

Young Adults' Perceptions of Parental Differential Treatment:
Measurement and Relations to Psychological Adjustment,
Attachment Style, and Close Relationships

by

Laura Clare Young
M.Sc., University of Victoria, 2006
B.A., Carleton University, 2004

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in the Department of Psychology

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ABSTRACT

The present study evaluated a newly developed self-report questionnaire assessing young adults' perceptions of their parents' current differential treatment of them and their siblings. This study also explored the influence of young adults' perceptions of parental differential treatment (PDT) on their general adjustment, sibling relationship quality, and romantic relationship adjustment. Attachment style was hypothesized to mediate the relations between PDT and these psychosocial outcomes in young adulthood. Participants included 275 university students and non-student community participants aged 18 to 25 years. Participants completed multiple-choice questionnaires assessing the variables of interest. The factor structure of the new measure of perceptions of PDT was confirmed by results of confirmatory factor analysis using structural equation modelling, and this new measure showed good internal consistency and good convergent validity when compared to another widely used self-report measure of PDT. Young adults' perceptions of higher overall levels of PDT, regardless of which sibling was favoured, and their perceptions of being treated less positively than their siblings were associated with poorer general and romantic relationship adjustment, more insecure attachment style, and poorer

quality sibling relationships. A control variable, social desirability, was found to be related to self-reports of lower levels of perceived PDT, more secure attachment style, more positive parent-child and sibling relationships, and better general and romantic relationship adjustment. Results of path analyses showed that attachment style partially mediated the relations between maternal and paternal PDT and sibling relationship quality. Attachment style fully mediated the relations between maternal and paternal PDT and adjustment, and between maternal PDT and romantic relationship adjustment. PDT was related to sibling relationship quality even after accounting for the influence of overall parent-child relationship quality and perceptions of unfairness of PDT. The present study's strengths and limitations and the implications of the current findings for clinical practice and future research are discussed.

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Acknowledgments

I would like to thank the following individuals for their assistance in the preparation of this dissertation: Dr. Marion Ehrenberg, Dr. Marie Hoskins, Dr. Ulrich Mueller, Dr. Erica Woodin, Dr. Stuart MacDonald, and the young adults who participated in this study. Your help is greatly appreciated.

Overview

What happens when parents treat their two or more children somewhat differently? How do these differences in parental treatment affect children? Parental differential treatment (PDT) refers to the differences between how parents treat one sibling and how they treat another sibling in the same family. It is well-established that PDT influences children's well-being and the quality of their relationships. As expected, children who are treated more negatively by their parents compared to their siblings, for example receiving less parental warmth and affection, tend to show poorer outcomes. However, there is also some evidence that regardless of which sibling is treated more poorly, all siblings in families characterized by high degrees of PDT experience poorer well-being and poorer relationship quality.

Although the links between PDT and sibling relationship quality and adjustment have been well-studied, the mechanisms explaining these links are less well understood. Most research on the effects of PDT has been conducted with children and adolescents; however, there is some evidence that PDT continues to be an important family dynamic as children develop into young adulthood. Hence, the present study explored the importance of perceptions of PDT among young adult children, and examined the influence of PDT on sibling relationship quality, romantic relationship adjustment, and overall well-being. Attachment style, or the typical manner in which an individual relates to others in close relationships, was examined as a potential mechanism explaining the relations between PDT and the aforementioned outcomes in young adulthood.

In this introductory section, the effects of PDT upon sibling relationship quality, adjustment, and romantic relationship quality are reviewed. The importance of taking

into account the context in which PDT is occurring, specifically the quality of the overall parent-child relationship, is discussed. The role of children's perceptions of the fairness of PDT is described, because perceptions whether PDT is justified or unjustified appear to influence how PDT affects children. Related to perceived fairness of PDT, the effects of PDT in families in which one sibling has a disability are considered. The measurement of PDT using self-report questionnaires is briefly discussed, and a new self-report measure of young adults' perceptions of PDT that has been developed for this study is described. Next, attachment theory is briefly presented, and the major adult attachment styles are identified. Research examining the influence of attachment style on romantic relationship quality, general adjustment, and sibling relationship quality is reviewed. Finally, the introduction concludes with an exploration of attachment style as a potential mediator in the relations among PDT and outcomes in young adulthood.

Parental Differential Treatment

This section reviews the existing research exploring PDT's influence on the quality of sibling relationships and each sibling's psychosocial adjustment, as well as the influence of PDT in shaping emergent romantic relationships during later adolescence and young adulthood.

PDT and Sibling Relationship Quality

The more prominent PDT is in a family, the greater the risk to the quality of sibling relationships (Brody, 1998; Dunn & Stocker, 1989; Hart, 2010; Sutor, Sechrist, Plikuhn, Pardo, & Pillemer, 2008; Volling, 2003), especially for families under stress (Dunn & Stocker, 1989). Despite this finding, it appears that PDT may be quite normative during particular periods of children's development, as parents respond

sensitively to differences in age, size, strength, and maturity among their children (Brody, 1998; Volling, 2003). In addition, children's perceptions of PDT may change with age, and it is when PDT is considered to be unjustified by children that these perceptions may be especially detrimental to sibling relationship quality (Volling, 2003). If children interpret PDT to mean that their parents care about them less than their siblings, this is likely to harm the sibling relationship, while children who feel secure in responsive, nurturing parent-child relationships are less likely to have these damaging perceptions (Brody, 1998).

Early childhood. The ways in which PDT influences sibling relationship quality have been most frequently studied in childhood. In studies of siblings in early childhood (ages 1-6 years), differences in parents' enjoyment and favouritism of their children have been found to be related to poorer quality sibling relationships characterized by less cooperative play, more hostility, less positive involvement (Volling, 1997), and fewer prosocial interactions (Volling & Belsky, 1992). Unlike differential enjoyment or favouritism, parents' differential discipline of their children (i.e., older siblings are disciplined more) has sometimes been associated with positive consequences for the sibling relationship in early childhood, including less sibling conflict (Volling, 1997; Volling & Elins, 1998) and more positive involvement between siblings (Volling & Elins, 1998). This may be due to the developmental capacities of siblings in early childhood, in that it may be developmentally appropriate for parents to discipline older, more capable, independent, active, and mature preschoolers more than their younger toddler siblings (Volling & Elins, 1998). A few scattered findings suggest that receiving more parental control than one's sibling is related to more conflict in sibling relationships

(Volling & Belsky, 1992; Volling & Elins, 1998); however, these findings are inconsistent and seem to depend on whether this perception of control is related to the mother's or the father's actions.

Middle childhood. The current research findings regarding PDT suggest mainly negative consequences for sibling relationship quality in middle childhood (ages 5-10 years), including more conflict, more control, more competitiveness, less cooperation, less positivity (Stocker, Dunn, & Plomin, 1989), more negativity (Bryant & Crockenberg, 1980; Stocker et al., 1989), fewer verbalizations, fewer prosocial interactions, and generally fewer interactions between siblings (Brody, Stoneman, & Burke, 1987). These relations hold both concurrently and longitudinally, with earlier PDT in middle childhood leading to more negative sibling relationship quality later, up until early adolescence (Brody, Stoneman, & McCoy, 1992; 1994a; 1994b; Brody, Stoneman, McCoy, & Forehand, 1992). Differential treatment in the domains of responsiveness and affection may be most detrimental (Stocker et al., 1989). Although a few isolated findings suggest that differential management of (Brody et al., 1987) and responsiveness to (Brody, Stoneman, & McCoy, 1992) siblings can lead to positive consequences, overall, equal treatment by parents seems to have the most positive effect on sibling relationship quality during middle childhood (Brody et al., 1994a; 1994b; McHale, Crouter, McGuire, & Updegraff, 1995). PDT predicts sibling relationship quality in middle childhood even after controlling for children's temperaments (Brody et al., 1987).

Younger siblings appear to be more reactive to PDT during this developmental period (Brody et al., 1994b; McHale et al., 1995), perhaps because as older siblings approach adolescence, their focus shifts from family to peer relationships, such that

family relationships are no longer the only major influence on their adjustment and interpersonal relationships. In addition, older siblings who are approaching adolescence are likely to enjoy more freedom from parental control. Older children's more advanced cognitive skills may also allow them to understand PDT as legitimate, increasing their acceptance of it (McHale et al., 1995).

Adolescence. Less research has been conducted regarding the impact of PDT on adolescent siblings than on younger children. Sibling relationships seem to become more negative and less positive over time from middle childhood to early adolescence (Brody et al., 1994a; 1994b). Social comparison and competition between siblings may increase as siblings grow older and their skills and interests become more similar (Brody et al., 1994a), possibly leading to more jealousy and resentment and poorer quality sibling relations.

PDT is typically related to more negative sibling relationship dynamics in adolescence, and, regardless of which sibling is favoured, both siblings tend to experience negative relationship outcomes (Noller, 2005; Tseung & Schott, 2004). Parents' differential warmth and affection seems to be particularly detrimental (Kowal & Kramer, 1997; Kowal, Krull, & Kramer, 2006; McHale, Updegraff, Jackson-Newsom, Tucker, & Crouter, 2000). Some research has found that PDT is a less important contributor to sibling relationship quality for older adolescents, perhaps because peer and romantic relationships are becoming more salient than family relationships (Tseung & Schott, 2004; Updegraff, Thayer, Whiteman, Denning, & McHale, 2005). While older adolescents may be less reactive to PDT, younger adolescents (ages 12-15) may be more reactive to PDT than children in middle childhood, perhaps due to their overall lower

self-esteem or their use of their more sophisticated cognitive abilities to monitor PDT with increased vigilance (McHale et al., 2000). Despite the negative effects of PDT, some siblings may actually foster positive sibling relationships by differentiating themselves in their relationships with their parents in order to avoid competition for limited parental resources (Feinberg, McHale, Crouter, & Cumsille, 2003). In addition, when siblings agree about the extent and direction of PDT, their relationships tend to be more positive (Kowal et al., 2006).

Adulthood. Little research has explored the relation between PDT and sibling relationship quality in adulthood. However, some researchers (e.g., Boll, Ferring, & Filipp, 2003) have argued that PDT continues to be an important issue beyond childhood, as adult children typically continue to have regular contact with their parents. In addition, adults may continue to compare themselves to their siblings throughout their lives, particularly in the domain of relationships with parents (Boll et al., 2003). Different aspects of PDT (e.g., recognition, nurturance, demands for responsibility and caregiving) may be relevant for adult children (e.g., Van Volkom, 2006), but it still appears that equal treatment of siblings by parents is most often associated with the highest quality sibling relationships.

Only two studies of PDT and sibling relationship quality in young adulthood were found (Hoffman, Kiecolt, & Edwards, 2005; Rauer & Volling, 2007). Increased levels of PDT, particularly in the domain of affection, were associated with more jealousy and conflict between siblings. Of note, in both of these studies, young adults were asked to recall PDT that occurred in childhood rather than to reflect on differences in the current relationships they and their siblings had with their parents.

An additional three studies explored PDT and sibling relationship quality in middle adulthood (Boll et al., 2003; Boll, Ferring, & Filipp, 2005; Boll, Michels, Ferring, & Filipp, 2010). Boll and his colleagues assessed adults' (aged 40-54 years) perceptions of current PDT in domains specific to the relationship between adult children and their aging parents: parental recognition, nurturance, and demands for filial responsibility. Sibling relationships were characterized by more attachment, closeness, and support, as well as less conflict and dislike, when adults perceived that they and their siblings were treated equally. If the one sibling was perceived to be favoured or disfavoured, sibling relationship quality suffered. Longitudinally, patterns of perceived PDT in the domains of parental recognition and nurturance were highly stable over time, while perceived PDT in the domain of demands for filial responsibility were more variable and context dependent (Boll et al., 2010).

PDT and Adjustment

In addition to demonstrating a strong relationship to sibling relationship quality, PDT has been widely studied as a predictor of children and adolescents' adjustment and behaviour. Three domains of PDT have commonly been found to predict adjustment: negativity, warmth, and control. In general, it appears that receiving more positive parental treatment (i.e., warmth, affection, support) and less negative parental treatment (i.e., conflict, hostility, harsh discipline) than one's sibling leads to better adjustment, while receiving less positive and more negative parental treatment than one's sibling leads to poorer adjustment. Findings related to differential control are more inconsistent. Receiving more negative parental control, such as coercive control, than one's sibling

may promote poor adjustment, while receiving more positive parental control than one's sibling, such as more consistent monitoring, may promote positive adjustment.

It has also been found that all siblings are better adjusted in families characterized by equal parental treatment than in families characterized by high levels of PDT (Boyle, Jenkins, Georgiades, Cairney, Duku, & Racine, 2004; Solmeyer, Killoren, McHale, & Updegraff, 2011; Sutor et al., 2008). Increased PDT appears to predict poorer sibling adjustment both concurrently and over time, as indicated by the findings of several longitudinal studies (Burt, McGue, Iacono, & Krueger, 2006; Conger & Conger, 1994; McGuire, Dunn, & Plomin, 1995; Meunier, Roskam, Stievenart, van de Moortele, Browne, & Kumar, 2011; Richmond, Stocker, & Rienks, 2005; Scholte, Engels, de Kemp, Harakeh, & Overbeek, 2007; Shebloski, Conger, & Widaman, 2005; Tarullo, Ronsaville, Brown, & Radke-Yarrow, 1995). However, the effects of PDT upon siblings' adjustment over time may be circular; that is, earlier PDT may lead to later sibling differences in adjustment, which may lead, in turn, to later PDT in reaction to siblings' varying behavioural adjustment patterns (e.g., Meunier et al., 2011).

Conflict and negativity. Differences in the levels of parental conflict and negative behaviours directed at each sibling appear to be associated with siblings' adjustment, including internalizing and externalizing problems (Boyle et al., 2004; Bryant & Crockenberg, 1980; Burt et al., 2006; Deater-Deckard, Pike, Petrill, Cutting, Hughes, & O'Connor, 2001; Feinberg & Hetherington, 2001; McGuire et al., 1995; Stocker, 1995; Tarullo et al., 1995), negative emotionality (Brody, Stoneman, & McCoy, 1992b), delinquency (Conger & Conger, 1994), general well-being (McHale, Crouter, McGuire, & Updegraff, 1995), and social competence (Anderson, Hetherington, Reiss, & Howe,

1994; Bryant & Crockenberg, 1980; Deater-Deckard et al., 2001; Feinberg & Hetherington, 2001). In general, the more negatively treated sibling tends to exhibit poorer adjustment. Negative parental behaviours may include parent-child conflict (Anderson et al., 1994; Burt et al., 2006; McHale et al., 1995; Stocker, 1995), poor quality parent-child relationships (Stocker, 1995), negativity (Anderson et al., 1994; Boyle et al., 2004; Brody et al., 1992b; Bryant & Crockenberg, 1980; Deater-Deckard et al., 2001; Feinberg & Hetherington, 2001; McHale et al., 1995), criticism (Tarullo et al., 1995), discipline (Deater-Deckard et al., 2001; McGuire et al., 1995), hostility (Conger & Conger, 1994), and negative control (McGuire et al., 1995).

Warmth and positivity. PDT in the domains of warmth and positivity also appears to be related to siblings' adjustment, including internalizing and externalizing problems (Bryant & Crockenberg, 1980; Deater-Deckard et al., 2001; Dunn, Stocker, & Plomin, 1990; McGuire et al., 1995; Meunier et al., 2011; Richmond & Stocker, 2003; Solmeyer et al., 2011; Stocker, 1993, 1995; Tamrouti-Makkink, Dubas, Gerris, & van Aken, 2004; Tarullo et al., 1995), attachment style (Sheehan & Noller, 2002), anxiety (Sheehan & Noller, 2002), emotional distress (Daniels, Dunn, Furstenberg, & Plomin, 1985), delinquency (Daniels et al., 1985; McHale, Updegraff, Shanahan, Crouter, & Killoren, 2005; Scholte et al., 2007), disobedience (Daniels et al., 1985), self-worth (Daniels et al., 1985; McHale et al., 1995; Sheehan & Noller, 2002), and social competence (Anderson et al., 1994; Bryant & Crockenberg, 1980; Deater-Deckard et al., 2001). Most frequently, siblings who receive more parental warmth and positivity exhibit better adjustment than siblings who receive less (Young & Ehrenberg, 2007). Parental positivity may include warmth (Anderson et al., 1994; McGuire et al., 1995; McHale et al., 2005; Tamrouti-

Makkink et al., 2004), support (Anderson et al., 1994), positive behaviour (Bryant & Crockenberg, 1980; Deater-Deckard et al., 2001; Stocker, 1993), responsiveness (Bryant & Crockenberg, 1980), parental closeness and involvement (Daniels et al., 1985; Stocker, 1995; Tarullo et al, 1995), affection (Dunn et al., 1990; McGuire et al., 1995; McHale et al., 1995; Sheehan & Noller, 2002; Stocker, 1993), attention (McGuire et al., 1995), or favouring one child over another (Richmond & Stocker, 2003; Stocker, 1995).

Control and monitoring. Differences between siblings with regard to amount of parental control or monitoring appear to influence siblings' adjustment and behaviour, including internalizing and externalizing problems (Dunn et al., 1990; Stocker, 1993), anxiety (Sheehan & Noller, 2002), negative emotionality (Brody et al., 1992b), self-esteem (Sheehan & Noller, 2002), and social competence (Anderson et al., 1994; Deater-Deckard et al., 2001). Siblings who experience more negative parental control, such as coercive control (e.g., Brody et al., 1992b; Dunn et al., 1990; Sheehan & Noller, 2002; Stocker, 1993), than their co-siblings tend to be more poorly adjusted. Conversely, siblings who experience more positive parental control, such as monitoring (Anderson et al., 1994) or praise (Deater-Deckard et al., 2001), than their co-siblings tend to be better adjusted. However, as previously mentioned, findings in this domain of PDT are more variable than in the domains of warmth and negativity, and some studies report inconsistent findings (e.g., Sheehan & Noller, 2002; Tamrouti-Makkink et al., 2004). This may be due to difficulty separating positive from negative forms of parental control when using the most common self-report measure of PDT, the Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985).

PDT vs. equal treatment. Although many studies report that more favourable parental treatment is related to better adjustment and poorer treatment is related to poorer adjustment, some researchers propose that higher levels of parental differential treatment within a family lead to poorer adjustment for all siblings (Boyle et al., 2004; McHale et al., 1995; Solmeyer et al., 2011). This effect may occur because more favourably treated siblings observe their co-siblings being treated more poorly and feel anxious that they will be next to receive more negative treatment. Alternatively, more favourably treated siblings may view the poorer parental treatment of their co-siblings as unjust and resent their parents for engaging in high levels of differential treatment. More favourably treated siblings may also feel guilty that their siblings are being treated more poorly, and may feel empathy for their siblings and concern for their well-being.

Context of PDT: Parent-child relationship quality. Differential parental treatment appears to contribute to child and adolescent adjustment over and above the effects of parenting directed at a particular child or adolescent (Feinberg & Hetherington, 2001; Stocker, 1995; Tamrouiti-Makkink et al., 2004). This finding suggests that if a child receives relatively positive parental treatment, his adjustment may be somewhat poorer than expected if his sibling receives even better parental treatment (Feinberg, Neiderhiser, Simmens, Reiss, & Hetherington, 2000; Reiss, Hetherington, Plomin, Howe, Simmens, Henderson et al., 1995). Additionally, if a child receives relatively negative parental treatment, her adjustment may be somewhat better than expected if her sibling receives even poorer parental treatment. The amount of variance explained by differential parenting appears to be generally quite modest compared to the amount of

variance explained by the overall quality of the parent-child relationship (Feinberg & Hetherington, 2001).

Romantic Relationship Quality

From the research reviewed above, it is clear that PDT has been most frequently studied as a potential predictor of siblings' adjustment and sibling relationship quality. However, PDT may also have more widespread effects on the quality of adult siblings' other interpersonal relationships, including romantic relationships. These effects may occur through the impact of PDT on attachment style, which will be discussed in a later section.

With respect to romantic relationship quality, only one study was found examining the relation between recollections of PDT in childhood and romantic relationship quality in young adulthood (Rauer & Volling, 2007). Perceptions of receiving less maternal and paternal differential affection (but not parental differential control) than their siblings as measured by the SIDE were related to young adults' feelings of jealousy toward their siblings, which were associated with lower self-esteem and insecure (preoccupied) attachment style. Lower self-esteem and a preoccupied attachment style, in turn, were linked to greater romantic relationship distress characterized by more conflict, jealousy, and ambivalence. Participants who perceived that they received more affection from their parents than their siblings reported higher self-esteem, but also a greater sense that their siblings were jealous of them. These perceptions of their siblings' jealousy were related to insecure attachment style, particularly dismissing and fearful styles. These two insecure attachment styles were in turn related to poorer quality romantic relationships, characterized by low conflict but

high ambivalence (for those endorsing a dismissing attachment style) or by high conflict and jealousy but low levels of ambivalence (for those endorsing a fearful attachment style). Parental differential control was found to have a direct relationship with romantic relationship distress that was not mediated by sibling jealousy or attachment style. Differential paternal control was associated with increased conflict and jealousy in romantic relationships (Rauer & Volling, 2007).

Fairness of PDT

As has been shown in the preceding sections, the extent to which PDT occurs in families, and which sibling is favoured or disfavoured, influences the quality of children's relationships with their siblings, their individual adjustment, and their experience of romantic relationships later in life. Another important factor influencing the impact of PDT on children is whether PDT is perceived to be fair or unfair. Children's perceptions of the fairness of PDT have been found to moderate the relations between PDT and sibling relationship quality and between PDT and adjustment.

Sibling Relationship Quality

Siblings' perceptions of whether PDT is justified influence the relation between PDT and sibling relationship quality (Boll et al., 2005; Kowal & Kramer, 1997; Kowal et al., 2006; McHale et al., 2000; McHale, Whiteman, Kim, & Crouter, 2007). In general, PDT that is perceived to be unfair has the most negative impact on sibling relationship quality. Conversely, when children experience PDT as justified, they tend to view their sibling relationships more positively (e.g., Kowal & Kramer, 1997; McHale et al., 2007). This result has been found in middle childhood (McHale et al., 2000), adolescence

(Kowal & Kramer, 1997; Kowal et al., 2006; McHale et al., 2007), and middle adulthood (Boll et al., 2005).

Kowal and Kramer (1997) studied perceptions of the fairness of PDT among sibling pairs in early adolescence. In their study, PDT was judged to be unfair in approximately 25% of instances. In interviews, children suggested that differences between siblings in age, personal characteristics, specific needs, parent-child relationships, or behaviour may justify parents treating their two children differently. PDT that could be explained by siblings' different needs was seen as justified, and was related to increased warmth and closeness and decreased conflict in the sibling relationship. However, high levels of PDT not seen to be explained by differences in age, parent-child relationships, or siblings' attributes or behaviours was associated with less warmth and closeness and more conflict between siblings. It should be noted that these reasons were provided by siblings in early adolescence; it appears likely that there would be developmental differences across the life-span in siblings' perceptions of why differential treatment is fair or unfair. Overall, Kowal and Kramer (1997) concluded that sibling relationship quality between young adolescent siblings increased when siblings perceived their parents' differential treatment to be fair or justified.

Another contributing factor to sibling relationship quality may be whether siblings share the same view of PDT in their individual families. Agreement between adolescent siblings about the magnitude, direction, and fairness of PDT seems to have a positive influence on sibling relationship quality (Kowal et al., 2006), leading to greater warmth and less antagonism and rivalry between siblings. The finding that agreement regarding PDT predicted a positive sibling relationship was strongest for siblings' views of

maternal differential treatment, particularly affection. This was speculated to be because mother-adolescent relationships are more intense than father-adolescent relationships and because expectations of equality and fairness are stronger for parental affection than for parental control (Kowal et al., 2006).

Among pairs of siblings in middle childhood and in early adolescence, siblings' perceptions of the fairness of PDT were more strongly associated with positivity in the sibling relationship than was the amount of PDT occurring (McHale et al., 2000). Perceptions of equal parental treatment and perceptions of being favoured were also related to more positive sibling relationships, although to a lesser extent than high levels of fairness. Parents' differential warmth was more strongly linked to sibling relationship quality than were differences in time spent with each sibling and differences in chore allocation to each sibling.

Perceptions of PDT as justified continue to be important predictors of sibling relationship quality in middle adulthood (Boll et al., 2005). Boll and his colleagues found that justice evaluations (i.e., perceptions of the fairness of PDT) partially mediated the relation between perceived PDT and sibling relationship quality among adults. Sibling relationships were rated most positively when both siblings were perceived to be treated equally, and when PDT was seen as justified. Being significantly favoured or disfavoured compared to one's sibling or perceiving PDT as unjustified was associated with poorer quality sibling relationships. Interestingly, respondents viewed PDT as most fair when they perceived themselves to be slightly favoured over their sibling, and tended to view PDT as unfair if they were disfavoured or extremely favoured (Boll et al., 2005).

