Committee. We are particularly interested in comments that may help to inform the ethics of future similar research.

Yours sincerely

Chair of the UCL Committee for the Ethics of Non-NHS Human Research

Cc: Anna Freud Centre & Sub-Department of Clinical Health Psychology