Adjustment

In addition to influencing the impact of PDT upon sibling relationship quality, children's perceptions of the fairness of PDT also strongly influence the relation between PDT and children's adjustment (Kowal & Kramer, 1997; Kowal, Kramer, Krull, & Crick, 2002; Kowal, Krull, & Kramer, 2004; McHale et al., 2000). When children believe that the differences between the parental treatment they receive and the parental treatment their sibling receives are justified, PDT appears to have somewhat positive consequences for children's socioemotional adjustment (Kowal et al., 2002; McHale et al., 2000). However, when children view PDT as unfair, this treatment may be related to poorer child adjustment (Kowal et al., 2002; McHale et al., 2000). Although perceived fairness of PDT appears to partially moderate the association between PDT and child adjustment, some direct relations between PDT and child adjustment remain (Kowal et al., 2002). McHale and her colleagues (2000) note that simply perceiving PDT as fair does not ensure that siblings will experience positive outcomes; siblings who receive disfavoured parental treatment but perceive this treatment as very fair may be at risk for low self-esteem.

PDT in Exceptional Families

Related to the issue of the perceived fairness of PDT, some research has considered the occurrence and impact of PDT in exceptional families, particularly those families in which one sibling has a physical health problem (Quittner & Opiari, 1994) or a developmental or intellectual disability (McHale & Pawletko, 1992; Wolf, Fisman, Ellison, & Freeman, 1998). The goals of this research have been to explore if PDT occurs to a greater extent in families in which one sibling has special needs, if PDT is

seen as more justified in this context, and if PDT influences sibling relationship quality differently in these families.

It appears that higher levels of PDT are present in these exceptional families. Quittner and Oipari (1994) studied PDT in families with two children in early childhood in which the younger sibling had cystic fibrosis (CF). Compared to mothers with two healthy children, mothers with a younger child with CF spent more time with their younger children than with their older, healthy children, particularly in play and at mealtime. In addition, these mothers rated the time they spent with their older, healthy children more negatively than did mothers with two healthy children. It may be that mothers feel somewhat guilty if they are spending their time with the healthy child, perhaps believing that the chronically ill child needs more time and attention. Quittner and Oipari (1994) did not examine sibling relationship quality in this study, but they speculated that the higher levels of PDT found in families with a child with CF might have deleterious consequences for the healthy sibling.

A recent review of the experiences of siblings of children with pervasive developmental disorder or mental retardation (Schuntermann, 2007) considered the importance of perceptions of PDT to the quality of the sibling relationship. Schuntermann (2007) discussed the occurrence of PDT in these families, in which non-disabled children may be expected to perform a more parent-like role, including caretaking of the disabled sibling or more involvement in household chores. These different expectations may lead to sibling conflict and less positive sibling interactions. However, this review also highlights the importance of children's understanding of PDT. PDT may be seen as justified in families with one disabled sibling, and therefore it may

not be related to negative sibling relationships. In fact, in some research reviewed, sibling relationships were viewed more positively in families with one disabled sibling than in families with two non-disabled siblings (Schuntermann, 2007).

Wolf and her colleagues (1998) found that PDT was not related to low warmth in the sibling relationship among siblings of children with pervasive developmental disorder, Down's syndrome, or children without a developmental disability. However, increased PDT was related to poorer adjustment for siblings in ways that varied depending on family context. These findings illustrate the complex effects of PDT in families with a child with special needs.

The influence of family context on the complex relation between PDT and sibling relationship quality was also explored by McHale and Pawletko (1992) in their study of families with or without a child with mental retardation. Mothers reported greater levels of PDT in families with one disabled sibling. These higher levels of PDT appeared to arise not because non-disabled siblings were neglected compared to their counterparts in the control families, but because disabled siblings were treated so differently from their non-disabled counterparts in the control families. Somewhat complicated and seemingly contradictory relations were found between PDT and sibling relationship quality and between PDT and siblings' adjustment, and these relations differed between the two family types. For example, for older siblings, experiencing more involvement in conversations, more discipline involving the assertion of power, and more positive love was associated with positive sibling relationship quality for those with disabled younger siblings and with negative sibling relationship quality for those with non-disabled younger siblings (McHale & Pawletko, 1992). From these findings, it appears that

children's interpretations and understanding of PDT and perhaps their views of its fairness differ depending on their younger siblings' needs and characteristics. These interpretations, which may lead to various emotions including guilt, resentment, happiness, or positive self-worth, may be more important determinants of sibling relationship quality and personal adjustment than the magnitude of PDT occurring.

Measurement of PDT

In the empirical studies exploring PDT's influence on sibling relationship quality, adjustment, and romantic relationship quality reviewed above, the most commonly used technique for measuring PDT is the self-report questionnaire. The most frequently employed self-report questionnaire assessing PDT is the Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985), which contains two subscales directly assessing mothers' and fathers' differential treatment of two siblings in the domains of affection and control (e.g., Rauer & Volling, 2007; Richmond, Stocker, & Rienks, 2005; Tseung & Schott, 2004). This instrument was designed to be used with children.

For each item on the SIDE, respondents are asked to indicate which sibling typically receives more of a specific parental behaviour. A potential disadvantage of the "Differential Control" subscale on the SIDE is that it appears to assess two types of control: positive (i.e., monitoring of children's activities) and negative (i.e., coercion). Therefore, this subscale may not be consistently associated with outcomes of interest. Past research has found that receiving more negative parental control than one's sibling, such as coercion (Brody et al., 1992b; Dunn et al., 1990; Sheehan & Noller, 2002; Stocker, 1993), is associated with poorer adjustment, while receiving more positive

parental control than one's sibling, such as monitoring (Anderson et al., 1994), is associated with more positive adjustment.

Four items on the SIDE are designed to assess parents' differential control. One item ("Our mother/father blamed us for what another family member did") clearly assesses a negative, coercive form of control. The other three items ("Our mother/father was strict with us," "Our mother/father punished us for our misbehaviour," and "Our mother/father disciplined us (for example, punished or scolded)"), however, could be interpreted as reflecting either positive forms of parental control (consistent, firm discipline; monitoring) or negative forms of parental control (excessive, harsh discipline). For this reason, the direction of the differential parental control construct, as assessed by the SIDE, may not show consistently positive or negative relations with psychological adjustment or relationship quality.

Due to the aforementioned weaknesses of the SIDE and the lack of a measure of PDT specifically targeting parent-young adult child relationships, a new measure of PDT was developed for the present study. This new measure was designed to provide a more thorough assessment of PDT, particularly with respect to clarifying the role of parental differential control, and to assess domains of PDT particularly salient to the relationships young adult children have with their parents. This new measure will be described in detail in the Method section.

Attachment

In this section, a brief introduction to attachment theory and attachment style is presented. Next, the influence of attachment style on sibling relationship quality, adjustment, and romantic relationship quality is described. Finally, the potential role of

attachment style as a mediator in the relations between PDT and outcomes in young adulthood (i.e., sibling relationship quality, adjustment, and romantic relationship quality) is discussed.

Attachment Theory

John Bowlby (1969/1982), the originator of attachment theory, conceptualized the attachment system as a behavioural system, the purpose of which is to allow an infant or child to achieve the goals of being protected from danger and having his needs met by maintaining proximity to caring, protective others (e.g., primary caregivers). Certain situations, particularly environmental events that threaten an individual's survival, tend to activate the attachment system (e.g., presence of a stranger), while other contexts tend to deactivate the attachment system (e.g., receiving adequate soothing from a parent). When the attachment system is activated, the main strategy used by infants and children is to seek proximity to caring others who can provide them with protection and support. Infants may seek proximity by crying or reaching out, while children may do so by expressing their emotions or communicating their needs. Adults may do so either by physically seeking proximity to loving others or by activating mental representations of loving, protective others. The goal of seeking proximity to caregivers, either physically or by activating mental representations, is to feel safe, secure, cared for, and protected (Bowlby, 1969/1982).

There is an important distinction between close loved ones and attachment figures (Ainsworth, 1991), who are people to whom an individual turns when in need of protection or support. Attachment figures serve as targets when an individual needs to seek proximity to a caregiver. They serve as a "safe haven" when an individual needs

support or caring, and as a “secure base” allowing an individual to explore other pursuits in the environment. Their absence, either physical or anticipated, causes an individual “separation distress” (Bowlby, 1969/1982). Another important distinction is between attachment interactions and non-attachment interactions between infants or children and their primary caregivers (Mikulincer & Shaver, 2007a). Attachment interactions occur only when a child is distressed, in need, or perceives himself to be in danger and seeks support, protection, or caring from his caregiver (Weiss, 1998).

The presence of repeated attachment interactions in a long-lasting, stable relationship between infant or child and primary caregiver (or between romantic partners in adulthood) indicates the existence of an “attachment bond” (Bowlby, 1969/1982; 1979). The development of a *secure* attachment bond depends on the consistency, availability, responsiveness, and sensitivity of the attachment figure to the infant’s or child’s needs and wants. A consistently responsive caregiver allows the infant to feel secure and safe, and therefore he is able to explore his environment with confidence. *Insecure* attachment bonds result when the primary caregiver is not consistently available, does not meet the infant’s needs, is unable to soothe the infant when distressed, and does not respond to the infant’s signals for increased proximity (Mikulincer & Shaver, 2007a). Through repeated interactions with attachment figures, children are thought to develop stable, consistent internal working models, or mental representations, of themselves, others, and relationships (Bowlby, 1969/1982). Secure attachment results in positive working models, while insecure attachment results in negative working models. These working models guide the child’s, and later the adult’s, behaviour, thoughts, and emotions in the context of interpersonal relationships (Bowlby, 1979).

Attachment Style

The idiosyncratic pattern of cognitions, emotions, behaviour, needs, and expectations in relationships with others that develops based on an individual's attachment history and his or her associated working models of self, others, and relationships is referred to as *attachment style* (Fraley & Shaver, 2000). Attachment style was first conceptualized by Mary Ainsworth (1967) to describe how infants reacted to being separated from, then reunited with their mothers in several different contexts in a laboratory setting (i.e., the "Strange Situation"). The four classifications of infants' attachment style were secure, avoidant, anxious, and disorganized (Ainsworth, 1967; Main & Solomon, 1990). The first three attachment styles correspond to the secure, avoidant, and anxious attachment styles described below in the section regarding adult attachment style. The disorganized attachment style refers to infants who exhibited unusual, awkward behaviour in separations and reunions from their mothers and who alternated between avoidance and anxiety (Main & Solomon, 1990). Although originally developed in the context of research with infants and children, the concept of attachment style was later applied to adults' mental representations of their attachments to their parents in childhood (e.g., Main, Kaplan, & Cassidy, 1985) and to adults' typical ways of relating to others in romantic relationships (Hazan & Shaver, 1987).

Adult attachment style. Adult attachment style is conceptualized as consisting of two separate dimensions: anxiety and avoidance (Mikulincer & Shaver, 2007a). Anxiety is characterized by an intense desire for closeness, worries about the romantic partner's availability, and concern about one's value to the romantic partner. Avoidance is characterized by discomfort with interpersonal closeness and dependence on a romantic

partner, emotional distance, and a tendency toward excessive self-reliance. Individuals who are high on anxiety and low on avoidance are classified as *anxious*, while individuals who are low on anxiety and high on avoidance are classified as *avoidant*.

Individuals who are low on anxiety and low on avoidance are classified as *securely attached* or *secure*. These individuals typically have a history of feeling secure in their attachment relationships, trust others easily, believe that their partners will be available to them and will value them as partners, feel comfortable being close to others and depending on them, and cope with stressors in adaptive ways (Mikulincer & Shaver, 2007a). The three aforementioned attachment styles (secure, anxious, and dismissing) were originally conceptualized and applied to adults' attachment styles in romantic relationships by Hazan and Shaver (1987).

Adult romantic attachment style was later slightly reconceptualized by Bartholomew and her colleagues (Bartholomew, 1990; Bartholomew & Horowitz, 1991). Bartholomew (1990) proposed that the two attachment dimensions of anxiety and avoidance could also be conceptualized as dimensions of models of self (from positive to negative, related to the anxiety dimension) and models of others (from positive to negative, related to the avoidance dimension). Individuals with positive models of self and others were said to be securely attached. Individuals with negative models of self and positive models of others were considered to be *preoccupied*, corresponding with anxious attachment style.

However, rather than defining only three types of attachment style, Bartholomew and her colleagues identified two different types of avoidant attachment, resulting in four distinct attachment styles. These two types of avoidant attachment were differentiated

based on differences in avoidant individuals' models of others. Individuals with negative models of self and negative models of others are labeled *fearful avoidant*, and this category corresponds with what had previously been simply labeled avoidant attachment (Hazan & Shaver, 1987). Individuals with positive models of self and negative models of others are defined as *dismissing avoidant*, and are characterized by compulsive self-reliance and independence and insistence on being content without close emotional relationships (Bartholomew, 1990).

Critiques of Attachment Theory

It should be noted that feminist critiques of attachment theory (e.g., Birns, 1999; Cleary, 1999; Contratto, 2002; Franzblau, 1999) have criticized the theory for holding mothers mainly or solely responsible for parenting and for promoting attachment security in their children, while minimizing or neglecting the roles of fathers, extended family members, and other caring adults involved in the lives of children. Feminist writers have also criticized attachment theory for failing to examine the social norms and constraints influencing mothers and, in turn, their parenting abilities and resources. In addition, attachment theory has been criticized for downplaying the possibility for change in attachment style following infancy and early childhood. For the purposes of the present study, attachment style is considered to be a complex phenomenon, strongly influenced by early interactions with many attachment figures, including parents, caregivers, and other important individuals involved in children's lives, but also influenced by other relationships occurring throughout the lifespan (e.g., romantic relationships, therapeutic relationships). This conceptualization would appear to reflect more contemporary views of attachment (Etelson, 2007; Grossmann, Grossmann, Kindler, & Zimmermann, 2008).

Sibling Relationship Quality

Relative to the research examining the influence of attachment style on romantic relationship quality and well-being, the link between attachment style and sibling relationship quality has been infrequently studied. However, the few studies that have explored this relation have found that more securely attached siblings tend to have more positive sibling relationships, while more insecurely attached siblings tend to experience more negative sibling relationship quality (Teti & Ablard, 1991; Vandell, Owen, Wilson, & Henderson, 1988; Pinel-Jacquemin, Zaouche-Gaudron, & Troupel-Cremel, 2009; Volling, 2001; Volling & Belsky, 1992).

In a laboratory study of infant and toddler siblings and their mothers, Teti and Ablard (1991) found that when infants and their older siblings were more securely attached, they were more likely to develop nonantagonistic relationships, while the opposite was true for less securely attached siblings. Among these sibling pairs, young infants exhibited attachment behaviours toward their older siblings only when older siblings were securely attached. When their mothers were present, securely attached infants were less likely to direct aggressive behaviour toward their older siblings when mothers played only with the older siblings. When their mothers were absent, securely attached older siblings were more likely to comfort their infant siblings when they showed signs of distress than were insecurely attached older siblings. These findings support the hypothesis that the quality of young children's attachment relationships with their primary caregivers influences the quality of their sibling relationships (Teti & Ablard, 1991).

In a study of infant twins and their mothers, Vandell and her colleagues (1988) found that twins' observed interactions with their co-twins were significantly related to their attachment relationships with their mothers. Beginning at 6 months of age, twin pairs including at least one twin who was later classified as insecurely attached interacted less with each other than did twin pairs comprising securely attached infants (Vandell et al., 1988).

Volling and her colleagues (Volling, 2001; Volling and Belsky, 1992) studied the relation between preschool children's parent-child attachment relationships and the quality of their sibling relationships. Children whose attachment relationships with their mothers at age 1 were classified as insecure-resistant showed more hostility toward and engaged in more conflict with their younger siblings and also sought more comfort from their younger siblings when they were distressed at age 4 (Volling, 2001). Higher levels of conflict and aggression between siblings were found to be related to insecure mother-infant attachment relationships (Volling & Belsky, 1992).

Cicirelli (1989; 1991) describes the bond between adult siblings as an attachment bond, characterized by attachment behaviours such as communication, visits, reunions, caregiving, and helping. Cicirelli (1991) argues that despite distance or separation between siblings in adulthood, the need for closeness and contact with the sibling that are necessary to maintain an attachment relationship is met through siblings' identification with each other. Psychological support between siblings appears to be a particularly important contributor to a secure attachment relationship between siblings (Cicirelli, 1989). Although not explicitly stated by Cicirelli (1991), it is presumable that secure

parent-child attachment relationships in childhood form the basis of healthy, secure attachment relationships between siblings in childhood, adolescence, and adulthood.

Adjustment

A substantial body of research exploring the links between attachment style and psychosocial adjustment in adulthood has found that an insecure attachment style, either anxious or avoidant, increases an individual's risk for poorer adjustment, particularly when under stress. Conversely, secure attachment style appears to serve as a protective mechanism, buffering an individual from decreases in psychological adjustment when exposed to stressors. Insecurely attached individuals' adjustment tends to be less healthy compared to securely attached individuals in a variety of domains, from frequency and intensity of negative affect, to emotional and behavioural regulation, to risk for developing numerous acute and chronic mental health disorders (Lukowitsky & Pincus, 2011; Mikulincer & Shaver, 2007a; Ross & Fuertes, 2010).

Insecure individuals appear to experience higher levels of negative affect and are more prone to distress than secure individuals (e.g., Moore & Leung, 2002). In a diary study of undergraduate students who reported their emotions several times daily, insecurely attached individuals were found to experience negative emotions, including loneliness, anxiety, and irritability, more frequently and more intensely than securely attached individuals (Torquati & Raffaelli, 2004). Attachment anxiety seems to be more strongly associated with increased negative affect than avoidance, perhaps due to anxious individuals' tendency to focus on, express, and intensify negative emotions. However, avoidant individuals are also at risk for higher levels of distress due to their tendency to

suppress or avoid negative emotions initially, which appears to lead to later emotional disturbance (Mikulincer & Shaver, 2007a).

In the domain of emotional regulation, secure attachment allows individuals to experience and express emotions genuinely and adaptively and to develop healthy regulatory mechanisms to cope with intense emotions. Insecure attachment, conversely, interferes with functional emotion regulation, causing insecurely attached individuals to overfocus on negative emotions (i.e., unhealthy rumination), to suppress the experience and the expression of emotions, or to resort to maladaptive coping strategies for the regulation of feelings (Mikulincer & Shaver, 2007a). While avoidantly attached individuals tend to over-rely on the inhibition or suppression of emotions, anxiously attached individuals tend to ruminate or over-focus on negative emotions (Cassidy, 1994).

Compared to secure individuals, insecure individuals tend to rely less on adaptive emotion regulation strategies, such as seeking support from loved ones (Florian, Mikulincer, & Bucholtz, 1995). Secure individuals tend to believe more strongly in their own self-efficacy and their ability to cope with stressful events (Gjerde, Onishi, & Carlson, 2004), and they tend to more flexibly use a variety of adaptive coping strategies (e.g., problem-solving, emotion-focused coping) as compared to insecure individuals (Feeney, 1998). Insecurely attached individuals also exhibit more intense and longer-lasting emotional distress following stressful life events, including separation and divorce (Birnbaum, Orr, Mikulincer, & Florian, 1997), romantic relationship break-ups (Sbarra, 2006), and death of a loved one (Fraley & Shaver, 1999) than do securely attached individuals. Finally, in comparison to secure individuals, insecurely attached people have

more difficulty experiencing, expressing, and coping with strong emotions such as death anxiety (Florian & Mikulincer, 1998) and anger (Barrett & Holmes, 2001), and they also struggle in trying to identify their emotions (Picardi, Toni, & Caroppo, 2005).

Behavioural regulation, or the self-control of goal-directed behaviour necessary to achieve one's objectives, is more challenging for insecure than for secure individuals (Mikulincer & Shaver, 2007a). In setting goals, insecure people are more likely to place primary importance on avoidance of undesired outcomes (e.g., rejection) rather than approaching desired goals (e.g., a mutually satisfying healthy romantic relationship) (Elliot & Reis, 2003). This emphasis on fear and avoidance of failure at the expense of pursuing success leads to less positive emotions for insecurely attached individuals (Roseman & Evdokas, 2004). Although both types of insecure individuals (anxious and avoidant) struggle with goal pursuit, there are some differences between these two types. While anxious individuals tend to be pessimistic about their chances of success and to experience conflict between multiple goals, avoidant individuals tend to have difficulty committing to their goals (Mikulincer & Shaver, 2007b).

Secure people are also advantaged in goal pursuit due to their superior ability to engage in emotional and cognitive exploration and to remain open to emotions and new experiences as compared to insecure people (Aspelmeier & Kerns, 2003). Secure individuals are also found to be higher in conscientiousness (Tangney, Baumeister, & Boone, 2004) and to be better able to judge when to cease pursuing unattainable goals than are insecure individuals, who either give up too easily (i.e., avoidant individuals) or persevere even when there is a minimal chance of success (i.e., anxious individuals) (Mikulincer & Shaver, 2007ab).

Research examining the links between attachment style and the achievement of major developmental milestones lends support to the association between insecure attachment and poorer behavioural regulation. In a variety of domains, from identity formation in adolescence (MacKinnon & Marcia, 2002), to exploring career options (Felsman & Blustein, 1999), to academic achievement (Moore & Leung, 2002; Moss & St.-Laurent, 2001), to achieving a healthy work-life balance in adulthood (Hazan & Shaver, 1990), to maintaining good physical health (Scharfe & Eldredge, 2001), to developing a healthy, mature sense of spirituality (Granqvist & Kirkpatrick, 2004), insecure individuals tend to struggle more than secure individuals. In order to achieve success in all of these major life tasks, healthy behaviour regulation skills are required, and insecure individuals are more likely to lack these crucial necessary skills.

Not only do insecurely attached individuals experience more negative emotions and have more difficulty regulating their emotions and behaviour than their secure counterparts, they are also at higher risk for developing numerous forms of psychopathology (Mikulincer & Shaver, 2007a). Insecure attachment style is associated with increased risk for depression and anxiety disorders. This association is stronger for anxious attachment than for avoidant attachment; however, both types of insecure attachment increase the risk of developing affective and anxiety disorders, although perhaps in slightly different forms (Davila, 2001). This association exists both concurrently and longitudinally, with earlier assessments of insecure attachment style predicting later increased incidence of symptoms of depression and anxiety (Grunebaum, Galfalvy, Mortenson, Burke, Oquendo, & Mann, 2010; Haaga, Yarmus, Hubbard, Brody, Solomon, Kirk et al., 2002). In addition, the link between insecure attachment and

affective disorders has been supported in both community (e.g., Zuroff & Fitzpatrick, 1995) and clinical (e.g., Bifulco, Moran, Ball, & Bernazzani, 2002) samples.

Mechanisms that may help explain why insecure attachment style increases the risk for depression and anxiety include maladaptive cognitive distortions (e.g., Hankin, Kassel, & Abela, 2005), difficulty regulating emotions (e.g., Strodl & Noller, 2003), and difficulty negotiating interpersonal interactions (e.g., Shaver, Schachner, & Mikulincer, 2005).

Insecure attachment style is also linked to increased risk for developing Post-Traumatic Stress Disorder (PTSD) following exposure to a traumatic event. Anxiously attached individuals tend to exhibit more intrusive PTSD symptoms (e.g., flashbacks), while avoidantly attached individuals tend to exhibit more avoidance symptoms of PTSD (e.g., emotional numbing) (Mikulincer, Shaver, & Horesh, 2006). More frequent suicidal ideation is also associated with insecure attachment style, particularly anxious attachment style (DiFilippo & Overholser, 2000; Grunebaum et al., 2010). Insecurely attached individuals are also at increased risk of developing eating disorders (e.g., Orzolek-Kronner, 2002), conduct disorder and criminality (e.g., Levinson & Fonagy, 2004), substance abuse and dependence (e.g., Brennan & Shaver, 1995), personality disorders (e.g., Bogaerts, Vanheule, & Declercq, 2005), and psychotic disorders (e.g., schizophrenia; Dozier, Stevenson, Lee, & Velligan, 1991) compared to securely attached individuals.

Romantic Relationship Quality

The relation between attachment style and romantic relationship quality has been firmly established in many empirical studies (Mikulincer & Shaver, 2007a). In general, securely attached individuals perceive greater relationship satisfaction, more stable and

long-lasting romantic relationships, and lower rates of intimate partner violence than do insecurely attached individuals. In addition, insecurely attached individuals tend to have more difficulty navigating all developmental phases of romantic relationships and are more likely to engage in maladaptive behaviour within romantic relationships, which tends to increase their own and their partners' distress (Mikulincer & Shaver, 2007a).

With regard to relationship satisfaction, insecurely attached individuals (both anxious and avoidant) tend to report greater dissatisfaction than do securely attached individuals (e.g., Elizur & Mintzer, 2001), even after taking into account gender roles, personality traits, depressive symptoms, and self-esteem (Nofhle & Shaver, 2006). This finding is consistent among dating (Elizur & Mintzer, 2001) and married couples (Alexandrov, Cowan, & Cowan, 2005), and among both women and men (Mikulincer & Shaver, 2007a). Attachment security can act as a protective factor in romantic relationships, buffering the negative influence of stressful events on relationship satisfaction (Mikulincer & Shaver, 2007a). In a study of married couples with a history of infertility problems attempting to become pregnant, insecurely attached married women, particularly those with an anxious attachment style, reported lower relationship satisfaction than did those who were securely attached (Amir, Horesh, & Lin-Stein, 1999). These findings suggest that secure attachment style helped protect married women struggling with a significant stressor (infertility) from experiencing negative effects on marital satisfaction.

Securely attached individuals also tend to experience greater relationship stability than do insecurely attached individuals (e.g., Hazan & Shaver, 1987). Anxious and avoidant individuals are more likely to have romantic relationships of shorter duration

and are more likely to divorce than secure individuals (Feeney & Noller, 1990). In a longitudinal study following couples over a 4-year period, Kirkpatrick and Hazan (1994) found that anxious individuals were more likely to stay in unhappy relationships or to break up and then reunite with their former partners multiple times, perhaps reflecting a reluctance to be alone or pessimism about finding another romantic partner. Avoidant individuals, on the other hand, were more likely to end relationships if they experienced distress (Kirkpatrick & Hazan, 1994).

Rates of intimate partner violence are higher in couples containing one or two insecurely attached partners than in couples comprised of two securely attached partners (Miga, Hare, Allen, & Manning, 2010; Mikulincer & Shaver, 2007a; Riggs & Kaminski, 2010). Anxious attachment and fearful avoidant attachment seem to be more strongly associated with relationship violence than dismissing avoidant attachment (Bartholomew & Allison, 2006; Mikulincer & Shaver, 2007a). According to attachment theory, intimate partner violence is seen as a maladaptive reaction to the perception that one's partner is not available or responsive, which leads an insecurely attached individual to perpetrate violence in order to prevent the partner from withdrawing or leaving the relationships (Bartholomew & Allison, 2006). This theory may help explain why attachment anxiety seems to be more highly correlated with relationship violence than attachment avoidance, since anxious individuals are likely to become especially distressed when their partners seem unavailable or withdrawn, due to their strong fear of rejection. Anxiously attached individuals also appear to be at higher risk for being victims of relationship violence (Bond & Bond, 2004; Miga et al., 2010), perhaps because of their reluctance to leave unhappy or even abusive relationships due to a fear of being alone.

As well as experiencing more relationship dissatisfaction, less relationship stability, and more relationship violence, insecurely attached individuals are also more likely to exhibit maladaptive behaviour in all stages of romantic relationships, from formation, to increasing intimacy, to maintenance of long-term relationships (Mikulincer & Shaver, 2007a).

In the beginning phases of romantic relationships, anxiously attached individuals tend to be more pessimistic, fixated on potential rejection, and worried, while avoidantly attached individuals tend to be distant, seemingly narcissistic, and emotionally withdrawn (Mikulincer & Shaver, 2007a). For both types of insecurely attached individuals, these maladaptive behaviours and beliefs are likely to interfere with the formation of healthy romantic relationships. Insecure individuals are less likely than secure individuals to be able to use self-disclosure adaptively in the beginning phases of a romantic relationship (Grabill & Kerns, 2000). Avoidant individuals tend to engage in too little self-disclosure, while anxious individuals tend to disclose excessively and too early in their interpersonal contacts (Grabill & Kerns, 2000). Finally, insecurely attached individuals are more likely to experience difficulty forming romantic relationships because they are viewed as less desirable potential romantic partners by individuals of all attachment styles (Pietromonaco & Carnelley, 1994). In addition, insecurely attached people tend to date other insecurely attached people, which is likely to lead to difficulties forming healthy romantic relationships (McCarthy, 1999).

In the middle phases of romantic relationships, important attachment-related predictors of success include individuals' beliefs about love and romantic relationships, ability to build intimacy, ability to commit, and ability to feel secure and safe in their

romantic relationships (Mikulincer & Shaver, 2007a). Secure individuals tend to hold more optimistic beliefs about the possibility of finding lasting love than do insecure individuals, with avoidantly attached individuals being least likely to believe that falling in love is possible (Hazan & Shaver, 1987). Anxious individuals, despite believing strongly that falling in love is possible, tend to doubt the possibility that they will have a successful, lasting romantic relationship (Pietromonaco & Carnelley, 1994).

With regard to comfort with intimacy, insecurely attached individuals tend to have more difficulty navigating this challenge than do securely attached individuals. While secure individuals tend to feel comfortable with intimacy, anxious individuals tend to pursue intimacy too intrusively, while avoidant individuals tend to withdraw and become distant (Bartholomew & Allison, 2006). Both of these maladaptive tactics decrease insecure individuals' perceptions of intimacy in their romantic relationships (Collins, Cooper, Albino, & Allard, 2002).

In the domain of commitment, insecurely attached individuals are less likely to commit themselves to long-term relationships than secure individuals (Joel, MacDonald, & Shimotomai, 2011; Keelan, Dion, & Dion, 1994; Schindler, Fagundes, & Murdock, 2010). For avoidant individuals, a tendency to overemphasize independence can interfere with the ability to commit to a romantic partner (Mikulincer & Shaver, 2007a; Schindler et al., 2010). For anxious individuals, despite wishing for a committed relationship, a tendency to commit too early, perhaps to incompatible partners, may interfere with their actual ability to commit to stable, long-lasting relationships (Joel et al., 2011; Morgan & Shaver, 1999).

Finally, in the middle phases of romantic relationships, insecure individuals are less likely than secure individuals to use their relationships as a safe haven in which to feel secure (Trinke & Bartholomew, 1997). For avoidant individuals, this difficulty seems to stem from discomfort with closeness and support-seeking, while for anxious individuals, it may stem from excessive reassurance-seeking or from refraining from support-seeking for fear of appearing overly needy (Mikulincer & Shaver, 2007a).

In the later phases of romantic relationship maintenance, communication, conflict resolution strategies, expressions of positive regard, and responses to perceived partner wrong-doing are all important contributors to healthy relationships (Mikulincer & Shaver, 2007a). Securely attached individuals tend to be more comfortable communicating their emotions, needs, and concerns openly with their romantic partners than are insecure individuals (Mikulincer & Shaver, 2007a). Avoidant individuals tend to have difficulty sharing their emotions, responding to their partners' needs, and expressing affection for their partners (Feeney, 1999). Anxious individuals, on the other hand, also tend to hide their emotions, but perhaps for different reasons, as they may perceive themselves as too needy or fear their partners' criticism (Feeney, 1999). They may also focus too strongly on their own worries and insecurities and have difficulty responding to their partners' needs (Mikulincer & Shaver, 2007a).

Similar to their difficulty with communication, insecure individuals also tend to struggle with resolving conflict in romantic relationships (Senchak & Leonard, 1992). Maladaptive conflict management strategies more frequently used by insecure than secure individuals include coercion, high levels of demand, withdrawal, and attacks. Conversely, securely attached people are more likely to express affection and empathy

during arguments and to compromise with their partners (Mikulincer & Shaver, 2007a). Although there are substantial differences in the conflict resolution tactics employed by secure compared to insecure individuals, there appear to be fewer differences in the strategies employed by anxious compared to avoidant individuals. However, some research has found that anxious people tend to express more negative affect during discussions about conflict, while avoidant individuals tend to withdraw (Paley, Cox, Burchinal, & Payne, 1999).

Insecure individuals tend to have more difficulty than secure individuals directing positive expressions of love, admiration, and respect toward their romantic partners, perhaps due to their negative working models of others; this seems to be particularly true for individuals who are highly avoidant (Frei & Shaver, 2002). In addition, insecure individuals tend to respond maladaptively when they perceive that they have been wronged by their partners (Gaines & Henderson, 2002). They tend to use less active problem-solving, less understanding that the wrong-doing is temporary and can be righted, more reciprocation of harm, more frequent termination of the relationship, and more ignoring of the problem (Gaines & Henderson, 2002). While avoidant individuals tend to respond to their partners' transgressions by distancing themselves, withdrawing, and minimizing the importance of the wrongdoing, anxious individuals tend to respond with unhealthy negative rumination, avoidance of discussing the problem, and overwhelming negative feelings (Jang, Smith, & Levine, 2002).

PDT and Attachment Style

Although there is evidence that PDT negatively influences sibling relationship quality, adjustment, and perhaps romantic relationship quality, little is known about the

potential mechanisms through which this influence occurs. One such possible mechanism is attachment style. According to traditional attachment theory, insecure attachment results from a child perceiving her primary caregiver as insensitive and unresponsive to her needs. However, this focus on direct interactions between child and primary caregiver neglects the potential impact on attachment security of the child's observations of his caregiver interacting with other family members (e.g., his siblings). If a child observes that she is receiving relatively *less* warmth, sensitivity, and responsiveness from her caregiver than her sibling is, this sense of relative maltreatment may lead to attachment insecurity. However, there may be negative effects on attachment security even if a child observes that he is receiving relatively *more* warmth, sensitivity, and responsiveness from his caregiver than his sibling. In this case, the child's awareness that his caregiver is capable of acting inconsistently and less sensitively may threaten his own sense of security regarding the caregiver, contributing to more insecure attachment.

The experience of PDT, whether one is the favoured or the disfavoured sibling, may lead to insecure attachment through the development of negative internal working models of self or others. The disfavoured sibling may develop a negative internal working model of self, as he may view himself as worthless or undeserving of love since his parents treat him relatively poorly compared to his sibling. In addition, the disfavoured sibling may develop a negative internal working model of others, as he may view his caregivers as harsh, withholding, insensitive, or unresponsive. The favoured sibling is perhaps less likely than the favoured sibling to develop a negative internal working model of self, as she is the recipient of warm, consistent, sensitive, responsive

parenting and is likely to enjoy higher self-esteem and to feel deserving of love.

However, the favoured sibling may develop negative internal working models of others if she observes the inconsistencies with which her parent treats her compared to her disfavoured sibling. Her observations of these inconsistencies may also cause her to worry that at some point in the future, she too may be the recipient of more negative parental treatment.

Two recent studies have explored attachment style as a mediator of the impact of PDT on adjustment (Sheehan & Noller, 2002) and romantic relationship quality (Rauer & Volling, 2007). Sheehan and Noller (2002) explored attachment style as a mediator in the relation between PDT and adolescents' adjustment in a sample of 174 adolescent twins. Twins who were disfavoured by their parents reported greater anxiety, lower self-esteem, and more insecure attachment style. Attachment style was found to mediate the relation between differential parental affection and adjustment; mediation was particularly strong for maternal differential affection and adolescents' anxiety. In this study, PDT was linked with a particular indicator of attachment insecurity, discomfort with closeness, which is associated with an avoidant attachment style.

In a study of 200 young adult university students, receiving equal affection from parents compared to siblings was associated with more secure attachment, higher self-esteem, and less distress in romantic relationships (Rauer & Volling, 2007). On the other hand, receiving differing amounts of parental affection from a sibling, regardless of whether the respondent was favoured or disfavoured, was associated with more insecure attachment styles, which were associated in turn with more distress in romantic relationships. Individuals who reported receiving less affection than their sibling tended

to endorse a preoccupied attachment style and lower self-esteem. Those who reported receiving more affection than their sibling, despite apparently high self-esteem, tended to endorse a dismissing or fearful attachment style. The preoccupied attachment style was linked with increases in conflict, ambivalence, and jealousy in romantic relationships, while the dismissing attachment style was linked with increases in ambivalence, and the fearful attachment style was linked with increases in jealousy and conflict.

Two earlier studies also explored the links between PDT and attachment. In a study of siblings in early childhood, Volling and Belsky (1992) found that securely attached older siblings were more reactive to PDT than insecurely attached older siblings. Securely attached older siblings may experience a sense of loss when parents direct more attention or affection to younger siblings, as they were previously the only object of parents' attention prior to their younger siblings' birth. This sense of loss may lead to resentment, jealousy, conflict, and less cooperation between siblings.

Another study of mothers' preferences for one of their premature twins (Minde, Corter, Goldberg, & Jeffers, 1990) also provides support for the link between PDT and attachment style. In a study of 24 twin pairs followed from birth to age 4, mothers who were observed to show a stable preference (as rated on specific behavioural criteria by two trained observers) for one twin over the other were found to parent that twin in a warmer, more sensitive, more responsive, and more consistent manner. While these mothers responded sensitively to the preferred twins' expressed needs, they tended to initiate and control interactions with the non-preferred twins rather than responding to their expressed needs. Minde and his colleagues (1990) concluded that the parenting style that mothers directed toward their preferred twins was highly favourable for the

development of secure attachment between mothers and infants. Indeed, one year after maternal preferences were assessed, preferred twins were more likely than non-preferred twins to exhibit secure attachment to their mothers.

The Present Study

The *first* goal of this study was to develop a new, more thorough self-report measure of young adults' perceptions of PDT in their current relationships with their parents. This measure aimed to assess young adults' views of the differential relationships that they and their siblings have with their parents, rather than targeting the views of children, adolescents, or parents, as existing measures typically do. Therefore, the new measure examined domains of PDT that should be particularly salient to parent-child relationships in young adulthood (e.g., positive affective quality, negative affective quality, parental support, fostering independence, and negative control). Using participants' responses to both questionnaires, this new measure of PDT was compared with the Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985), the most well-known and best empirically validated self-report measure of PDT.

The *second* goal of the present study was to explore the influence of perceptions of PDT on sibling relationship quality, romantic relationship adjustment, and general adjustment in young adulthood. The study investigated whether attachment style mediates the relations between perceptions of PDT and these outcomes, potentially serving as a mechanism through which perceived PDT exerts its influence. This study was the first to explore the influence of perceptions of PDT on all of these outcomes in one sample, as well as to take into consideration the overall quality of the parent-child relationship and young adults' perceptions of the fairness of their parents' PDT.

Method

Participants

Participants included 275 older adolescents and young adults (121 males, 154 females) aged 17 to 25 years ($M = 20.75$, $SD = 2.23$). Participants included 226 University of Victoria undergraduate students (115 males, 111 females) recruited from the University of Victoria Psychology Research Participation System and 49 non-student young adults (6 males, 43 females) recruited through various community advertisements (e.g., Craigslist, UsedVictoria, Kijiji, Facebook, word of mouth).

Participants were required to have at least one sibling (biological, half-, or step-) with whom they lived while growing up. Participants came from families of 2 to 7 siblings ($M = 2.61$, $SD = 0.86$). With respect to birth order, 41.8% of participants were first-born, 42.9% were second-born, 13.1% were third-born, and 2.2% were fourth-born. Of the 273 participants who reported the sex of their closest aged sibling, 136 had brothers and 137 had sisters. Siblings were between the ages of 7 and 36 years ($M = 20.80$, $SD = 4.39$). With respect to sibling birth order, 37.1% of siblings were first-born, 53.5% were second-born, 7.3% were third-born, 1.1% were fourth-born, and 0.4% were fifth-born. Seventeen participants reported that their sibling had a disability. Siblings' reported disabilities included ADHD/learning disabilities (41.2%), physical disabilities (17.6%), intellectual disabilities (11.8%), multiple disabilities (11.8%), chronic medical conditions (5.9%), developmental disabilities (5.9%), and mental health disorders (5.9%).

Of the 264 participants who elected to report their ethnicity, 78.4% identified as Caucasian, 9.1% as Asian-Canadian, 5.8% as multiple ethnicities, 3.6% as Indian/East Indian, 1.8% as African-Canadian, 0.4% as Latino, and 0.4% as Middle Eastern. Of the

264 participants who reported the SES of their family of origin, 64.4% identified as upper middle class, 17.8% identified as lower middle class, 9.5% identified as working class, and 4.4% identified as upper class. Participants' parents were mainly still married (76%). Participants from divorced families ($N = 66$) reported that their parents had divorced when they were 0-24 years old ($M = 8.80$, $SD = 5.37$).

Participants were asked to answer questions regarding their romantic relationship status and histories. Of the 272 participants who responded, 88.6% indicated that they had been in one or more romantic relationships, while 11.4% indicated that they had never been in a romantic relationship. Of the 271 participants who responded, 48.7% reported that they were currently in a romantic relationship, while 51.3% reported that they were not. Participants ($n = 271$) indicated having been involved in between 0 and 15 romantic relationships ($M = 2.23$, $SD = 1.98$).

Measures

Self-report questionnaires were used to assess the constructs of interest. Items for each measure can be found in Appendix A.

Demographic information. In a self-report questionnaire (see Appendix A), participants were asked to provide their own and their sibling's date of birth, sex, and birth order rank, whether their sibling had a disability (and if so, what type of disability), the total number of children in their family, their ethnicity, the socioeconomic status of their family of origin, whether their parents had ever divorced or separated (and if so, their age at the time), whether they had ever been in a romantic relationship and if so how many, and whether they were currently in a romantic relationship. This demographic information was collected primarily for descriptive purposes.

Past PDT and perceived fairness. The present study focused on young adults' perceptions of PDT as compared to only one other sibling (the sibling closest to them in age), even if they came from families comprised of multiple siblings, consistent with past research that has mainly focused on either two-sibling families or on one particular sibling pair if families contain more than two siblings. Hence, participants who had more than one sibling were asked to think about their closest-aged sibling when completing the questionnaires assessing perceptions of parental differential treatment.

Two self-report questionnaires were used to assess PDT. First, participants completed two subscales of the Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985) that assess differential parenting: Differential Affection and Differential Control. These two subscales require respondents to compare their experiences in the domain of parental treatment with their perceptions of their sibling's treatment by parents. Participants completed each subscale concerning their general perceptions of PDT in their family when they were growing up. Participants completed the SIDE twice, once regarding maternal PDT and once regarding paternal PDT.

The Differential Affection subscale focuses on parents' differential pride, enjoyment, understanding, interest, and favouring targeted towards their two children, and it contains 5 items. The Differential Control subscale targets parents' differential strictness, punishment, discipline, and blame targeted towards their two children, and it contains 4 items. Possible ratings for each item range from "1" to "5." A rating of "1" indicates that a particular parental behaviour is directed toward the participant's sibling much more than to the respondent. A rating of "3" indicates that both siblings receive the same amount of the parental behaviour. A rating of "5" indicates that the parental

behaviour is directed toward the participant much more than to the sibling.

For the present study, SIDE total and subscale scores were calculated as follows. To calculate relative PDT scores on the SIDE, all items were recoded such that higher scores indicated more positive treatment of self relative to sibling. Second, a mean score was calculated for mother's relative PDT (sample $m = 2.99$, $sd = 0.31$, $min = 1.78$, $max = 3.89$) and one for father's relative PDT ($m = 3.00$, $sd = 0.34$, $min = 1.44$, $max = 5.00$). To calculate absolute PDT scores on the SIDE, scores of "3" (equal treatment) were converted to "0" (no differential treatment), scores of "2" or "4" (slightly more positive or slightly more negative treatment than sibling) were converted to "1" (slight differential treatment), and scores of "1" or "5" (much more positive or much more negative treatment than sibling) were converted to "2" (much differential treatment). Then one mean score was calculated for mother's absolute PDT ($m = 0.30$, $sd = 0.28$, $min = 0$, $max = 1.56$) and one for father's absolute PDT ($m = 0.31$, $sd = 0.34$, $min = 0$, $max = 2.00$). Means, standard deviations, minimums, and maximums for the SIDE mother and father relative and absolute subscales are presented in Table 1.

Table 1: Descriptive Statistics for SIDE Mother and Father Relative and Absolute

Subscales

SIDE Subscale	Statistic	Mother		Father	
		Relative	Absolute	Relative	Absolute
Differential Affection	Mean	3.04	0.27	3.04	0.34
	Standard Deviation	0.37	0.29	0.48	0.38
	Minimum	1.80	0.00	1.00	0.00
	Maximum	4.60	1.60	5.00	2.00
Differential Control	Mean	2.92	0.34	2.94	0.28
	Standard Deviation	0.47	0.39	0.45	0.40
	Minimum	1.25	0.00	1.00	0.00
	Maximum	4.50	1.75	5.00	2.00

Internal consistency scores (Cronbach's alphas) for SIDE relative and absolute total scales and subscales were as follows: .66 for SIDE mother relative total scale, .70 for SIDE father relative total scale, .69 for SIDE mother absolute total scale, .78 for SIDE father absolute total scale, .59 for SIDE mother relative differential affection, .70 for SIDE mother relative differential control, .76 for SIDE father relative differential affection, .73 for SIDE father relative differential control, .54 for SIDE mother absolute differential affection, .65 for SIDE mother absolute differential control, .70 for SIDE father absolute differential affection, and .73 for SIDE father absolute differential control.

Daniels and Plomin (1985) reported that two-week test-retest reliabilities for the PDT subscales were .77 for both Mother's Differential Control and Father's Differential

Affection, .82 for Mother's Differential Affection, and .85 for Father's Differential Control in a sample of 57 biological sibling pairs. Factor analysis using all nine differential parental treatment items revealed the two proposed factors (Differential Affection and Differential Control). Sibling agreement on these two subscales was low to moderate in a sample of 149 Caucasian sibling pairs aged 12-28 years, with larger negative correlations indicating greater agreement between the two siblings regarding their perceptions of parental differential treatment. For Mother's Differential Affection, Mother's Differential Control, Father's Differential Affection, and Father's Differential Control, correlations between siblings were -.26, -.25, -.28, and -.49, respectively. All correlations were statistically significant at $p < .05$.

Current PDT and perceived fairness. Second, participants' perceptions of current differences in the relationship they have with their parents compared to the relationship their sibling has with their parents were measured using a 60-item self-report questionnaire designed for this study, the Parental Differential Treatment Questionnaire (PDT-Q). The PDT-Q contains five subscales representing both positive and negative aspects of the parent-child relationship particularly salient for young adult children: positive affective quality (16 items), negative affective quality (11 items), parental support (12 items), fostering independence (9 items), and negative control (12 items). Participants were asked to rate each item on a scale of 1 to 5, where 1 indicates that their parents treat their sibling this way much more than them, 3 indicates that their parents treat both siblings equally, and 5 indicates that their parents treat them this way much more than their sibling. Participants completed the PDT-Q once regarding maternal PDT and once regarding paternal PDT. Additionally, for each item, participants were asked to

select whether they believe that this parental behaviour is fair (coded as “0”) or unfair (coded as “1”) (Kowal, Krull, & Kramer, 2004).

Relative and absolute PDT scores for mother’s and father’s PDT were calculated identically to those for the SIDE (see above). Mean scores were 3.02 for mother’s relative PDT (sd = 0.22, min = 1.36, max = 3.70), 3.01 for father’s relative PDT (sd = 0.24, min = 1.37, max = 3.90), 0.26 for mother’s absolute PDT (sd = 0.24, min = 0, max = 1.85), and 0.22 for father’s absolute PDT (sd = 0.25, min = 0, max = 1.66). Means, standard deviations, minimums, and maximum for the PDT-Q subscales are presented in Table 2. One item was dropped from the PDT-Q (Item 56) due to an error in printing that led many participants to leave this item blank.

Table 2: Descriptive Statistics for PDT-Q Mother and Father Relative and Absolute

Subscales

PDT-Q Subscale	Statistic	Mother		Father	
		Relative	Absolute	Relative	Absolute
Positive Affective Quality	Mean	3.07	0.27	3.02	0.26
	Standard Deviation	0.32	0.25	0.36	0.31
	Minimum	1.00	0.00	1.13	0.00
	Maximum	4.44	2.00	4.56	1.88
Support	Mean	2.96	0.27	2.99	0.23
	Standard Deviation	0.31	0.28	0.33	0.30
	Minimum	1.00	0.00	1.08	0.00
	Maximum	4.42	2.00	4.25	1.92
Negative Affective Quality	Mean	3.00	0.25	2.99	0.20
	Standard Deviation	0.33	0.29	0.31	0.28
	Minimum	1.09	0.00	1.64	0.00
	Maximum	3.91	1.91	4.46	1.46
Fostering Independence	Mean	3.07	0.29	3.06	0.23
	Standard Deviation	0.32	0.32	0.31	0.30
	Minimum	1.44	0.00	1.67	0.00
	Maximum	4.22	2.00	4.22	1.67
Negative Control	Mean	2.99	0.21	2.99	0.17
	Standard Deviation	0.28	0.27	0.26	0.27
	Minimum	1.18	0.00	1.09	0.00
	Maximum	3.91	1.82	4.00	1.91

Cronbach's alphas for the PDT-Q absolute total scale were .94 for the mother version and .95 for the father version. Cronbach's alphas for the five absolute subscales for the mother and father versions were as follows: .82 for mother and .89 for father version for Positive Affective Quality (items 1-16), .78 for mother and .84 for father version for Support (items 17-28), .82 for both mother and father versions for Negative Affective Quality (items 29-39), .76 for mother and .79 for father version for Fostering Independence (items 40-48), and .81 for mother and .84 for father version for Negative

Control (items 49-55, 57-60). (Information regarding internal consistency of PDT-Q relative total scales and subscales is presented in the Reliability Analysis of the PDT-Q subsection of the Results section).

Fairness scores were calculated by taking the mean score for all completed fairness items on the PDT-Q (minimum possible score = 0, maximum possible score = 1). One fairness score was calculated for mother's PDT ($m = 0.14$, $sd = 0.16$, $min = 0$, $max = 1$) and one for father's PDT ($m = 0.15$, $sd = 0.19$, $min = 0$, $max = 1$). Cronbach's alphas were .94 for mother's unfairness and .95 for father's unfairness.

PDT-Q items were developed by examining items from measures of parent-child relationship quality, particularly those assessing the parent-child relationship in late adolescence and young adulthood. Items were selected for salience to key aspects of the parent-young adult child relationship (e.g., positive and negative affective quality, support, parental fostering of young adult children's independence, negative control) and for clarity. Items were modified from the following measures: the SIDE (Daniels & Plomin, 1985), the Colorado Parental Child-Rearing Scale (CPCRS; George & Bloom, 1997), the Relationship with Mother and Father Scales (RMFS; Hindy & Schwarz, 1994), the Parental Attachment Questionnaire (PAQ; Kenny, 1987), the Parent-Child Closeness Scale (PCC; Buchanan, Maccoby, & Dornbusch, 1991), and the Parent-Child Relationship Questionnaire (PCRQ; Furman & Gibson, 1995). Items contained in these measures are presented in Appendix B. Items modified for the PDT-Q are marked with an asterisk (*) and the item numbers on the PDT-Q are indicated.

Parent-child relationship quality. Participants completed the Parental Attachment Questionnaire (Kenny, 1987), a 55-item self-report questionnaire designed to assess the

general quality of adolescents' and young adults' current relationships with their parents. Three aspects of parent-child relationship quality are assessed by the PAQ: affective quality of the relationship (27 items), parents as sources of emotional support (13 items), and parents as facilitators of independence (14 items). Respondents rate their agreement with each item on a scale from 1 (not at all) to 5 (very much). Respondents completed this questionnaire once regarding their relationship with their mother and once regarding their relationship with their father. Cronbach's alphas from the three subscales range from .88 to .96, and 2-week test-retest reliabilities range from .82-.91 (Kenny, 1987). The PAQ has been used in multiple published studies of early adolescents, older adolescent college and technical school students, young adults, and female inpatients being treated for eating disorders (e.g., Kenny & Donaldson, 1991; Kenny & Hart, 1992; Taub, 1997).

For the present study, total PAQ scores were calculated for mother and father. First, all items were coded such that higher scores indicated more positive parent-child relationship quality. Second, mean scores were calculated for mother-child relationship quality and father-child relationship quality. The minimum possible score was 1, and the maximum possible score was 5. The mean score for mother-child relationship quality was 3.83 (sd = 0.53, min = 1.89, max = 4.67) and the mean score for father-child relationship quality was 3.73 (sd = 0.62, min = 1, max = 4.71). Internal consistency, as measured by Cronbach's alpha, was .95 for both the mother version and the father version.

Attachment style. A self-report measure was used to assess attachment style. The Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) is a 40-item

self-report questionnaire assessing five dimensions of attachment in adolescents and adults: treatment of relationships as secondary to achievement (7 items), need for approval (7 items), discomfort with closeness (10 items), preoccupation with relationships (8 items), and confidence in self and others (8 items). Respondents rate their agreement with each statement on a scale from 1 (totally disagree) to 6 (totally agree). Alphas for the 5 subscales ranged from .76 to .84 in a sample of university students and from .67 to .73 in a sample of early adolescents. Test-retest reliability over 10 weeks ranged from .67 to .78 among university students (Feeney et al., 1994).

For the present study, a total attachment insecurity score was calculated. First, items were recoded such that higher scores indicated more insecure attachment. Second, a mean attachment security score was calculated using all ASQ items. The minimum possible score was 1, and the maximum possible score was 6. The mean attachment insecurity score in this sample was 3.00 (sd = 0.57, min = 1.63, max = 4.43). Cronbach's alpha was .91.

Psychological adjustment. Participants completed the Mood and Anxiety Symptoms Questionnaire (MASQ; Watson & Clark, 1991), a 90-item self-report questionnaire assessing general distress (38 items), symptoms of anxiety (17 items), and positive affect (22 items) over the past week. Factor analyses of the MASQ in studies of university students suggest that the MASQ assesses general distress, positive affect, and anxiety (Keogh & Reidy, 2000; Watson, Clark, Weber, & Assenheimer, 1995). Internal consistency for the MASQ is good, with previous research documenting alphas of .95 for positive affect, .93 to .95 for general distress, and .88 for anxiety (Keogh & Reidy, 2000; Saffrey & Ehrenberg, 2007). Respondents rate the extent to which they have experienced

each symptom “during the last week, including today” on a scale ranging from 1 (not at all) to 5 (extremely).

For the present study, a total negative adjustment score was calculated. First, all items were coded such that higher scores represented poorer adjustment. Second, a mean negative adjustment score was calculated including all MASQ items. The minimum possible score was 1, and the maximum possible score was 5. In this sample, the mean MASQ total negative adjustment score was 2.53 (sd = 0.68, min = 1.12, max = 4.55), and Cronbach’s alpha was .96.

Sibling relationship quality. Participants completed the Adult Sibling Relationship Questionnaire (ASRQ; Stocker, Lanthier, & Furman, 1997) to assess the quality of their current relationships with their closest-aged siblings. This self-report questionnaire contains 81 items and assesses 14 aspects of the sibling relationship, including similarity, intimacy, quarrelling, affection, antagonism, admiration, maternal rivalry, paternal rivalry, emotional support, competition, instrumental support, dominance, acceptance, and knowledge. All subscales contain 6 items except for the similarity subscale (4 items) and the quarrelling subscale (5 items). There are three higher-order factors: warmth, conflict, and rivalry. For all but 12 items, respondents rate the frequency of each statement on a scale from 1 (hardly at all) to 5 (extremely much). The remaining 12 items are rated on a 5-point scale, with respondents indicating which sibling received more parental favouritism, support, and emotional closeness. For all subscales but the maternal and paternal rivalry subscales, subscale scores are computed by averaging item scores. For the rivalry subscales, subscale scores are computed by

averaging the items' distance from the scale midpoint (e.g., low scores reflect an absence of rivalry; high scores reflect the presence of rivalry).

For the present study, a total positive sibling relationship quality score was calculated based on the warmth and conflict factors of the ASRQ. The rivalry factor was not included due to its marked conceptual similarity to measures of PDT. First, all items were coded such that higher scores indicated more positive sibling relationship quality. Second, a mean positive sibling relationship score was calculated including all warmth and conflict items (69 items). The minimum possible score was 1, and the maximum possible score was 5. In the current sample, the mean positive sibling relationship score on the ASRQ was 3.39 (sd = 0.58, min = 1.93, max = 4.88). Cronbach's alpha was .96.

Alphas ranged from .73 to .92 for the 14 subscales (mean alpha = .86) and from .89 to .95 for the three factors (mean = .91) (Stocker et al., 1997). Two-week test-retest reliability ranged from .75 to .94 for the subscales (mean alpha = .86) and from .90 to .97 for the three factors (mean = .93) (Stocker et al., 1997). This questionnaire has been used with adults in early, middle, and later adulthood.

Romantic relationship adjustment. Participants completed the Romantic Self-Concept Questionnaire (RSCQ; Bouchey, 2007), a 26-item self-report questionnaire designed to assess young adults' perceived competence in romantic relationships. The RSCQ contains five subscales measuring respondents' beliefs about exhibiting positive partner characteristics (6 items), ability to maintain relationships (6 items), healthy communication (5 items), romantic appeal (6 items), and sexual competence (3 items). Participants rate their agreement with each item on a scale of 1 (disagree totally) to 6 (agree totally).

For the present study, a total positive romantic relationship adjustment score was calculated. Items were coded such that higher scores indicated more positive romantic relationship adjustment. Next, a mean positive romantic relationship adjustment score was calculated including all RSCQ items. The minimum possible score was 1, and the maximum possible score was 6. For this sample, the mean positive romantic relationship adjustment score on the RSCQ was 4.56 (sd = 0.68, min = 2, max = 6).

In a study of 586 college students (Bouchey, 2007), the RSCQ showed good reliability, with Cronbach's alphas for the five subscales ranging from .70 to .86. One-month test-retest reliability was good, ranging from .77 for the sexual competence subscale to .86 for the maintaining relationships subscale. RSCQ scores were positively associated with duration of respondents' longest relationship involvement and total number of dating partners. In the present study, internal consistency, as measured by Cronbach's alpha, was .89.

Social desirability. Participants completed the Marlowe-Crowne Social Desirability Scale (MCSD; Crowne & Marlowe, 1960), a 33-item self-report questionnaire designed to assess participants' tendency to respond to self-report questionnaires in a manner biased in the direction of social approval or sanctioning. The MCSD is a True or False questionnaire assessing participants' endorsement of behaviours that are considered to be socially desirable or culturally sanctioned, but that are unlikely to occur.

For the present study, a total social desirability score was calculated. For all items, items were coded such that a score of 1 represented the socially desirable response and a score of 0 represented the non-socially desirable response. A mean social desirability

score was then calculated including all items on the MCSD. The minimum possible score was 0, and the maximum possible score was 1. In this sample, the mean social desirability score on the MCSD was 0.43 (sd = 0.16, min = 0.30, max = 0.97).

For the original scale, internal consistency was .88 and one-month test-retest reliability was .89 in a sample of 76 introductory psychology students. MCSD total scores were found to correlate positively with the validity scales of the MMPI and negatively with the clinical scales of the MMPI (Crowne & Marlowe, 1960). The MCSD has been widely used, and it has demonstrated reliability and validity with a variety of populations (Loo & Loewen, 2004). Sex differences on the MCSD have not typically been found (Loo & Loewen, 2004). In addition, the MCSD appears to measure a tendency to respond in a socially desirable manner over and above the effects of psychopathology or poor psychological adjustment. For example, one study found small negative correlations between measures of depression and anxiety and the MCSD (Tanaka-Matsumi & Kameoka, 1986). In the current sample, internal consistency as measured by Cronbach's alpha was .76.

Procedure

After reading and completing informed consent forms, university-based participants completed pencil-and-paper questionnaires in group or individual sessions. These participants were given course credit for study participation. Community participants completed an electronic version of the questionnaires via email after reading and electronically completing informed consent forms. Prior to study participation, community participants were screened via email to ensure that they met age and non-student criteria. These participants were given a \$10 Starbucks gift card to acknowledge

their time. All participants completed the questionnaires in the following order:

Demographics, SIDE mother, SIDE father, PDT-Q mother, PDT-Q father, PAQ mother, PAQ father, MASQ, ASRQ, RSCQ, and MCSD.

Results

Overview

Using MANOVAs, potential sex differences and differences between university student and non-student participants in their perceptions of PDT and outcome variables of interest were explored, in order to determine whether to conduct analyses separately for males and females or by type of participant (i.e., student or non-student). Then structural equation modeling was employed to conduct confirmatory factor analyses assessing the structure of a new self-report measure of PDT in young adulthood, the PDT-Q.

Comparisons of the PDT-Q with the SIDE, an established self-report questionnaire assessing perceptions of PDT, were conducted by examining correlations between full scale and subscale scores to assess the convergent validity of the PDT-Q. Third, path analyses were conducted to explore whether attachment style mediates the relations among PDT and general adjustment, sibling relationship quality, and romantic relationship adjustment. Finally, path analyses were conducted to assess the relative contributions of PDT, perceived unfairness of PDT, and overall parent-child relationship quality to the following outcomes: attachment style, general adjustment, sibling relationship quality, and romantic relationship adjustment.

Preliminary Data Analyses

Missing data were minimal (0-4.0%) and were assumed to be missing at random. Therefore, missing data were imputed using regression imputation in AMOS 18.

Univariate normality of variables of interest was assessed by examining skewness and kurtosis. No significant concerns (critical ratio for skewness >3.27 or <-3.27 , $p < .001$; kurtosis > 3) were found other than for PDT variables; issues related to univariate and multivariate normality of PDT variables are discussed further in the “Confirmatory Factor Analysis Using SEM” section.

MANOVAs

Past research has not found consistent sex differences in levels or effects of PDT, with some studies finding differing levels or effects of PDT for males and females and others finding no sex differences. In order to assess whether to conduct analyses separately for males and females, Multivariate Analyses of Variance (MANOVAs) were conducted in order to determine whether perceptions of parent-child relationship quality, PDT, perceived unfairness of PDT, attachment style, sibling relationship quality, romantic relationship self-concept, and adjustment differed for male and female participants and for male and female university students. In addition, female university students and female community participants were compared on these variables of interest and several demographic variables. It was not possible to compare male university students with male community participants in a meaningful way due to the small sample size for male community participants ($n = 6$). In order to protect against excessive Type 1 errors while maintaining reasonable power (Saville, 2003), the alpha level for the MANOVAs was set to .025. Means and standard deviations for variables of interest are presented in Table 3.

Table 3: Means and Standard Deviations on Variables of Interest for Male and Female University and Community Participants

Variable	Statistic	Subgroup			
		Female University (n = 111)	Male University (n = 115)	Female Community (n = 43)	Male Community (n = 6)
PDTQM	mean	3.02	3.00	3.05	2.95
	s.d.	0.24	0.19	0.20	0.19
PDTQF	mean	3.02	3.01	2.97	3.04
	s.d.	0.24	0.19	0.37	0.09
UM	mean	0.12	0.16	0.12	0.27
	s.d.	0.15	0.16	0.16	0.20
UF	mean	0.14	0.14	0.19	0.27
	s.d.	0.21	0.16	0.22	0.17
PAQM	mean	3.92	3.72	3.92	3.56
	s.d.	0.53	0.51	0.51	0.73
PAQF	mean	3.77	3.74	3.64	3.68
	s.d.	0.67	0.54	0.70	0.48
RSCQ	mean	4.62	4.41	4.83	4.40
	s.d.	0.73	0.67	0.47	0.55
MCSD	mean	0.44	0.42	0.46	0.41
	s.d.	0.16	0.15	0.18	0.11
PDTMA	mean	0.23	0.28	0.27	0.33
	s.d.	0.24	0.23	0.23	0.29
PDTFA	mean	0.19	0.23	0.28	0.23
	s.d.	0.23	0.22	0.33	0.23
ASRQ	mean	3.46	3.30	3.43	3.47
	s.d.	0.60	0.52	0.65	0.65
MASQ	mean	2.53	2.57	2.48	2.19
	s.d.	0.70	0.66	0.71	0.44
ASQ	mean	2.93	3.06	3.00	3.04
	s.d.	0.59	0.53	0.61	0.54

Note. PDTQM = mother relative PDT; PDTQF = father relative PDT; UM = perceived unfairness of mother's PDT; UF = perceived unfairness of father's PDT; PAQM = mother-child relationship quality; PAQF = father-child relationship quality; RSCQ = romantic relationship adjustment; MCSD = social desirability; PDTMA = mother

absolute PDT; PDTFA = father absolute PDT; ASRQ = sibling relationship quality; MASQ = general adjustment; ASQ = attachment insecurity.

The first MANOVA compared male participants ($n = 121$) to female participants ($n = 154$). Two significant differences ($p < .025$) were found. Female participants had higher total scores on the RSCQ, indicating more positive romantic self-concept ($F_{1, 274} = 10.55, p = .001$) than male participants. In addition, females had higher total scores than males on the mother version of the PAQ, indicating a more positive perception of their current relationships with their mothers ($F_{1, 274} = 10.83, p = .001$). In order to take these between-sex differences into account, sex was entered into subsequent analyses involving romantic self-concept and mother-child relationship quality as dependent variables.

The second MANOVA compared male ($n = 115$) and female ($n = 111$) university student participants. One significant difference ($p < .025$) was found. As was seen in the sample as a whole, female university students had higher total scores on the mother version of the PAQ than male university students, indicating a more positive perception of their current relationships with their mothers ($F_{1, 224} = 8.52, p = .004$) than university males.

The third MANOVA compared female university students ($n = 111$) to female community participants ($n = 43$) on the variables of interest as well as on several control variables (birth order, socioeconomic status, total number of romantic relationships, and age). No significant differences ($p < .025$) were found on the variables of interest. However, two significant demographic differences emerged. Female university students were younger ($F_{1, 152} = 143.63, p < .001$) and reported having experienced fewer romantic relationships ($F_{1, 152} = 11.95, p = .001$) than female community participants. This

difference in age was consistent with, on average, a history of fewer romantic relationships. In fact, age and number of romantic relationships were significantly correlated ($r = .35, p < .001$), suggesting that these two differences between female university students and female community participants are mainly due to older age of community participants. Due to the lack of significant differences between female university students and female community participants on the variables of interest, these two groups were combined for subsequent analyses.

Reliability Analysis of PDT-Q

Mother relative PDT-Q. A reliability analysis of the mother relative PDT-Q showed that internal consistency was good (Cronbach's alpha = .89) for the whole 59-item scale ($n = 259$ participants with complete data). Cronbach's alphas for the five subscales were as follows: .85 for Positive Affective Quality (items 1-16), .77 for Support (items 17-28), .81 for Negative Affective Quality (items 29-39), .68 for Fostering Independence (items 40-48), and .75 for Negative Control (items 49-55, 57-60). No item, when temporarily deleted, increased the full scale Cronbach's alpha above .90 or decreased it below .89. Corrected item-total correlations revealed that 31 items had correlations below .40, 20 had correlations below .30, 15 had correlations below .20, and 5 had correlations below .10. The mean inter-item correlation was .13 (minimum = -.36, maximum = .71).

Father relative PDT-Q. Internal consistency was also good for the 59-item father PDT-Q (Cronbach's alpha = .93; $n = 256$ participants with complete data.). Cronbach's alphas for the five subscales were as follows: .89 for Positive Affective Quality (items 1-16), .85 for Support (items 17-28), .81 for Negative Affective Quality (items 29-39), .73

for Fostering Independence (items 40-48), and .76 for Negative Control (items 49-55, 57-60). No item, if temporarily deleted, increased Cronbach's alpha above .94 or decreased it below .93. Corrected item-total correlations revealed that 23 items had correlations below .40, 10 had correlations below .30, 3 had correlations below .20, and 2 had correlations below .10. The mean inter-item correlation was .19 (minimum = -.37, maximum = .68).

Confirmatory Factor Analysis Using SEM

To evaluate the factor structure of the PDT-Q, a confirmatory factor analysis was conducted using structural equation modelling (SEM). SEM is a multivariate statistical approach combining exploratory factor analysis and path analysis to simultaneously test multiple relations among observed (i.e., measured) and latent (i.e., unmeasured) variables. SEM is a confirmatory technique, allowing for tests of theoretically-based a priori hypotheses regarding relations among variables. SEM disattenuates measurement error for each single indicator by using multiple indicators for each construct (latent variable) of interest, increasing reliability by analyzing only shared variance between these multiple observed indicators to approximate the latent variable. In addition, SEM estimates uniqueness for each indicator – variance that is not shared among indicators in the latent factor. By using multiple indicators for each variable of interest, SEM increases construct validity, reduces measurement error associated with each single indicator, and leads to a broader depiction of each underlying latent construct.

SEM was used to conduct two confirmatory factor analyses, one for participants' responses regarding their mothers and one for their responses regarding their fathers. A latent measurement model was employed to evaluate the PDT-Q and to explore whether

the proposed subscales fit the patterns in the data. The confirmatory factor analysis was conducted using the statistical package AMOS 18 (AMOS, 2009) in order to provide a test of the a priori hypothesis that the PDT-Q would be composed of five subscales reflecting five latent constructs representing distinct subdomains of PDT.

Prior to data analysis, one item (56) was deleted from the PDT-Q due to an unusually high proportion of missing data (14.9% for mother PDT-Q; 15.6% for father PDT-Q) compared to all other items (0-1.1% for mother PDT-Q; 2.5-4.0% for father PDT-Q). Closer inspection of this item revealed that a printing error had likely contributed to a lack of clarity in the wording of this item, leading many participants to leave it blank. It is possible that even the participants who did answer this item may not have understood it correctly.

Due to relatively small sample size ($N = 275$) in the context of a relatively large number of parameters to be estimated for this 59-item scale, item parceling was used (Hau & Marsh, 2004). The purpose of item parceling is to improve univariate and multivariate normality as well as to decrease the number of parameters to be estimated, therefore leading to more conservative participants-to-parameters ratios in smaller sample sizes. Using SPSS 17 (SPSS, 2008), items were randomly assigned within subscales to three parcels of 3-4 items. Parcels and their corresponding items are presented in Table 4. For each parcel, items were summed.

Table 4: Parcels and Corresponding Items for Confirmatory Factor Analysis of Parental Differential Treatment-Questionnaire (PDT-Q)

Subscale	Parcel	Items
Positive Affective Quality (PAQ) (Items 1-16)	PAQ 1	3, 4, 9, 12, 16
	PAQ 2	1, 2, 10, 11, 14
	PAQ 3	5, 6, 7, 8, 13, 15
Support (SUP) (Items 17-28)	SUP 1	20, 23, 26, 28
	SUP 2	17, 18, 22, 27
	SUP 3	19, 21, 24, 25
Negative Affective Quality (NAQ) (Items 29-39)	NAQ 1	30, 31, 35, 37
	NAQ 2	34, 36, 38, 39
	NAQ 3	29, 32, 33
Fostering Independence (FI) (Items 40-48)	FI 1	42, 43, 46
	FI 2	41, 44, 48
	FI 3	40, 45, 47
Negative Control (NC) (Items 49-55, 57-60)	NC 1	49, 53, 54, 55
	NC 2	57, 58, 59, 60
	NC 3	50, 51, 52

The models were scaled by fixing one parcel (Parcel 1) to 1.0 for each factor.

Model fit was evaluated using the following criteria: (1) the χ^2 goodness of fit test

(Loehlin, 1998), (2) the ratio of χ^2 to degrees of freedom (CMIN/df; Bollen, 1989), (3) the

comparative fit index (CFI; Bentler, 1990), and (4) the root mean squared error of approximation (RMSEA; Steiger, 1990). Results of these two structural equation models showed that minimums were achieved, indicating that the models converged successfully.

Based on widely accepted conventions associated with the aforementioned fit criteria, the fit statistics for the mother PDT-Q indicated moderate to good model fit: $\chi^2 = 193.67$, $df = 80$, $p < .0001$; CMIN/df = 2.42; CFI = .94; RMSEA = .07 (90% CI = .05 - .09). Similarly, fit statistics for the father PDT-Q indicated moderate to good model fit: $\chi^2 = 208.74$, $df = 80$, $p < .0001$; CMIN/df = 2.61; CFI = .95; RMSEA = .08 (90% CI = .06 - .09). The latent measurement models, showing factor loadings for parcels, correlations among latent factors, and squared multiple correlations for parcels, are presented in Figure 1 for the mother PDT-Q and Figure 2 for the father PDT-Q. Factor variances are presented in Table 5 for the mother PDT-Q and Table 6 for the father PDT-Q.

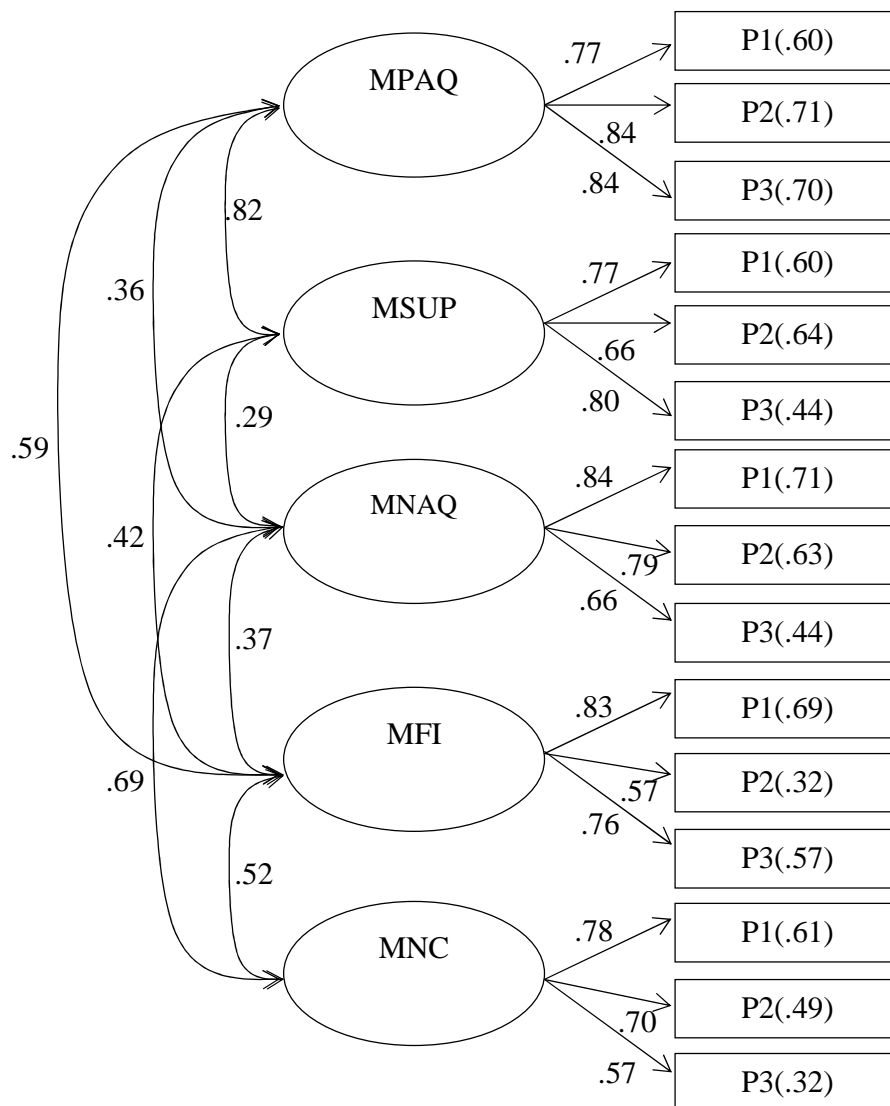


Figure 1. Structural equation modelling (SEM) measurement model used for confirmatory factor analysis of mother Parental Differential Treatment-Questionnaire showing parcel loadings, correlations among factors, and squared multiple correlations for parcels.

Note. MPAQ = Mother Differential Positive Affective Quality; MSUP = Mother Differential Support; MNAQ = Mother Differential Negative Affective Quality; MFI = Mother Differential Fostering Independence, MNC = Mother Differential Negative

Control; P1 = Parcel 1; P2 = Parcel 2; P3 = Parcel 3. Error terms were omitted. Only significant paths ($p < .05$) are shown.

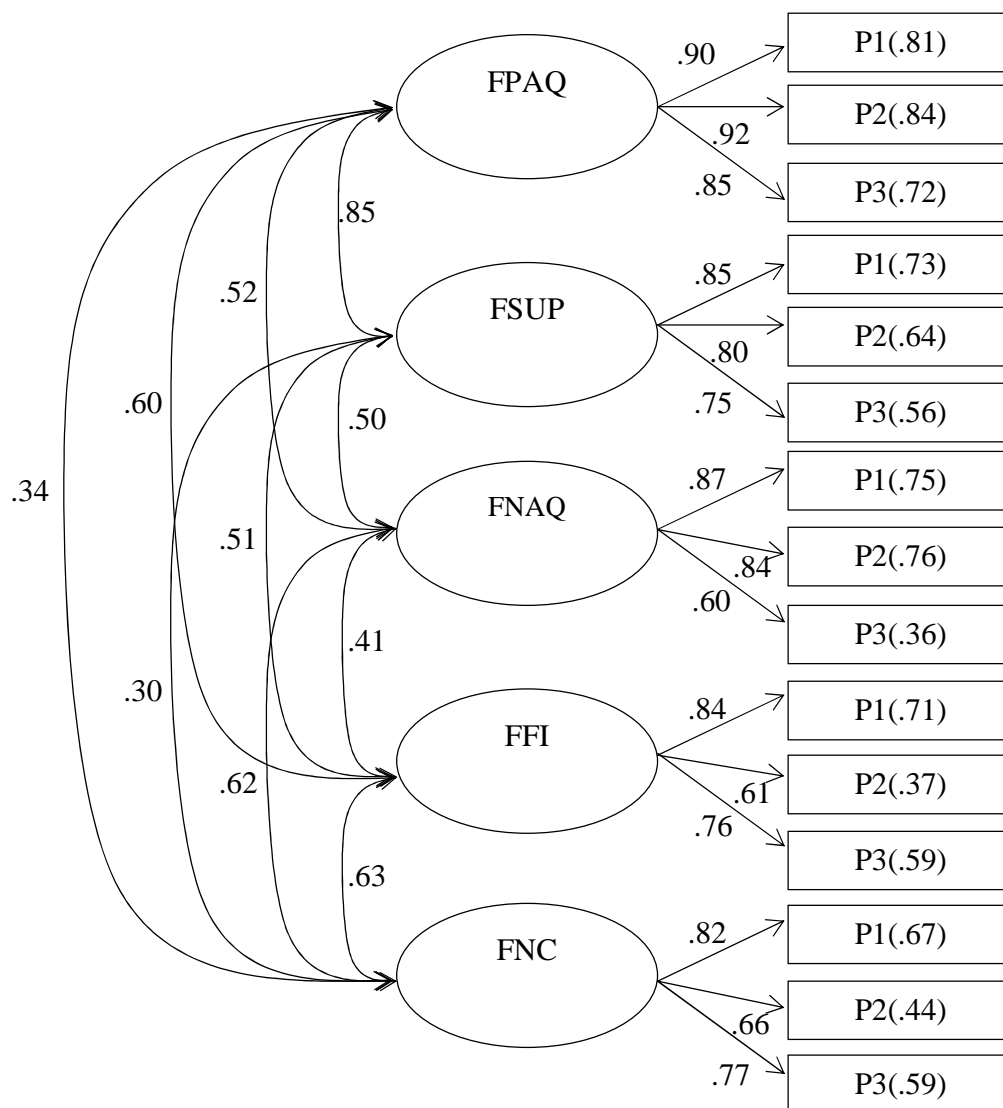


Figure 2. Structural equation modelling (SEM) measurement model used for confirmatory factor analysis of father Parental Differential Treatment Questionnaires (PDT-Q) showing parcel loadings, correlations among factors, and squared multiple correlations for parcels.

Note. FPAQ = Father Differential Positive Affective Quality; FSUP = Father Differential Support; FNAQ = Father Differential Negative Affective Quality; FFI = Father Differential Fostering Independence, FNC = Father Differential Negative Control; P1 = Parcel 1; P2 = Parcel 2; P3 = Parcel 3. Error terms are omitted. All paths significant ($p < .05$).

Table 5: Factor Variances, Standard Errors (S.E.), Critical Ratios (C.R), and Probability (p) Levels for Mother Parental Differential Treatment Questionnaire (PDT-Q)

Factor	Variance	S.E.	C.R.	<i>p</i>
Positive Affective Quality	1.95	.27	7.29	<.001
Support	1.36	.19	7.03	<.001
Negative Affective Quality	1.74	.22	7.91	<.001
Fostering Independence	1.37	.18	7.53	<.001
Negative Control	1.12	.16	6.91	<.001

Note. S.E. = standard error; C.R. = Critical Ratio.

Table 6: Factor Variances, Standard Errors (S.E.), Critical Ratios (C.R), and Probability (p) Levels for Father Parental Differential Treatment Questionnaire (PDT-Q)

Factor	Variance	S.E.	C.R.	<i>p</i>
Positive Affective Quality	3.42	.36	9.44	<.001
Support	1.60	.19	8.35	<.001
Negative Affective Quality	1.39	.17	8.30	<.001
Fostering Independence	1.20	.16	7.79	<.001
Negative Control	.67	.09	7.54	<.001

Note. S.E. = standard error; C.R. = Critical Ratio.

An assessment of univariate and multivariate normality indicated that the data for the mother and father PDT-Q were somewhat in violation of the assumption of normal distribution. For the mother PDT-Q, ten parcels showed significant skewness (critical ratio > 3.27 or < -3.27 , $p < .001$); critical ratios for skewness ranged from -9.50 to 1.51. In addition, 12 parcels had kurtosis values greater than 3; kurtosis values ranged from 1.53 to 9.88). An examination of Mahalanobis' distance for observations farthest from the centroid revealed that 84 observations had $p_2 < .05$, where p_2 represents the probability that the largest squared distance of any observation would exceed the Mahalanobis distance computed. According to Arbuckle (1997), small values of p_2 indicate observations that are improbably far from the centroid under the hypothesis of normality. This result indicates that these observations are quite divergent and that it is unlikely that the largest Mahalanobis' distance would be more divergent. Mardia's coefficient was 211.12, indicating that the data violate the assumption of multivariate normality.

For the father PDT-Q, ten parcels showed significant skewness (critical ratio > 3.27 or < -3.27 , $p < .001$); critical ratios for skewness ranged from -10.41 to 5.41. In addition, 14 parcels had kurtosis values greater than 3; kurtosis values ranged from 2.42 to 17.63). An examination of Mahalanobis' distance for observations farthest from the centroid revealed that 81 observations had $p_2 < .05$. Mardia's coefficient was 251.77, indicating that the data violated the assumption of multivariate normality. As these indicators revealed that the data may violate assumptions of univariate and multivariate normality, results should be interpreted with caution. (It should be noted that

transformations [log, square root, and exp] significantly worsened univariate and multivariate normality. Deletions were not employed due to both theoretical [i.e., possible true non-normal distribution of self-reports of PDT, non-normal distribution due to social desirability biases] and practical reasons [i.e., deletions of outliers led to the emergence of additional outliers and a significant reduction in variability]).

An examination of the model for the mother PDT-Q revealed two non-significant covariances between factors (Negative Control and Positive Affective Quality, $r = .003$, critical ratio = 0.04, $p = .97$; Negative Control and Support, $r = -.037$, critical ratio = -.47, $p = .64$). In order to examine the impact of these non-significant covariances on model fit, another measurement model was assessed in which these paths were trimmed (i.e., constrained to be zero). However, these modifications did not significantly improve model fit, and in fact worsened fit slightly for one fit indicator, so the original paths were left in the model to reflect a priori theoretically-based hypotheses.

For the mother PDT-Q, an examination of the standardized regression coefficients revealed that all parcels loaded significantly and in the expected direction on their corresponding factors. Loadings ranged from .57 to .84, all $ps < .001$. An examination of the correlations among the latent factors revealed that all correlations (except for the two aforementioned non-significant correlations) were significant, ranging from .29 to .82 (all $ps < .001$). The highest correlations were between Positive Affective Quality and Support ($r = .82$), Negative Affective Quality and Negative Control ($r = .70$), Positive Affective Quality and Fostering Independence ($r = .59$), and Negative Control and Fostering Independence ($r = .52$) suggesting that pairs of factors that were most conceptually similar (i.e., assessing differential parenting in either the positive or

negative domain; assessing differential parenting related to positive and negative forms of control) were also those that were most highly correlated.

An examination of the squared multiple correlations for each parcel revealed that the latent factors and their covariances explained a moderate to large proportion of the variance in each parcel. Squared multiple correlations ranged from .32 to .71, indicating that between 32% and 71% of the variance in each parcel was accounted for.

For the father PDT-Q, an examination of the standardized regression coefficients revealed that all parcels loaded significantly and in the expected direction on their corresponding factors. Loadings ranged from .60 to .92, all $ps < .001$. An examination of the correlations among the latent factors revealed that all correlations were significant, ranging from .30 to .85 (all $ps < .001$). The highest correlations were between Positive Affective Quality and Support ($r = .85$), Negative Control and Fostering Independence ($r = .63$), Negative Affective Quality and Negative Control ($r = .62$), and Positive Affective Quality and Fostering Independence ($r = .60$). Once again, this pattern suggests that pairs of factors assessing similar constructs were most highly correlated.

Similar to results for the mother PDT-Q, an examination of the squared multiple correlations for each parcel for the father PDT-Q revealed that the latent factors and their covariances explained a moderate to large proportion of the variance in each parcel. Squared multiple correlations ranged from .36 to .84, indicating that between 36% and 84% of the variance in each parcel was accounted for.

Convergent Validity of PDT-Q

Convergent validity of the PDT-Q was assessed by examining correlations between the PDT-Q and the Sibling Inventory of Differential Experience (SIDE), a well-

validated measure of parental differential treatment. It should be noted that in this study, participants were asked to complete the PDT-Q thinking about current PDT and to complete the SIDE thinking about PDT while they were growing up. Therefore, correlations between these two scales were expected to be lower than if both scales were targeting the same time period.

Correlations between the PDT-Q and the SIDE are presented in four tables: one each for maternal relative PDT (Table 7), paternal relative PDT (Table 8), maternal absolute PDT (Table 9), and paternal absolute PDT (Table 10). Relative PDT refers to the amount of PDT reported by the participant, including whether the participant reported being treated more positively or more negatively than her sibling. Absolute PDT refers to the overall amount of PDT reported by the participant, regardless of which sibling was treated more positively. All correlations for PDT-Q total scores and corresponding SIDE total scores were significant at $p < .001$. Correlations ranged from .49 (for maternal relative PDT) to .74 (for maternal absolute PDT).

PDT-Q subscales were significantly related in the expected direction to SIDE subscales. It should be noted that all relative PDT-Q and SIDE scales and subscales were scored such that higher scores indicate more positive treatment relative to one's sibling, while all absolute PDT-Q and SIDE scales and subscales were scored such that higher scores indicate higher absolute levels of PDT regardless of which sibling was favoured. In general, correlations were highest between PDT-Q and SIDE subscales thought to be conceptually related. For example, the SIDE Affection subscale was most highly correlated with the PDT-Q Positive Affective Quality, Support, and Negative Affective Quality subscales, which is reasonable considering that all of these subscales assess some

facet of differential affective quality in parent-child relationships. The SIDE Control subscale was most highly correlated with the PDT-Q Negative Control and Negative Affective Quality subscales, which is reasonable considering that these subscales all assess differential negativity and/or negative control in parent-child relationships. The SIDE Control subscales were also highly correlated with the PDT-Q Fostering Independence subscales for the absolute PDT condition, which is reasonable considering that these subscales both assess negative and positive forms of parental differential control.

In conclusion, the pattern of correlations among the SIDE scales and subscales and the PDT-Q scales and subscales suggest that these measures assess similar constructs, indicating that the PDT-Q demonstrates good convergent validity.

Table 7: Correlations Between Sibling Inventory of Differential Experience (SIDE) and Parental Differential Treatment Questionnaire (PDT-Q) for Maternal Relative Differential Treatment

	SIDEMC	SIDEMT	PDTQMT	MPAQ	MSUP	MNAQ	MFI	MNC
SIDEMA	.20**	.75**	.50**	.59**	.40**	.27**	.26**	.02
SIDEMC		.80**	.27**	.12	.09	.46**	-.03	.28**
SIDEMT			.49**	.44**	.30**	.48**	.14*	.21**
PDTQMT				.81**	.70**	.67**	.69**	.48**
MPAQ					.69**	.30**	.49**	.01
MSUP						.21**	.32**	-.03
MNAQ							.28**	.55**
MFI								.37**

Note. SIDEMA = SIDE Mother Relative Affection; SIDEMC = SIDE Mother Relative Control; SIDEMT = SIDE Mother Relative Total; PDTQMT = PDT-Q Mother Relative Total; MPAQ = PDT-Q Mother Relative Positive Affective Quality; MSUP = PDT-Q Mother Relative Support; MNAQ = PDT-Q Mother Relative Negative Affective Quality; MFI = PDT-Q Mother Relative Fostering Independence; MNC = PDT-Q Mother Relative Negative Control.

** = $p < .01$; * = $p < .05$

Table 8: Correlations Between Sibling Inventory of Differential Experience (SIDE) and Parental Differential Treatment Questionnaire (PDT-Q) for Paternal Relative Differential Treatment

	FPAQ	FSUP	FNAQ	FFI	FNC	SIDEFC	SIDEFT	SIDEFA
PDTQFT	.88**	.79**	.69**	.69**	.59**	.13*	.57**	.64**
FPAQ		.73**	.45**	.51**	.30**	-.01	.51**	.66**
FSUP			.40**	.39**	.19**	-.04	.41**	.55**
FNAQ				.33**	.49**	.34**	.55**	.45**
FFI					.53**	.09	.31**	.33**
FNC						.23**	.28**	.19**
SIDEFC							.64**	.06
SIDEFT								.80**

Note. PDTQFT = PDT-Q Father Relative Total; FPAQ = PDT-Q Father Relative Positive Affective Quality; FSUP = PDT-Q Father Relative Support; FNAQ = PDT-Q Father Relative Negative Affective Quality; FFI = PDT-Q Father Relative Fostering Independence; FNC = PDT-Q Father Relative Negative Control; SIDEFC = SIDE Father Relative Control; SIDEFT = SIDE Father Relative Total; SIDEFA = SIDE Father Relative Affection.

** = $p < .01$; * = $p < .05$

Table 9: Correlations Between Sibling Inventory of Differential Experience (SIDE) and Parental Differential Treatment Questionnaire (PDT-Q) for Maternal Absolute Differential Treatment

	MAPAQ	MASUP	MANAQ	MAFI	MANC	SIDEMAT	SIDEMAA	SIDEMAC
PDTQMAT	.86**	.85**	.84**	.84**	.83**	.74**	.62**	.60**
MAPAQ		.70**	.63**	.65**	.55**	.66**	.63**	.48**
MASUP			.62**	.61**	.61**	.59**	.52**	.47**
MANAQ				.62**	.70**	.63**	.50**	.55**
MAFI					.70**	.58**	.47**	.50**
MANC						.63**	.46**	.58**
SIDEMAT							.82**	.84**
SIDEMAA								.38**

Note. PDTQMAT = PDT-Q Mother Absolute Total; MAPAQ = PDT-Q Mother Absolute Positive Affective Quality; MASUP = PDT-Q Mother Absolute Support; MANAQ = PDT-Q Mother Absolute Negative Affective Quality; MAFI = PDT-Q Mother Absolute Fostering Independence; MANC = PDT-Q Mother Absolute Negative Control; SIDEMAT = SIDE Mother Absolute Total; SIDEMAA = SIDE Mother Absolute Affection; SIDEMAC = SIDE Mother Absolute Control.

** = $p < .01$; * = $p < .05$

Table 10: Correlations Between Sibling Inventory of Differential Experience (SIDE) and Parental Differential Treatment Questionnaire (PDT-Q) for Paternal Absolute Differential Treatment

	FAPAQ	FASUP	FANAQ	FAFI	FANC	SIDEFAT	SIDEFAA	SIDEFAC
PDTQFAT	.88**	.87**	.81**	.80**	.83**	.70**	.67**	.51**
FAPAQ		.74**	.59**	.61**	.58**	.63**	.68**	.38**
FASUP			.63**	.59**	.62**	.57**	.58**	.37**
FANAQ				.55**	.70**	.65**	.52**	.59**
FAFI					.69**	.54**	.49**	.43**
FANC						.53**	.48**	.43**
SIDEFAT							.88**	.83**
SIDEFAA								.46**

Note. PDTQFAT = PDT-Q Father Absolute Total; FAPAQ = PDT-Q Father Absolute Positive Affective Quality; FASUP = PDT-Q Father Absolute Support; FANAQ = PDT-Q Father Absolute Negative Affective Quality; FAFI = PDT-Q Father Absolute Fostering Independence; FANC = PDT-Q Father Absolute Negative Control; SIDEFAT = SIDE Father Absolute Total; SIDEFAA = SIDE Father Absolute Affection; SIDEFAC = SIDE Father Absolute Control.

** = $p < .01$; * = $p < .05$

Path Analyses Testing Mediation

A series of path analyses was conducted using AMOS 18.0 (SPSS, 2009) to test the hypothesis that attachment security would partially or completely mediate the relations between perceptions of current parental differential treatment and romantic self-concept, sibling relationship quality, and present adjustment. First, zero-order

correlations were examined in order to determine whether perceptions of PDT were significantly correlated with attachment style and whether attachment style was significantly correlated with the outcome variables (see Table 11 for correlations between all predictor and outcome variables). Bootstrapping was used to test for mediation (Hayes, 2009). Contemporary views of the assumptions of mediation analyses suggest that significant zero-order correlations between the predictor variables (i.e., perceptions of PDT) and outcome variables are not required in order to test for mediation (Hayes, 2009). Path analyses were conducted separately for perceptions of paternal and maternal PDT, as previous research has found differences in the effects of mothers' and fathers' PDT on children and adolescents. For each path analysis, control variables found to be significantly related to the outcome variables of interest were entered as predictor variables (see Table 12 for correlations between all control and outcome variables).

Table 11: Correlations Among Predictor and Outcome Variables

	MASQ	ASQT	RSCQ	MCSA	PDTM A	PDTF A	PAQF	PAQM	UM	UF	PDTQ F	PDTQ M
ASRQ	-.24**	-.35*	.22**	.31**	-.37**	-.34**	.29**	.39**	-.23**	-.20**	-.06	.04
MASQ		.50**	-.29**	-.28**	.18**	.19**	-.31**	-.28**	.24**	.25**	-.03	-.14*
ASQ			-.46**	-.25**	.25**	.27**	-.43**	-.37**	.26**	.25**	-.11	-.22**
RSCQ				.17**	-.12	-.07	.28**	.32**	-.21**	-.14*	.10	.19**
MCSA					-.20**	-.17**	.25**	.22**	-.19**	-.14*	-.09	.02
PDTMA						.58**	-.27**	-.49**	.60**	.32**	.07	-.15*
PDTFA							-.53**	-.25**	.35**	.59**	-.13*	-.01
PAQF								.42**	-.25**	-.55**	.36**	.16**
PAQM									-.54**	-.25**	.03	.39**
UM										.49**	.05	-.22**
UF											-.14*	-.11
PDTQF												.13*

Note. ASRQ = Adult Sibling Relationship Questionnaire Total; MASQ = Mood and Anxiety Symptom Questionnaire Total; ASQ = Attachment Style Questionnaire Total; RSCQ = Romantic Self-Concept Questionnaire; MCSA = Marlowe-Crown Social Desirability Scale Total; PDTMA = Parental Differential Treatment Questionnaire Mother Absolute Total; PDTFA = Parental Differential Treatment Questionnaire Father Absolute Total; PAQF = Parental Attachment Questionnaire Father Total; PAQM = Parental Attachment Questionnaire Mother Total; UM = Unfairness Mother Total; UF = Unfairness Father Total; PDTQF = Parental Differential Treatment Questionnaire Father

Relative Total; PDTQM = Parental Differential Treatment Questionnaire Mother Relative Total.

** = $p < .01$; * = $p < .05$

Table 12: Correlations Among Control Variables and Outcome Variables

	B.O.	P.M.S.	R.R.	R.R.#	R.R.C.	Age	S.Dis.	ASRQ	MASQ	ASQ	RSCQ	MCSQ
Sex	-.01	.00	-.05	.05	-.16**	.14*	-.04	.12*	-.03	-.10	.20**	.08
B.O.		.10	.04	-.06	.16**	.00	.04	.02	.03	.07	-.09	-.03
P.M.S.			.01	.05	.11	-.06	.03	.02	-.01	-.03	-.08	.08
R.R.				-.41**	.35**	-.14*	-.00	-.08	.03	.08	-.28**	-.02
R.R.#					-.24**	.37**	-.03	.04	-.15*	-.08	.24**	-.02
R.R.C.						-.12*	-.04	.00	.12*	.09	-.60**	-.05
Age							.03	.07	-.06	-.04	.13*	-.02
S.Dis.								.14*	.02	.05	.02	.02
ASRQ									-.24**	-.35**	.22**	.31**
MASQ										.50**	-.29**	-.28**
ASQ											-.46**	-.25**
RSCQ												.17**

Note. Sex = Participant Sex; B.O. = Birth Order; P.M.S. = Parent Marital Status; R.R. = Lifetime Involvement in Romantic Relationship (Yes/No); R.R.# = Lifetime Number of Romantic Relationships; R.R.C. = Current Involvement in Romantic Relationship (Yes/No); Age = Participant Age; S.Dis. = Sibling Disability (Yes/No); ASRQ = Adult Sibling Relationship Questionnaire Total; MASQ = Mood and Anxiety Symptom Questionnaire Total; ASQ = Attachment Style Questionnaire Total; RSCQ = Romantic Self-Concept Questionnaire Total

** = $p < .01$; * = $p < .05$

Paternal PDT and sibling relationship quality. The first path analysis examined whether attachment style mediated the relation between perceptions of current absolute levels of paternal PDT and sibling relationship quality (see Figure 3). Control variables found to be related to sibling relationship quality and/or attachment style (sibling disability, participant sex, social desirability) were also entered in the path analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 3.24$, $df = 2$, $p = .20$; CMIN/df = 1.62; CFI = .99; RMSEA = .05 (90% CI = .000 - .14). Participant sex and sibling disability status were not significantly related to sibling relationship quality in this path analysis. All other directional paths were statistically significant ($p < .001$).

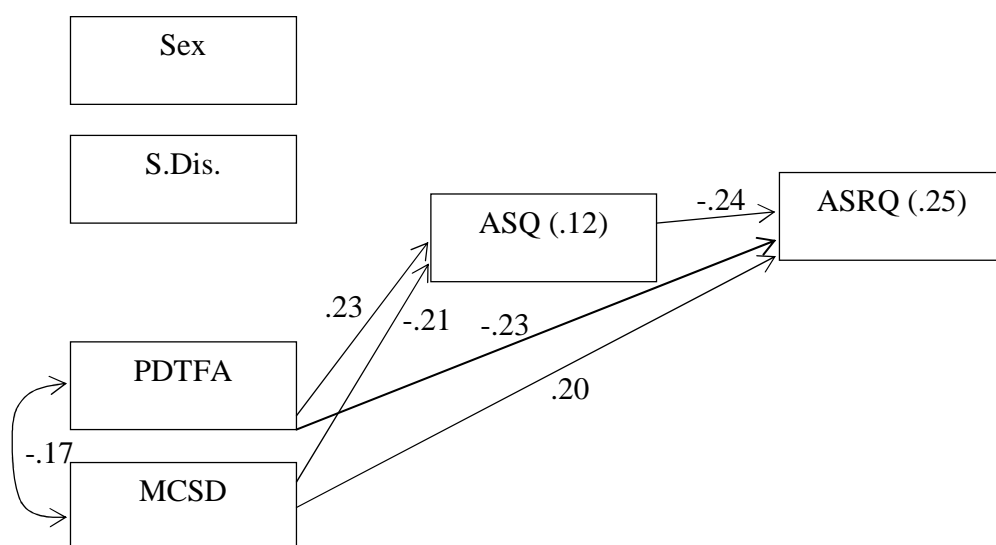


Figure 3. Path model examining attachment style as a mediator of paternal absolute parental differential treatment (PDT) and sibling relationship quality.

Note. S. Dis. = sibling disability; PDTFA = father absolute PDT; MCSD = social desirability; ASQ = attachment insecurity; ASRQ = sibling relationship quality. Error terms are omitted. Only significant paths ($p < .05$) are shown.

In this path analysis, absolute levels of paternal PDT (predictor) were significantly related to attachment style (mediator) ($r = .23$), indicating that higher levels of perceived paternal PDT are related to more attachment insecurity. Second, attachment style (mediator) was significantly related to sibling relationship quality (outcome) ($r = -.24$), indicating that higher levels of attachment insecurity are related to poorer sibling relationship quality. Finally, paternal PDT (predictor) was significantly related to sibling relationship quality (outcome) ($r = -.23$), indicating that higher levels of perceived paternal PDT are related to poorer sibling relationship quality.

In addition, social desirability was significantly related to both attachment style ($r = -.21$) and sibling relationship quality ($r = .20$), indicating that participants who endorsed more socially desirable responses also reported more secure attachment style and more positive sibling relationships. Only one correlation among the predictor variables was significant in this path analysis, that between social desirability and paternal PDT ($r = -.17, p = .005$), indicating that participants who endorsed more socially desirable beliefs also reported lower levels of fathers' PDT. This path model accounted for 25% of the variance in sibling relationship quality, and 12% of the variance in attachment style.

Bootstrapping ($N = 1000$) was used to test for mediation (Hayes, 2009). Partial mediation was found to occur in this path analysis, meaning that the predictor variable and the outcome variable were still significantly related in the model including

attachment style as a mediator. Attachment style partially mediated the relation between paternal PDT and sibling relationship quality. The indirect effect of paternal PDT on sibling relationship quality (through the mediator, attachment style) was $-.05$, $p = .002$. This indicates that higher levels of perceived paternal PDT were related to more attachment insecurity, which, in turn, was related to poorer sibling relationship quality. It should be noted that although this was not the focus of this path analysis, attachment style also mediated the relation between social desirability and sibling relationship quality (indirect effect = $.05$, $p = .003$).

Maternal PDT and sibling relationship quality. The second path analysis examined whether attachment style mediated the relation between perceptions of current absolute levels of maternal PDT and sibling relationship quality (see Figure 4). Control variables found to be related to sibling relationship quality and/or attachment style (sibling disability, participant sex, social desirability) were also entered in the path analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 3.10$, $df = 2$, $p = .21$; $CMIN/df = 1.55$; $CFI = .99$; $RMSEA = .05$ (90% CI = $.000 - .14$). Participant sex and sibling disability status were not significantly related to sibling relationship quality in this path analysis. All other directional paths were statistically significant ($p < .001$).

In this path analysis, maternal PDT (predictor) was significantly related to attachment style (mediator) ($r = .21$), indicating that higher absolute levels of perceived maternal PDT are related to higher levels of attachment insecurity. Second, attachment style (mediator) was significantly related to sibling relationship quality (outcome) ($r = -.24$), indicating that higher levels of attachment insecurity are related to perceptions of

poorer sibling relationship quality. Finally, maternal PDT (predictor) was significantly related to sibling relationship quality (outcome) ($r = -.25$), indicating that higher levels of perceived maternal PDT are related to poorer sibling relationship quality.

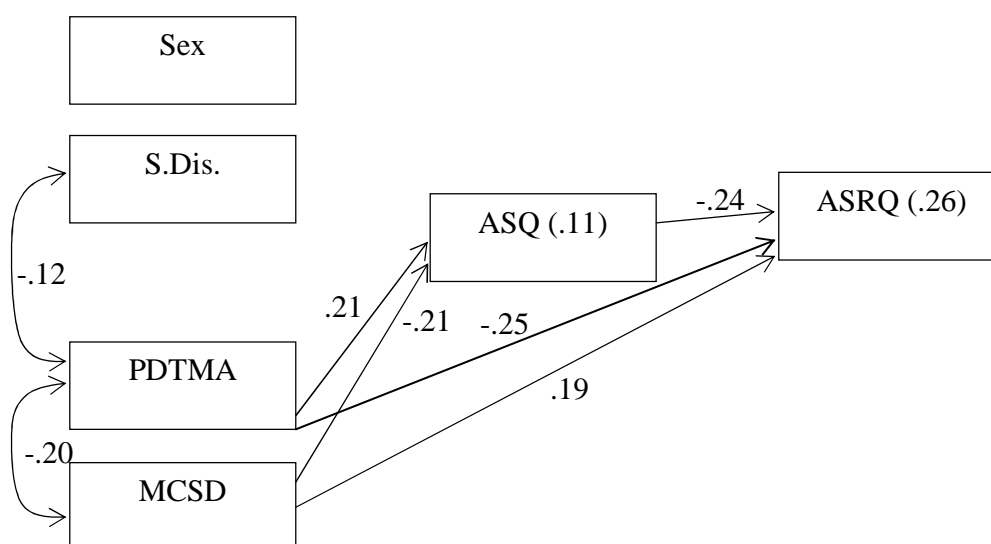


Figure 4. Path model examining attachment style as a mediator of maternal absolute parental differential treatment (PDT) and sibling relationship quality.

Note. S. Dis. = sibling disability; PDTMA = mother absolute PDT; MCSD = social desirability; ASQ = attachment insecurity; ASRQ = sibling relationship quality. Error terms are omitted. Only significant paths ($p < .05$) are shown.

In addition, social desirability was significantly related to both attachment style ($r = -.21$) and sibling relationship quality ($r = .19$), indicating that participants who endorsed more socially desirable responses also reported more secure attachment style and more positive sibling relationships. Two correlations among the predictor variables were significant in this path analysis. Social desirability was significantly related to maternal PDT ($r = -.20$, $p = .001$), indicating that participants who endorsed more socially desirable beliefs also reported lower absolute levels of mothers' PDT. In

addition, sibling disability status was significantly related to perceptions of maternal PDT ($r = -.12, p = .045$), indicating that participants who reported that their sibling had a disability also reported higher absolute levels of mothers' PDT. This path model accounted for 26% of the variance in sibling relationship quality, and 11% of the variance in attachment style.

Bootstrapping ($N = 1000$) was used to test for mediation (Hayes, 2009). Partial mediation was found to occur in this path analysis; attachment style mediated the relation between maternal PDT and sibling relationship quality. The indirect effect of maternal PDT on sibling relationship quality (through the mediator, attachment style) was $-.05, p = .002$. This indicates that higher levels of perceived maternal PDT were related to more attachment insecurity, which, in turn, was related to poorer sibling relationship quality. It should be noted that although this was not the focus of this path analysis, attachment style also mediated the relation between social desirability and sibling relationship quality (indirect effect = $.05, p = .002$).

Maternal relative PDT and adjustment. The third path analysis examined whether attachment style mediated the relation between perceptions of current relative levels of maternal PDT and adjustment (see Figure 5). Control variables found to be related to adjustment and/or attachment style (current romantic relationship status, number of romantic relationships, social desirability) were also entered in the path analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 2.04, df = 2, p = .36$; CMIN/df = 1.02; CFI = 1.00; RMSEA = .01 (90% CI = .00 - .12). Current romantic relationship status was not significantly related to adjustment in this path analysis. In

addition, the direct path between maternal PDT and adjustment was not statistically significant. All other directional paths were statistically significant ($p = .03$ for number of romantic relationships, $p = .001$ for social desirability, all other $ps < .001$).

In this path analysis, maternal PDT (predictor) was significantly related to attachment style (mediator) ($r = -.22$), indicating that individuals who reported being treated relatively more positively than their siblings by their mothers also reported lower levels of attachment insecurity. Second, attachment style (mediator) was significantly related to adjustment (outcome) ($r = .44$), indicating that higher levels of attachment insecurity are related to poorer adjustment. In this path analysis, the direct path between maternal PDT (predictor) and adjustment (outcome) ($r = -.03$) was not statistically significant; however, these two variables were significantly correlated at the zero-order level ($r = -.12, p = .02$), indicating that individuals who reported being treated relatively more positively than their siblings by their mothers also reported better adjustment.

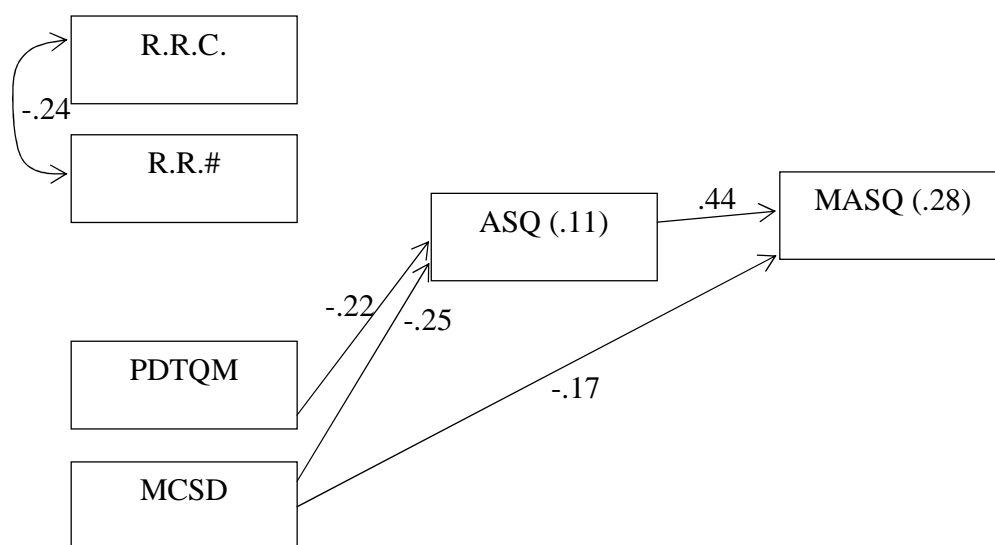


Figure 5. Path model examining attachment style as mediator in relation between maternal relative parental differential treatment (PDT) and adjustment.

Note. R.R.C. = current romantic relationship status; R.R.# = lifetime number of romantic relationships; PDTQM = mother relative PDT; MCSD = social desirability; ASQ = attachment insecurity; MASQ = general adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

In addition, social desirability was significantly related to both attachment style ($r = -.25$) and adjustment ($r = -.17$), indicating that participants who endorsed more socially desirable responses also reported more secure attachment style and better adjustment. Only one correlation among the predictor variables was significant in this path analysis. Current romantic relationship status was significantly related to number of romantic relationships ($r = -.24$, $p < .001$), indicating that participants who were currently in a romantic relationship reported higher numbers of total romantic relationships. This path

model accounted for 28 % of the variance in adjustment, and 11% of the variance in attachment style.

Bootstrapping (N = 1000) was used to test for mediation (Hayes, 2009). Full mediation was found to occur in this path analysis; attachment style completely mediated the relation between maternal PDT and adjustment. The indirect effect of maternal PDT on adjustment (through the mediator, attachment style) was $-.09$, $p = .002$. This indicates that perceptions of being treated more favourably than one's sibling by one's mother were related to lower attachment insecurity, which, in turn, was related to more positive adjustment. It should be noted that although this was not the focus of this path analysis, attachment style also mediated the relation between social desirability and adjustment (indirect effect = $-.11$, $p = .002$).

Maternal absolute PDT and adjustment. The fourth path analysis examined whether attachment style mediated the relation between perceptions of current absolute levels of maternal PDT and adjustment (see Figure 6). Control variables found to be related to adjustment and/or attachment style (current romantic relationship status, number of romantic relationships, social desirability) were also entered in the path analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 3.38$, $df = 2$, $p = .15$; CMIN/df = 1.92; CFI = .99; RMSEA = .06 (90% CI = .00 - .15). Current romantic relationship status was not significantly related to adjustment in this path analysis. In addition, the direct path between maternal PDT and adjustment was not statistically significant. All other directional paths were statistically significant ($p = .03$ for number of romantic relationships, $p = .002$ for social desirability, all other $ps < .001$).

In this path analysis, maternal PDT (predictor) was significantly related to attachment style (mediator) ($r = .21$), indicating that individuals who reported higher absolute levels of maternal PDT also reported more attachment insecurity. Second, attachment style (mediator) was significantly related to adjustment (outcome) ($r = .43$), indicating that higher levels of attachment insecurity are related to poorer adjustment. In this path analysis, the direct path between absolute maternal PDT (predictor) and adjustment (outcome) ($r = .05$) was not statistically significant; however, these two variables were significantly correlated at the zero-order level ($r = .18, p < .001$), indicating that individuals who reported higher absolute levels of maternal PDT also reported poorer adjustment.

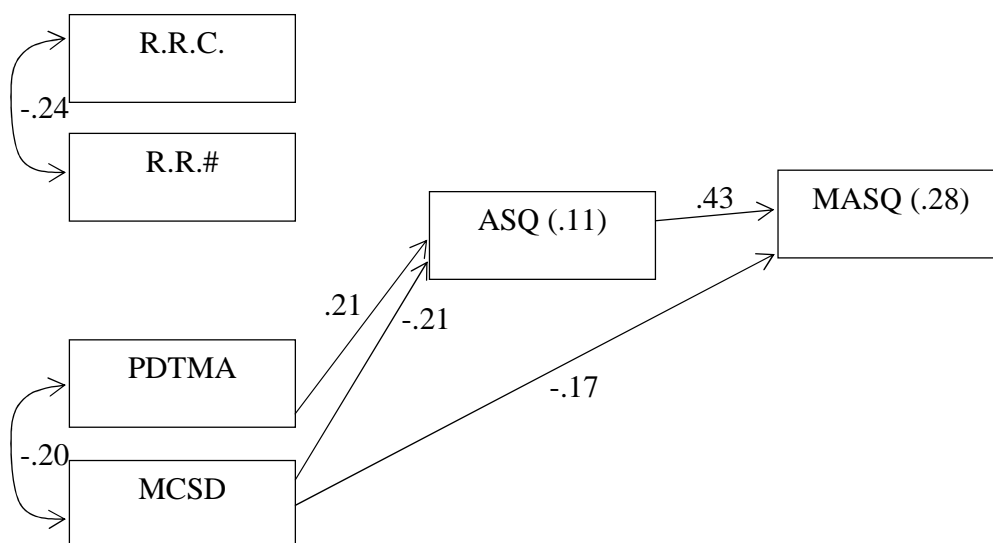


Figure 6. Path model examining attachment style as mediator in relation between maternal absolute parental differential treatment (PDT) and adjustment.

Note. R.R.C. = current romantic relationship status; R.R.# = lifetime number of romantic relationships; PDTMA = mother absolute PDT; MCSD = social desirability; ASQ =

attachment insecurity; MASQ = general adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

In addition, social desirability was significantly related to both attachment style ($r = -.21$) and adjustment ($r = -.17$), indicating that participants who endorsed more socially desirable responses also reported more secure attachment style and better adjustment. Two correlations among the predictor variables were significant in this path analysis. Current romantic relationship status was significantly related to number of romantic relationships ($r = -.24, p < .001$), indicating that participants who were currently in a romantic relationship reported higher numbers of total romantic relationships. In addition, social desirability was significantly related to absolute levels of perceived maternal PDT ($r = -.20, p = .001$); individuals who scored higher on a measure of social desirability reported lower absolute levels of maternal PDT. This path model accounted for 28% of the variance in adjustment, and 11% of the variance in attachment style.

Bootstrapping ($N = 1000$) was used to test for mediation (Hayes, 2009). Full mediation was found to occur in this path analysis; attachment style completely mediated the relation between maternal PDT and adjustment. The indirect effect of maternal PDT on adjustment (through the mediator, attachment style) was $.09, p = .002$. This indicates that perceptions of higher absolute levels of maternal PDT were related to more attachment insecurity, which, in turn, was related to poorer adjustment. It should be noted that although this was not the focus of this path analysis, attachment style also mediated the relation between social desirability and adjustment (indirect effect = $-.09, p = .002$).

Paternal absolute PDT and adjustment. The fifth path analysis examined whether attachment style mediated the relation between perceptions of current absolute levels of paternal PDT and adjustment (see Figure 7). Control variables found to be related to adjustment and/or attachment style (current romantic relationship status, number of romantic relationships, social desirability) were also entered in the path analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 4.79$, $df = 2$, $p = .09$; CMIN/df = 2.40; CFI = .98; RMSEA = .07 (90% CI = .00 - .16). Current romantic relationship status was not significantly related to adjustment in this path analysis. In addition, the direct path between paternal PDT and adjustment was not statistically significant. All other directional paths were statistically significant ($p = .03$ for number of romantic relationships, $p = .002$ for social desirability, all other $ps < .001$).

In this path analysis, paternal PDT (predictor) was significantly related to attachment style (mediator) ($r = .23$), indicating that individuals who reported higher absolute levels of paternal PDT also reported more attachment insecurity. Second, attachment style (mediator) was significantly related to adjustment (outcome) ($r = .43$), indicating that higher levels of attachment insecurity are related to poorer adjustment. In this path analysis, the direct path between absolute paternal PDT (predictor) and adjustment (outcome) ($r = .06$) was not statistically significant; however, these two variables were significantly correlated at the zero-order level ($r = .19$, $p < .001$), indicating that individuals who reported higher absolute levels of paternal PDT also reported poorer adjustment.

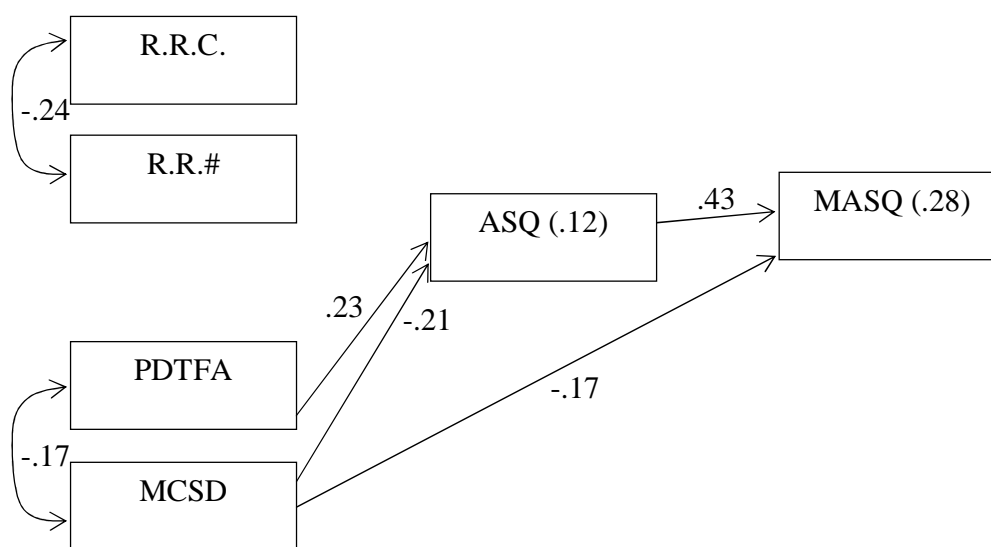


Figure 7. Path model examining attachment style as mediator in relation between paternal absolute parental differential treatment (PDT) and adjustment.

Note. R.R.C. = current romantic relationship status; R.R.# = lifetime number of romantic relationships; PDTFa = father absolute PDT; MCSD = social desirability; ASQ = attachment insecurity; MASQ = general adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

In addition, social desirability was significantly related to both attachment style ($r = -.21$) and adjustment ($r = -.17$), indicating that participants who endorsed more socially desirable responses also reported more secure attachment style and better adjustment. Two correlations among the predictor variables were significant in this path analysis. Current romantic relationship status was significantly related to number of romantic relationships ($r = -.24$, $p < .001$), indicating that participants who were currently in a romantic relationship reported higher numbers of total romantic relationships. In addition, social desirability was significantly related to perceived absolute levels of

paternal PDT ($r = -.17, p = .005$); individuals who scored higher on a measure of social desirability reported lower absolute levels of paternal PDT. This path model accounted for 28% of the variance in adjustment, and 12% of the variance in attachment style.

Bootstrapping ($N = 1000$) was used to test for mediation (Hayes, 2009). Full mediation was found to occur in this path analysis; attachment style completely mediated the relation between paternal PDT and adjustment. The indirect effect of paternal PDT on adjustment (through the mediator, attachment style) was $.10, p = .002$. This indicates that perceptions of higher absolute levels of paternal PDT were related to more attachment insecurity, which, in turn, was related to poorer adjustment. It should be noted that although this was not the focus of this path analysis, attachment style also mediated the relation between social desirability and adjustment (indirect effect = $-.09, p = .003$).

Maternal PDT and romantic relationship adjustment. The sixth path analysis examined whether attachment style mediated the relation between perceptions of current relative levels of maternal PDT and romantic relationship adjustment (see Figure 8). It should be noted that all participants were included in analyses exploring romantic relationship adjustment, even those who reported that they had never been involved in a romantic relationship. This was because the Romantic Self-Concept Questionnaire (RSCQ) assessed participants' views of themselves as potential or actual romantic partners rather than actual experiences in current or past romantic relationships. As such, even participants who had never been involved in a romantic relationship were considered able to complete this measure in a meaningful way.

Control variables found to be related to romantic relationships quality and/or attachment style (age, sex, whether participant had ever been in a romantic relationship, current romantic relationship status, number of romantic relationships, social desirability) were also entered in the path analysis. Due to the large number of parameters being estimated with these numerous control variables, only covariances found to be significant at the zero-order level were estimated in the path model. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 16.09$, $df = 19$, $p = .65$; $CMIN/df = .85$; $CFI = 1.00$; $RMSEA < .001$ (90% CI = .00 - .04). Only four regression paths were statistically significant in this path analysis. Relative levels of maternal PDT were related to attachment style ($r = -.22$, $p < .001$), indicating that participants who perceived being favoured by their mothers relative to their siblings reported more secure attachment style. Social desirability was related to attachment style ($r = -.25$, $p < .001$), indicating that participants who endorsed more socially desirable responses also reported more secure attachment style. Current romantic relationship status was related to romantic relationship adjustment ($r = -.53$, $p < .001$), indicating that participants who reported currently being involved in a romantic relationship endorse more positive romantic relationship adjustment. Finally, attachment style was related to romantic relationship adjustment ($r = -.40$, $p < .001$), indicating that participants endorsing more secure attachment style reported better romantic relationship adjustment.

In this path analysis, maternal PDT (predictor) was significantly related to attachment style (mediator) ($r = -.22$), indicating that individuals who reported being treated relatively more positively than their siblings by their mothers also reported lower

levels of attachment insecurity. Second, attachment style (mediator) was significantly related to romantic relationship adjustment (outcome) ($r = -.40$), indicating that higher levels of attachment insecurity are related to poorer perceived adjustment with respect to romantic relationships. In this path analysis, the direct path between maternal PDT (predictor) and romantic relationship adjustment (outcome) ($r = .04, p = .30$) was not statistically significant; however, these two variables were significantly correlated at the zero-order level ($r = .19, p = .002$), indicating that individuals who reported being treated relatively more positively than their siblings by their mothers also reported higher quality romantic relationships.

Five of the six estimated correlations among the predictor variables were significant in this path analysis. Participant age was significantly related to sex ($r = .11, p = .05$), indicating that female participants were slightly older than male participants. This result is due to the higher proportion of women than men in the community sample, which tended to be older than the university sample. Participant age was significantly related to number of romantic relationships ($r = .35, p < .001$), indicating that older participants reported having had higher numbers of romantic relationships. Sex was significantly related to current romantic relationship status ($r = -.13, p = .02$), indicating that female participants were more likely to report that they were in a romantic relationship at present. Whether participants had ever been in a romantic relationship was related to number of romantic relationships ($r = -.40, p < .001$); participants who endorsed ever having been in a romantic relationship reported higher numbers of romantic relationships. Current romantic relationship status was significantly related to whether participants had ever been in a romantic relationship ($r = .34, p < .001$);

participants who endorsed ever having been in a romantic relationship were more likely to endorse being in a romantic relationship currently. Finally, current romantic relationship status was significantly related to number of romantic relationships ($r = -.20$, $p < .001$), indicating that participants who were currently in a romantic relationship reported higher numbers of total romantic relationships. This path model accounted for 54% of the variance in romantic relationship adjustment, and 11% of the variance in attachment style.

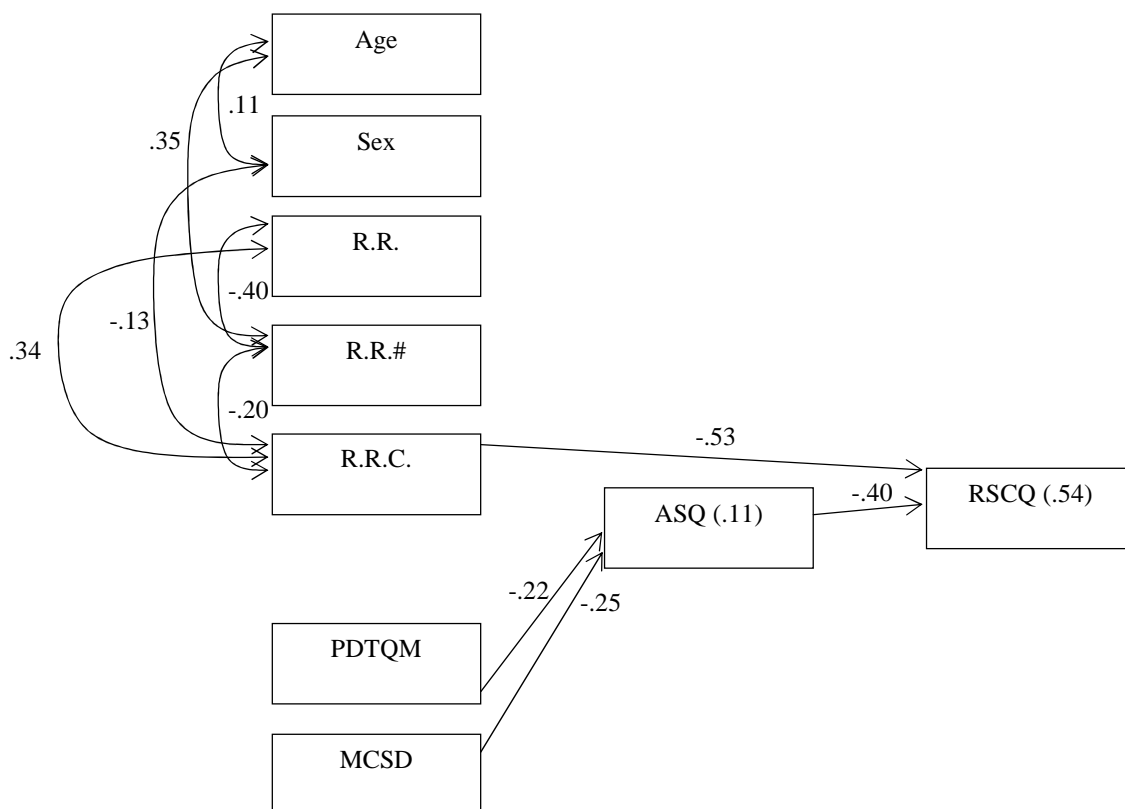


Figure 8. Path model examining attachment style as mediator in relation between maternal relative parental differential treatment (PDT) and romantic relationship adjustment.

Note. R.R. = whether participant has ever been in a romantic relationship; R.R.# = lifetime number of romantic relationships; R.R.C. = current romantic relationship status; PDTQM = mother relative PDT; MCSD = social desirability; ASQ = attachment insecurity; RSCQ = romantic relationship adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

Bootstrapping ($N = 1000$) was used to test for mediation (Hayes, 2009). Full mediation was found to occur in this path analysis; attachment style completely mediated the relation between maternal PDT and romantic relationship adjustment. The indirect effect of maternal PDT on romantic relationship adjustment (through the mediator, attachment style) was $.09$, $p = .002$. This indicates that perceptions of being treated relatively more positively than one's sibling by one's mother were related to less attachment insecurity, which, in turn, was related to more positive romantic relationship adjustment. It should be noted that although this was not the focus of this path analysis, attachment style also mediated the relation between social desirability and romantic relationship adjustment (indirect effect = $.10$, $p = .002$).

PDT, Unfairness, and Parent-Child Relationship Quality

A series of path analyses was conducted to explore the influence of perceived PDT in the context of perceptions of the unfairness of PDT and overall parent-child relationship quality on the outcomes of interest: attachment, adjustment, sibling relationship quality, and romantic relationship adjustment. Path analyses were conducted when PDT was significantly correlated at the zero-order level to the outcome variable of interest. For each path analysis, control variables that were significantly correlated with the outcome variables were included as predictors.

Attachment style. Three path analyses were conducted examining the influence of PDT, unfairness, and parent-child relationship quality on attachment style: one each for maternal relative PDT, maternal absolute PDT, and paternal absolute PDT. For these three path analyses, only one control variable was found to be related to attachment style: social desirability. In order to preserve degrees of freedom, non-significant covariance paths based on zero-order correlations among predictor variables were dropped from the path analyses.

The first path analysis focused on maternal relative PDT (perceptions of being treated better or worse than one's sibling) (see Figure 9). Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = .14$, $df = 1$, $p = .71$; CMIN/df = .14; CFI = 1.00; RMSEA < .001 (90% CI = .00 - .12). In the context of this path analysis, only mother-child relationship quality ($r = -.26$, $p < .001$) and social desirability ($r = -.18$, $p = .001$) were significantly related to attachment style, indicating that participants who reported more positive mother-child relationship quality and more social desirability were likely to endorse a more secure attachment style. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .003$). This path model accounted for 18% of the variance in attachment style.

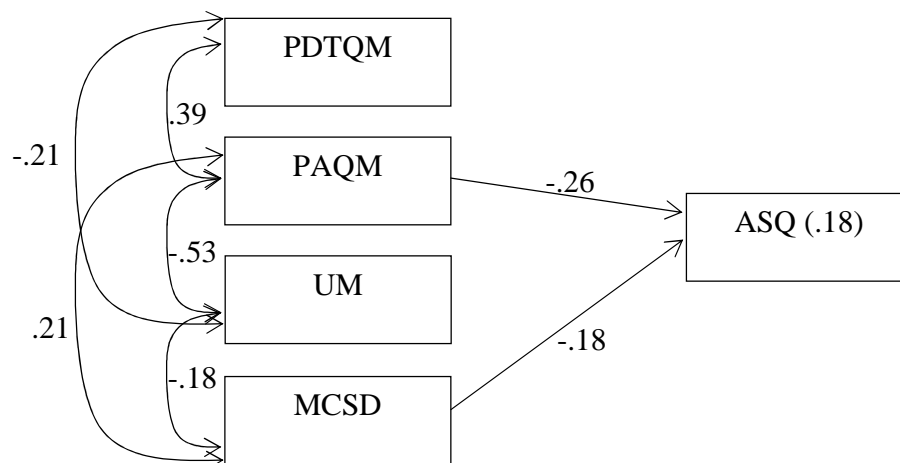


Figure 9. Path model examining maternal relative parental differential treatment (PDT), mother-child relationship quality, and perceived unfairness of maternal PDT as predictors of attachment style.

Note. PDTQM = mother relative PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; ASQ = attachment insecurity. Error terms were omitted. Only significant paths ($p < .05$) are shown.

The second path analysis focused on maternal absolute PDT, or the overall amount of maternal PDT reported by the participant regardless of which sibling was treated in a more positive manner (see Figure 10). In order to preserve degrees of freedom and calculate fit statistics, non-significant regression paths were trimmed from the path analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 1.60$, $df = 2$, $p = .45$; $CMIN/df = .80$; $CFI = 1.00$; $RMSEA < .001$ (90% CI = .00 - .11). As in the previous path analysis, only mother-child relationship quality ($r = -.33$, $p < .001$) and social

desirability ($r = -.18, p = .002$) were significantly related to attachment style, indicating that participants who reported more positive mother-child relationship quality and more social desirability were likely to endorse a more secure attachment style. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .003$). This path model accounted for 17% of the variance in attachment style.

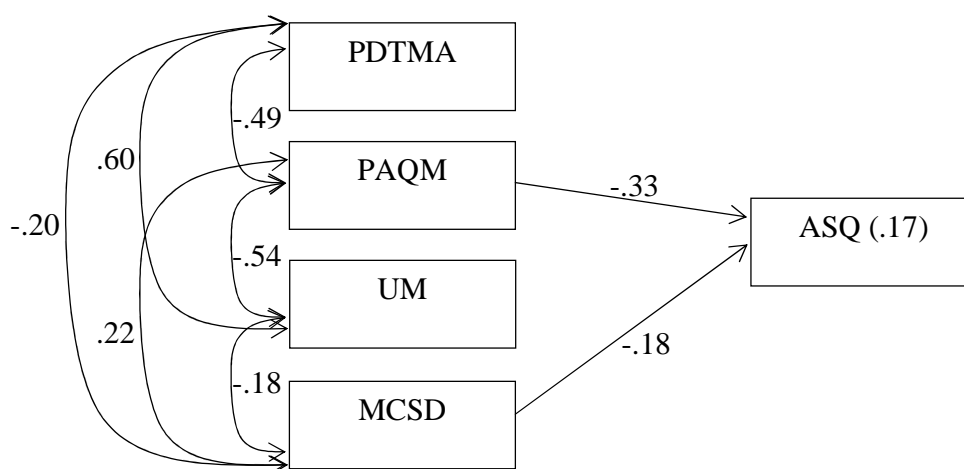


Figure 10. Path model examining maternal absolute parental differential treatment (PDT), mother-child relationship quality, and perceived unfairness of maternal PDT as predictors of attachment style.

Note. PDTMA = mother absolute PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; ASQ = attachment insecurity. Error terms were omitted. Only significant paths ($p < .05$) are shown.

The third path analysis focused on paternal absolute PDT, or the overall amount of paternal PDT reported by the participant regardless of which sibling was treated in a more positive manner (see Figure 11). In order to preserve degrees of freedom and calculate fit statistics, non-significant regression paths were trimmed from the path

analysis. Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = .71$, $df = 2$, $p = .70$; CMIN/df = .36; CFI = 1.00; RMSEA < .001 (90% CI = .00 - .09). Only father-child relationship quality ($r = -.39$, $p < .001$) and social desirability ($r = -.16$, $p = .006$) were significantly related to attachment style, indicating that participants who reported more positive father-child relationship quality and more social desirability were likely to endorse a more secure attachment style. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .023$). This path model accounted for 20% of the variance in attachment style.

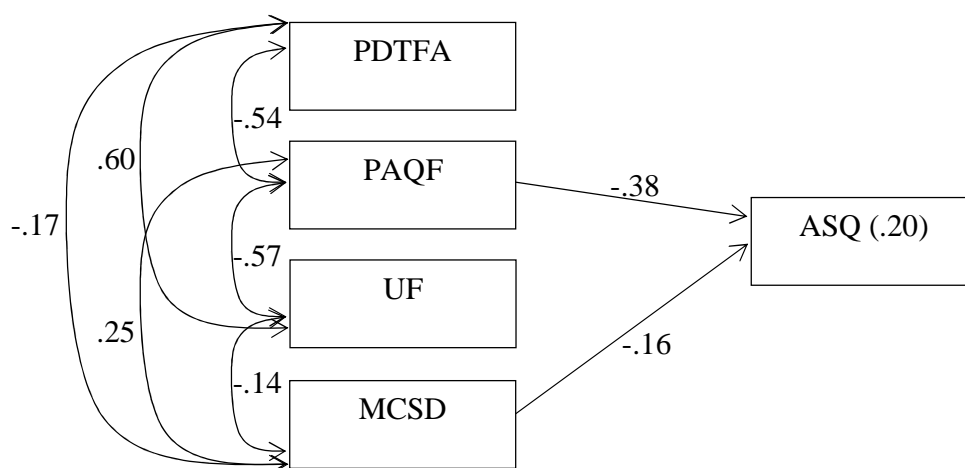


Figure 11. Path model examining paternal absolute parental differential treatment (PDT), father-child relationship quality, and perceived unfairness of paternal PDT as predictors of attachment style.

Note. PDTFA = father absolute PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; ASQ = attachment insecurity. Error terms are omitted. Only significant paths ($p < .05$) are shown.

Sibling relationship quality. Two path analyses were conducted examining the influence of PDT, unfairness, and parent-child relationship quality on sibling relationship quality: one each for maternal absolute PDT and paternal absolute PDT. For these two path analyses, three control variables were found to be related to sibling relationship quality: social desirability, sex, and sibling disability. In order to preserve degrees of freedom, non-significant covariance paths based on zero-order correlations among predictor variables were trimmed from the path analyses.

The first path analysis focused on maternal absolute PDT, or the overall amount of maternal PDT reported by the participant regardless of which sibling was treated in a more positive manner (see Figure 12). Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 3.59$, $df = 6$, $p = .73$; $CMIN/df = .60$; $CFI = 1.00$; $RMSEA < .001$ (90% CI = .00 - .06). Four predictor variables were significantly related to sibling relationship quality in the context of this path analysis: mother-child relationship quality ($r = .27$, $p < .001$), social desirability ($r = .21$, $p < .001$), maternal PDT ($r = -.23$, $p < .001$), and sibling disability ($r = .12$, $p = .03$). These results indicate that participants who reported more positive mother-child relationship quality, more social desirable responding, lower levels of maternal PDT, and a sibling without a disability also reported more positive sibling relationship quality. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .01$), except for the non-significant correlation between perceived unfairness of PDT and sex ($r = -.08$, $p = .12$). This path model accounted for 25% of the variance in sibling relationship quality.

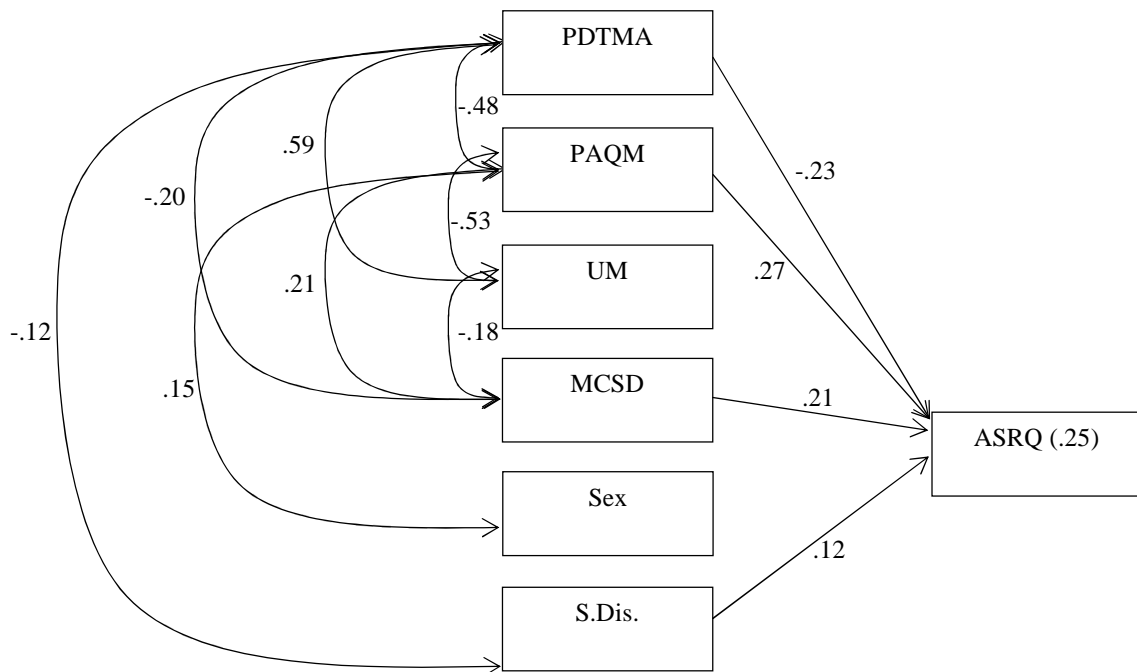


Figure 12. Path model examining maternal absolute parental differential treatment (PDT), mother-child relationship quality, and perceived unfairness of maternal PDT as predictors of sibling relationship quality.

Note. PDTMA = mother absolute PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; S.Dis. = sibling disability; ASRQ = sibling relationship quality. Error terms were omitted. Only significant paths ($p < .05$) are shown.

The second path analysis focused on paternal absolute PDT, or the overall amount of paternal PDT reported by the participant regardless of which sibling was treated in a more positive manner (see Figure 13). Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 4.74$, $df = 9$, $p = .86$; $CMIN/df = .53$; $CFI = 1.00$; $RMSEA < .001$ (90% CI = .00 - .04).

Four predictor variables were significantly related to sibling relationship quality in the context of this path analysis: father-child relationship quality ($r = .14, p = .04$), social desirability ($r = .23, p < .001$), paternal PDT ($r = -.25, p < .001$), and sibling disability ($r = .13, p = .02$). These results indicate that participants who reported more positive father-child relationship quality, more social desirable responding, lower levels of paternal PDT, and a sibling without a disability also reported more positive sibling relationship quality. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .02$). This path model accounted for 20% of the variance in sibling relationship quality.

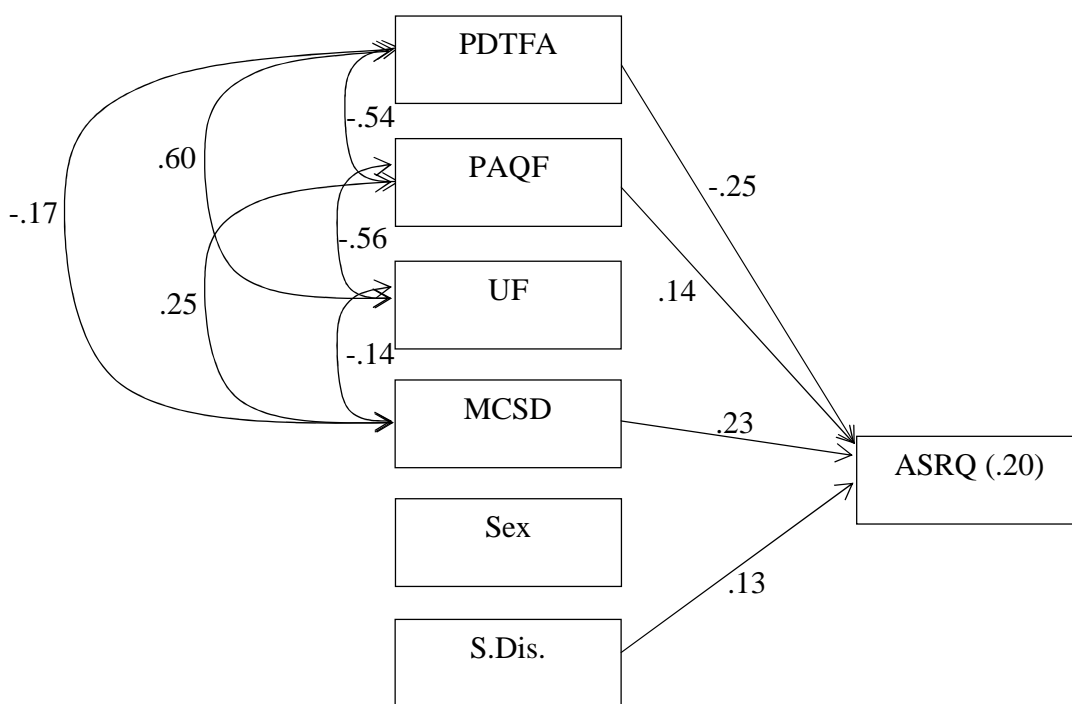


Figure 13. Path model examining paternal absolute parental differential treatment (PDT), father-child relationship quality, and perceived unfairness of paternal PDT as predictors of sibling relationship quality.

Note. PDTFA = father absolute PDT; PAQF = father-child relationship quality; UF = perceived unfairness of father's PDT; MCSD = social desirability; S.Dis. = sibling disability; ASRQ = sibling relationship quality. Error terms were omitted. Only significant paths ($p < .05$) are shown.

Adjustment. Three path analyses were conducted examining the influence of PDT, unfairness, and parent-child relationship quality on adjustment: one each for maternal relative PDT, maternal absolute PDT, and paternal absolute PDT. For these three path analyses, three control variables were found to be related to adjustment: social desirability, current romantic relationship status, and number of romantic relationships. In order to preserve degrees of freedom, non-significant covariance paths based on zero-order correlations among predictor variables were trimmed from the path analyses.

The first path analysis focused on maternal relative PDT (perceptions of being treated better or worse than one's sibling) (see Figure 14). Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 9.14$, $df = 9$, $p = .43$; CMIN/df = 1.02; CFI = 1.00; RMSEA = .01 (90% CI = .00 - .07). In the context of this path analysis, only number of romantic relationships ($r = -.14$, $p = .02$) and social desirability ($r = -.23$, $p = .001$) were significantly related to adjustment, indicating that participants who reported fewer romantic relationships and less social desirability were likely to report poorer adjustment. The relation between mother-child relationship quality and adjustment approached significance ($r = -.14$, $p = .05$), suggesting that more positive mother-child relationships were associated with more positive adjustment. All estimated correlations among the

predictor variables were significant in this path analysis (all $ps \leq .003$). This path model accounted for 16% of the variance in adjustment.

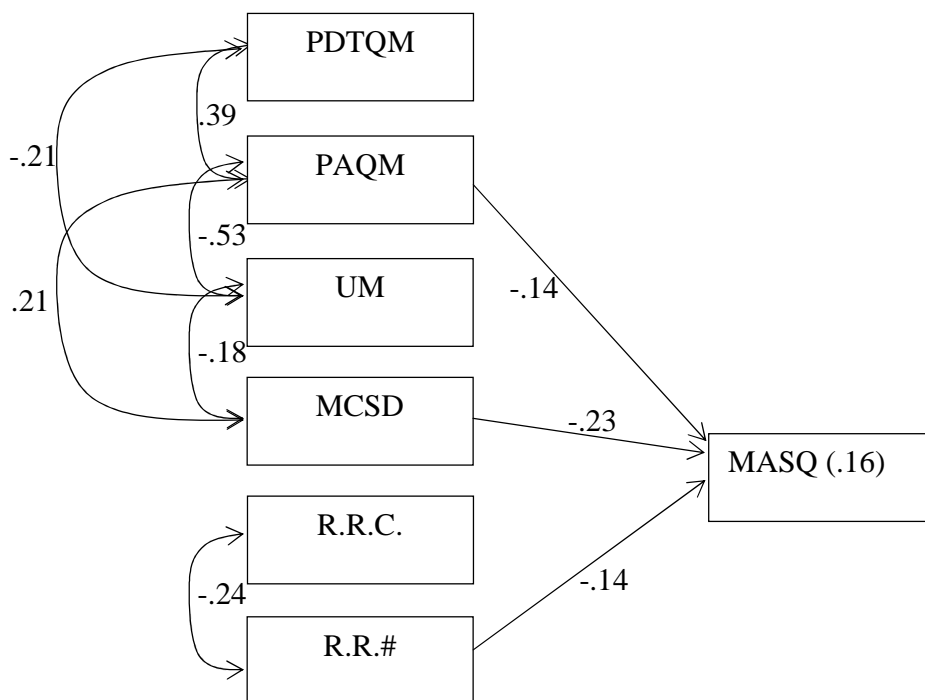


Figure 14. Path model examining maternal relative parental differential treatment (PDT), mother-child relationship quality, and perceived unfairness of maternal PDT as predictors of adjustment.

Note. PDTQM = mother relative PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; R.R.C. = current romantic relationship status; R.R.# = lifetime number of romantic relationships; MASQ = general adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

The second path analysis focused on maternal absolute PDT, or the overall amount of maternal PDT reported by the participant regardless of which sibling was

treated in a more positive manner (see Figure 15). Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 19.37$, $df = 8$, $p = .01$; CMIN/df = 2.42; CFI = .96; RMSEA = .07 (90% CI = .03 - .11). Similar to results of the previous path analysis, number of romantic relationships ($r = -.14$, $p = .01$), social desirability ($r = -.23$, $p < .001$), and mother-child relationship quality ($r = -.15$, $p = .03$) were significantly related to adjustment, indicating that participants who reported a higher number of romantic relationships, more social desirability, and more positive mother-child relationship quality were likely to report more positive adjustment. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .003$). This path model accounted for 16% of the variance in adjustment.

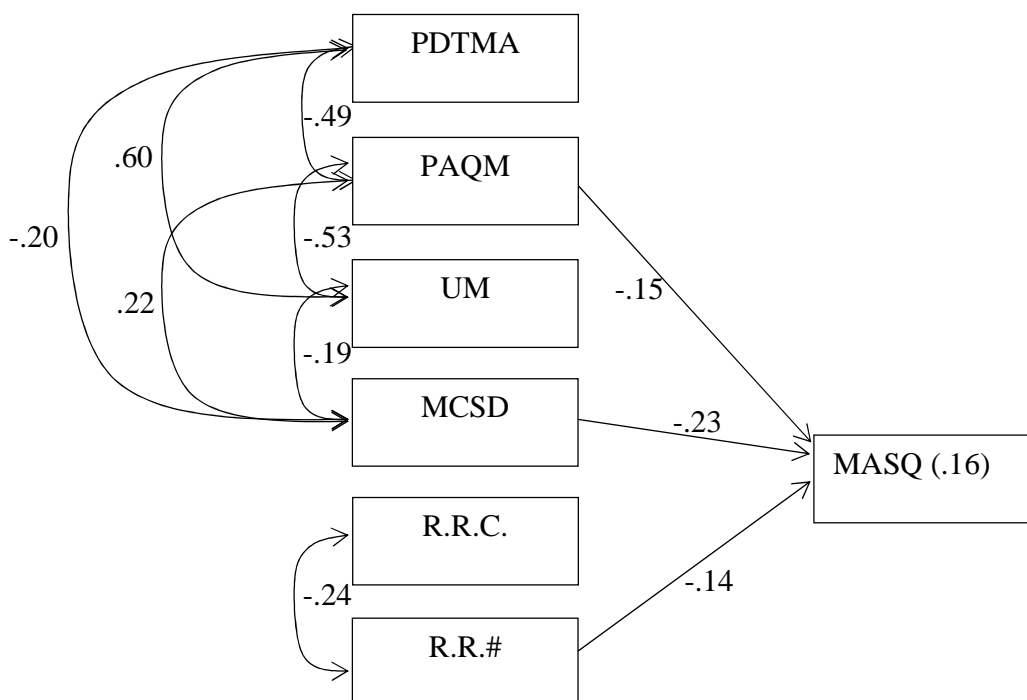


Figure 15. Path model examining maternal absolute parental differential treatment (PDT), mother-child relationship quality, and perceived unfairness of maternal PDT as predictors of adjustment.

Note. PDTMA = mother absolute PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; R.R.C. = current romantic relationship status; R.R.# = lifetime number of romantic relationships; MASQ = general adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

The third path analysis focused on paternal absolute PDT, or the overall amount of paternal PDT reported by the participant regardless of which sibling was treated in a more positive manner (see Figure 16). Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 =$

9.75, $df = 8$, $p = .28$; $CMIN/df = 1.22$; $CFI = .99$; $RMSEA = .03$ (90% CI = .00 - .08).

Number of romantic relationships ($r = -.14$, $p = .02$), social desirability ($r = -.22$, $p < .001$), and father-child relationship quality ($r = -.18$, $p = .01$) were significantly related to adjustment, indicating that participants who reported a higher number of romantic relationships, more social desirability, and more positive father-child relationship quality were likely to report more positive adjustment. All estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .02$). This path model accounted for 18 % of the variance in adjustment.

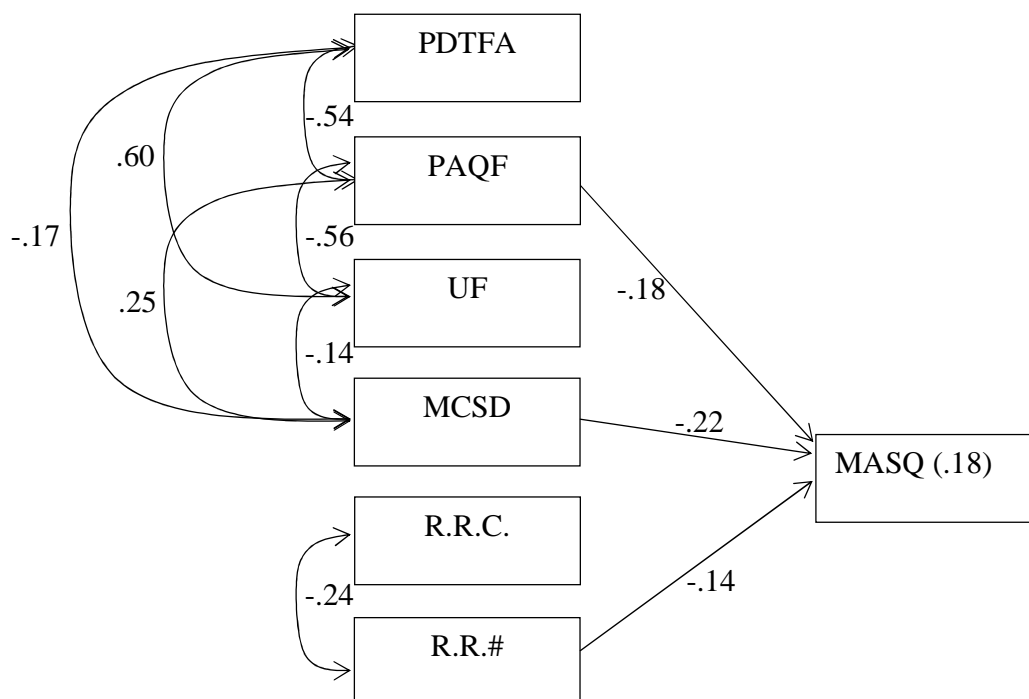


Figure 16. Path model examining paternal absolute parental differential treatment (PDT), father-child relationship quality, and perceived unfairness of paternal PDT as predictors of adjustment.

Note. PDTFA = father absolute PDT; PAQF = father-child relationship quality; UF = perceived unfairness of father's PDT; MCSD = social desirability; R.R.C. = current romantic relationship status; R.R.# = lifetime number of romantic relationships; MASQ = general adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

Romantic relationship adjustment. One path analysis was conducted examining the influence of maternal relative PDT, unfairness, and parent-child relationship quality on romantic relationship adjustment (see Figure 17). For this path analysis, six control variables were found to be related to romantic relationship adjustment: social desirability, whether the participant had ever been in a romantic relationship, current romantic relationship status, number of romantic relationships, sex, and age. In order to preserve degrees of freedom, non-significant covariance paths based on zero-order correlations among predictor variables were trimmed from the path analyses.

Based on widely accepted conventions associated with the fit criteria, the fit statistics for this path analysis indicated good model fit: $\chi^2 = 21.07$, $df = 22$, $p = .52$; CMIN/df = .96; CFI = 1.00; RMSEA < .001 (90% CI = .00 - .05). In the context of this path analysis, only mother-child relationship quality ($r = .22$, $p < .001$), current romantic relationship status ($r = .52$, $p < .001$), and social desirability ($r = .10$, $p = .033$) were significantly related to romantic relationship adjustment, indicating that participants who reported more positive mother-child relationship quality, being in a romantic relationship at present, and higher levels of social desirability were likely to report more positive romantic relationship adjustment. All but three estimated correlations among the predictor variables were significant in this path analysis (all $ps \leq .03$). Correlations

between age and whether participants had ever been in a romantic relationship, age and sex, and sex and perceptions of unfairness of PDT were non-significant. The path model accounted for 44% of the variance in romantic relationship adjustment.

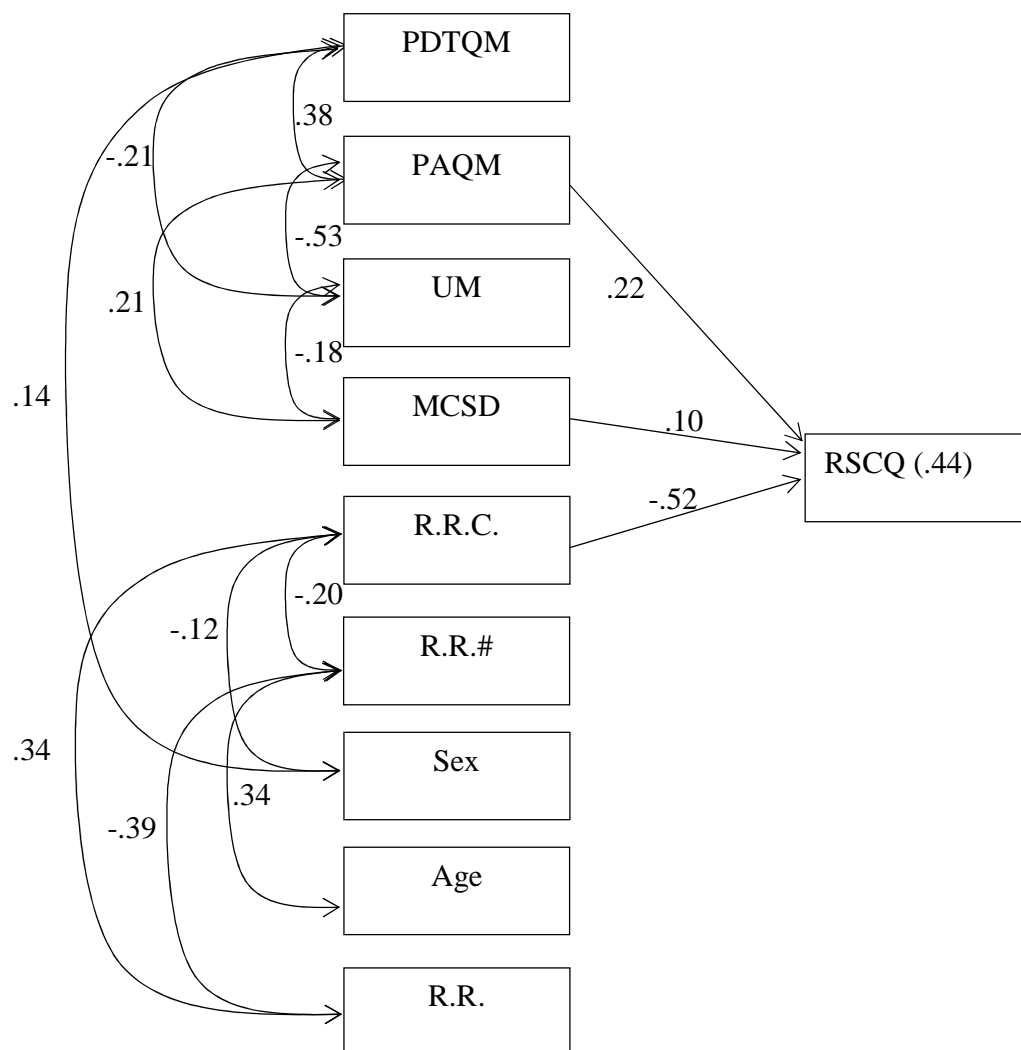


Figure 17. Path model examining maternal relative parental differential treatment (PDT), mother-child relationship quality, and perceived unfairness of maternal PDT as predictors of romantic relationship adjustment.

Note. PDTQM = mother relative PDT; PAQM = mother-child relationship quality; UM = perceived unfairness of mother's PDT; MCSD = social desirability; R.R.C. = current

romantic relationship status; R.R.# = lifetime number of romantic relationships; R.R. = whether participant has ever been in a romantic relationship; RSCQ = romantic relationship adjustment. Error terms were omitted. Only significant paths ($p < .05$) are shown.

Summary

MANOVAs were conducted to assess differences on key variables of interest between males and females and between university students and non-students (for females only). Few differences were found between males and females, and while community and university participants did not differ on variables of interest, they did differ on several control variables. Males and females and university and non-student participants were grouped together for subsequent analyses.

Structural equation modelling was used to evaluate a new measure of PDT focused on assessing PDT in young adulthood, the PDT-Q. This new measure showed good model fit and good correspondence with another widely used measure of PDT, the SIDE.

Results of path analyses revealed that attachment style fully mediated the relations between PDT (mother's relative PDT, mother's and father's absolute PDT) and general adjustment and between PDT (mother's relative PDT only) and romantic relationship adjustment. Attachment style partially mediated the relations between PDT (mother's and father's absolute PDT) and sibling relationship quality. Participants' perceptions of higher levels of PDT, regardless of which sibling was favoured, were associated with more insecure attachment style, poorer sibling relationship quality, and poorer general adjustment. Perceptions of having been disfavoured by mothers compared

to one's sibling were associated with more insecure attachment style and poorer general and romantic relationship adjustment.

Results of path analyses also revealed that despite being significantly associated at the zero-order level with all outcomes, perceived unfairness of PDT did not significantly contribute to outcomes after accounting for the effects of PDT and overall parent-child relationship quality. For sibling relationship quality only, PDT contributed significantly even after accounting for the effects of overall parent-child relationship quality.

Discussion

Research on parents' differential treatment of siblings has generally explored children's and parents' perspectives during childhood and adolescence, while the current study examined young adults' views of this family dynamic. This study considered young adults' perceptions of PDT in the context of their current relationships with their mothers and fathers. As intimate relationships emerge as an important focus during this development phase, the current research also explored how perceptions of PDT were related to young adults' attachment style and attitudes toward romantic relationships.

The ensuing discussion focuses first on the development and evaluation of a new questionnaire, the PDT-Q, which assesses older adolescents' and young adults' perceptions of current PDT in domains salient to parent-child relationships during this developmental period. Second, the implications of the findings of path analyses exploring the mediating role of attachment in the relations among PDT and young adults' general and romantic relationship adjustment and sibling relationship quality are explored. Next, the relative influences of PDT, perceptions of unfairness of PDT

demonstrated to be central in previous research with younger samples, and overall parent-child relationship quality on outcomes in young adulthood are considered. As this study explored potentially sensitive family dynamics, the importance of social desirability biases and the influence of socially desirable responding on the findings of the present study and related research are contemplated. Next, the study's strengths and limitations are considered in order to provide a context in which to interpret the findings. Finally, the applications of the study's findings for clinical practice are presented and possible directions for future research are outlined.

Development of the PDT-Q

One purpose of this study was to develop and evaluate the newly constructed PDT-Q, a 59-item self-report questionnaire assessing perceptions of parental differential treatment designed for use with older adolescents and young adults. The PDT-Q was developed to assess differential parenting in domains particularly salient to this developmental period (e.g., positive and negative affective quality, support, fostering independence, and negative control). Based on young adults' responses regarding their mothers and their fathers on the PDT-Q, reliability analyses revealed good internal consistency (Cronbach's alpha = .89 for mother version, .93 for father version). However, 25% of the mother PDT-Q items and 5% of the father PDT-Q items showed low item-total correlations (below 0.20).

These findings suggest that rather than representing one completely unitary construct, the PDT-Q may be assessing differential parenting in different domains, which may or may not be highly interrelated. Results of the confirmatory factor analysis (discussed further below) provide some support for this notion. As an example, a young

adult may perceive large differences in parental treatment between herself and her sibling in the domain of fostering independence, while also perceiving highly similar treatment in the domain of positive affective quality. It could be speculated that this configuration of parenting might be quite appropriate for a young adult who has a significantly younger sibling still living at home and attending school, since the young adult may require greater levels of fostering independence based on her current developmental level, while both siblings may equally need parent treatment reflecting positive affective quality (e.g., warmth, affection). Although the PDT-Q assesses perceptions of the broader concept of differential parenting, there may be varying degrees of differential parenting depending on the domain of parenting being assessed.

The PDT-Q was proposed to comprise five subscales, based on reviewing existing self-report questionnaires assessing parent-child relationship quality, particularly those focused on late adolescence and young adulthood. The five subscales proposed included Positive Affective Quality, Support, Negative Affective Quality, Fostering Independence, and Negative Control. All five subscales showed moderate to good internal consistency for both the mother and father versions of the PDT-Q.

Furthermore, two confirmatory factor analyses using latent measurement models in SEM showed support for the five proposed subscales for the mother and father versions of the PDT-Q. The models for both the mother-focused and father-focused versions showed moderate to good model fit, and all item parcels loaded significantly and in the expected direction on their corresponding latent factors. However, violations of assumptions of univariate and multivariate normality were found to occur. Kline (1998) reported that statistical simulation studies can provide information about how SEM

model fit may be affected by non-normality in the data. It is suggested that SEM parameter estimates (e.g., path estimates, regression coefficients) are likely to be fairly accurate even under conditions of severely non-normal data. However, significance coefficients (e.g., chi-square values) are expected to be too high. This would mean that the model would appear to fit the data more poorly than it should if it were not for violations of normality, since non-significant chi-square statistics indicate better model fit. The same bias toward Type I error (i.e., rejecting a model for poor fit when it fact it fits the data well and should not be rejected) occurs for other fit statistics beside chi-square (e.g., CFI) when data violate assumptions of normality. For the present study, this means that if the data were perfectly normal, model fit might be somewhat improved, but path coefficients would be expected to remain approximately the same (Kline, 1998).

With these cautions in mind, it appears that despite concerns regarding non-normality, the PDT-Q is a useful measure of young adults' perceptions of PDT that can be meaningfully explored in relation to other psychological and relationship constructs, as path coefficients are expected to be relatively stable despite non-normality (Kline, 1998). However, it appears that the PDT-Q may be measuring a construct (self-report of perceptions of PDT) that is not normally distributed (i.e., large middle of distribution, small tails) either due to the non-normal distribution of the occurrence of PDT or due to socially desirable responding leading to non-normally distributed self-reports (see discussion of social desirability below).

The most commonly used technique for measuring PDT is the self-report questionnaire, most frequently the Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985) (e.g., Rauer & Volling, 2007; Richmond, Stocker, & Rienks,

2005; Tseung & Schott, 2004). Self-report questionnaires have particularly been the method of choice for assessing perceptions of PDT in studies of adolescents (Crouter et al., 1999; Daniels et al., 1985; Henderson et al., 1996; Richmond et al., 2005; Tseung & Schott, 2004; Updegraff et al., 2005; Wolf et al., 1998) and adults (Boll et al., 2003; 2005; Hoffman et al., 2005; Rauer & Volling, 2007). The present study is the first known study to explore the relation between self-reports of PDT and socially desirable responding. The current findings regarding the significant correlations between perceptions of PDT and social desirability suggest that it may be difficult to accurately assess young adults' perceptions of parental differential treatment, as their self-reports in this area may be vulnerable to socially desirable responding. Similar findings regarding vulnerability to social desirability biases have been reported for self-reports of attachment style (Leak & Parsons, 2001) and adjustment (Lanyon, 2004).

There may be a negative connotation attached to differential parenting in society at present, and many respondents may not wish to report that their parents have treated them differently from their siblings in any way. It may not be surprising that these data are not normally distributed, as a large proportion of respondents might be expected to endorse the middle response category ("3 - Same toward both of us") for all or almost all items due to social desirability demands. In the future, possible solutions to address the non-normality of this data may include use of statistical analysis techniques that do not assume normality (e.g., robust weighted least squares) (e.g., Chatterjee & Mächler, 1995).

In the future, a larger sample size would be useful in order to provide more statistical power, resulting in no need for item parcelling. Rather, it would be possible to

examine each item's contribution to its subscale separately. If a shorter version of the scale were desired and a larger sample were available, those items showing weak correlations to their total subscale score could be eliminated. As items were deleted, it would be possible to evaluate whether deletion improved model fit. However, it should be noted that some richness of information would be lost as more items were deleted, particularly if the scale were to be used for clinical as well as research purposes. For the present study, in the interest of retaining as much information about as many facets of PDT as possible, the whole scale was employed. The CFA model could be recomputed, and if required, an estimation procedure even more robust than SEM to violations of assumptions of multivariate normality could be employed (e.g., robust weighted least squares using the statistical software package MPLUS, asymptotic distribution-free estimation method [ADF]). Particularly for ADF, a very large sample would be required (i.e., at least 1000, ideally over 2000 participants).

Providing some confidence in the convergent validity of the newly developed PDT-Q, higher correlations were found between subscales that were more conceptually similar. In particular, subscales reflecting the domain of positive parenting practices were most strongly associated, such as Positive Affective Quality and Support, as were subscales indicating more negative parenting practices, such as Negative Affective Quality and Negative Control. The lowest correlations were found between PDT in the positive domain and PDT in the negative domain of parenting, such as the insignificant associations between Positive Affective Quality and Negative Control and between Support and Negative Control for the mother version of the PDT-Q. These findings suggest that PDT in the positive and PDT in the negative domains of parenting practices,

while both reflecting the broader domain of parental differential treatment, may be largely independent. Parents may engage in differential positive treatment of two siblings either in the presence or the absence of differential negative treatment of the two siblings, suggesting that positive PDT and negative PDT are likely two relatively independent continuous variables. In general, perceptions of parenting were fairly positive in this sample, and a low baseline level of parents' negatively controlling behaviour was reported. Therefore, there would be little opportunity for treating siblings differently in this domain, as the most common response was that parents treated both siblings equally, in this case likely reflecting little or no negative controlling behaviour directed at either sibling.

The PDT-Q was found to show good convergent validity, as it was significantly related to a previously established self-report measure of PDT, the SIDE. The pattern of relationships among the PDT-Q and SIDE full scales and subscales suggest that the PDT-Q is assessing similar constructs to the SIDE; however, the PDT-Q provides information about more domains of PDT, specifically those aspects of PDT thought to be particularly salient in late adolescence and young adulthood. Even stronger relationships would be expected if both questionnaires were assessing the same time period, rather than the PDT-Q assessing the present time period and the SIDE assessing recollections of PDT that occurred while participants were growing up, as was the case in the present study. These findings provide preliminary support for the utility of the PDT-Q as a self-report measure for older adolescents and young adults, although additional development and validation will be needed.

Mediating Role of Attachment Style

Though the detrimental effects of PDT have been established, the mechanisms through which PDT may influence outcomes are less clear. Attachment style has received some support as a possible mediator through which PDT may exert its influence (Rauer & Volling, 2007; Sheehan & Noller, 2002)

Sibling relationship quality. In this study, first, attachment style was explored as a potential mediator, or explanatory path, in the relationship between perceptions of parental differential treatment (PDT) and sibling relationship quality. For both maternal and paternal absolute levels of PDT, or perceived differential treatment regardless of which sibling was reported to receive better treatment, attachment style partially mediated the relationship between PDT and quality of the sibling relationship. This result suggests that greater amounts of PDT occurring in a family, regardless of which sibling is being treated more positively, are related to more insecure attachment style for offspring, which in turn are related to perceptions of poorer quality sibling relationships. However, consistent with results of previous research (Noller, 2005; Tseung & Schott, 2004; Updegraff, Thayer, Whiteman, Denning, & McHale, 2005; Volling, 2003), there also appears to be a direct relationship between PDT and sibling relationship quality, in that higher overall levels of maternal and paternal PDT are directly related to perceptions of lower quality sibling relationships.

Relative levels of PDT, or perceptions of which sibling was treated more positively in a family, were not correlated with perceptions of sibling relationship quality in this study. It may be that perceptions of receiving substantially more positive parental treatment or substantially more negative parental treatment are both related to poorer

sibling relationship. In the first instance, feelings of guilt about receiving more positive parenting or disparaging views of the more negatively treated sibling may negatively influence sibling relationship quality. In the second instance, poor self-esteem related to receiving more negative parenting or feelings of jealousy toward the favoured sibling may also lead to lower quality sibling relationships. It may be that the most conducive context for the development of positive, caring sibling relationships is the family setting in which all siblings receive similar treatment from parents.

In the path analysis for maternal (but not paternal) PDT, whether one's sibling was reported to have a disability had a small but statistically significant relationship with perceptions of absolute levels of maternal differential treatment. This finding is consistent with previous research reporting higher levels of PDT in families in which one sibling has a disability (McHale & Pawletko, 1992; Quittner & Oipari, 1994). This finding likely reflects the fact that if one sibling has a disability and another does not, the two siblings are likely to have significantly different needs, which lead to different approaches to parenting these two siblings.

In these path analyses, social desirability was found to be related to reports of both attachment style and sibling relationship quality. Participants who endorsed more socially desirable views reported more secure attachment and more positive sibling relationships. In fact, social desirability was found to be significantly related to the outcome variables in all path analyses conducted. Therefore, a separate section will discuss findings related to social desirability in the study as a whole.

Young adults' adjustment. As expected, attachment style also acted as a mediator in the relation between PDT and current psychological adjustment. For absolute levels of

maternal and paternal PDT and for relative levels of maternal PDT, attachment style was found to fully mediate the relationship between PDT and adjustment. The findings for absolute levels of maternal and paternal PDT suggest that higher overall amounts of PDT, regardless of which sibling received more positive parenting, were related to more attachment insecurity, which in turn was related to poorer adjustment, including more symptoms of anxiety and depression and lower positive adjustment. In these two path analyses, there remained no direct relationship between PDT and adjustment once accounting for the influence of attachment style on adjustment.

The finding that overall higher levels of PDT, regardless of which sibling is favoured, are related to poorer adjustment for all children is consistent with some previous research (e.g., Boyle et al., 2004). It may be that perceptions of parents as capable of varying in their ability to provide warm, caring, firm parenting, regardless of which sibling is favoured, leads to internalized views of others and relationships as inconsistently available or supportive. Even if one is currently the favoured sibling, there may be anxiety about possible future negative treatment, as might be suggested by the relatively more negative treatment received by a sibling. This anxiety may lead to internalized views of the self as not wholly lovable or good, but rather simply deceptively lucky for having escaped negative parental treatment thus far. These somewhat negative internalized views of self, others, and relationships may lead to more insecure attachment. The relationship between insecure attachment style and poorer adjustment is well supported in the research literature on attachment (e.g., Cassidy, 1994; Mikulincer & Shaver, 2007a; Torquati & Raffaelli, 2004).

The finding for relative maternal PDT, or perceptions of which sibling received more positive maternal treatment, also indicated that attachment style fully mediated the relationship between PDT and adjustment. In this path analysis, perceptions that one was treated more positively by one's mother than one's sibling were associated with more secure attachment, which was associated in turn with more positive adjustment. This finding is similar to results of a previous study of PDT, attachment style, and adjustment (Sheehan & Noller, 2002).

This finding suggests that despite the negative effects of higher overall levels of PDT in a family for offspring's attachment style and subsequent adjustment, there may be a buffering effect of perceiving that one is the favoured sibling. For example, receiving consistently warm, caring, firm mothering may be related to more secure attachment style and more positive adjustment even when a sibling is perceived to receive relatively less positive mothering. In addition, there appears to be a well-supported negative effect on attachment insecurity and adjustment for offspring who perceive that they receive more negative mothering than their siblings (e.g., Conger & Conger, 1994; McGuire, Dunn, & Plomin, 1995; Richmond, Stocker, & Rienks, 2005; Shebloski, Conger, & Widaman, 2005; Tarullo, Ronsaville, Brown, & Radke-Yarrow, 1995).

Romantic relationship adjustment. Attachment style also fully mediated the relationship between maternal relative levels of PDT and romantic relationship adjustment. Young adults who perceived that they were treated more positively by their mothers than their siblings reported more secure attachment, which, in turn, was related to more positive romantic relationship adjustment (i.e., feelings of competence and lovability in romantic relationships). This finding is consistent with the findings of many

past studies establishing a robust relationship between attachment style and romantic relationship quality and satisfaction (e.g., Alexandrov et al., 2005; Elizur & Mintzer, 2001; Mikulincer & Shaver, 2007a; Nofle & Shaver, 2006).

However, the finding that relatively more positive maternal treatment was related to more secure attachment style and more positive romantic relationship adjustment stands in contrast with the findings of one previous study. Rauer and Volling (2007) reported that more secure attachment and more positive romantic relationship quality among university students was related to siblings receiving equal parental treatment. In this study (Rauer & Volling, 2007), higher levels of PDT were negatively related to attachment style even for the sibling who was perceived to be treated more positively.

An examination of the zero-order correlations among the variables of interest in the present study provides some clarification of these contrasting findings. Perceptions of higher absolute levels of PDT by both parents (i.e., more PDT regardless of which sibling is favoured) were significantly positively correlated at the zero-order level with attachment insecurity ($r = .25$ for maternal absolute PDT; $r = .27$ for paternal absolute PDT, $ps < .01$). Attachment insecurity, in turn, was significantly negatively correlated at the zero-order level with romantic relationship adjustment ($r = -.46$, $p < .01$). However, absolute levels of PDT were not significantly correlated at the zero-order level with romantic relationship adjustment. Therefore, the requirements to test mediation were not met, as the predictor variable (absolute PDT) was not significantly correlated with the outcome variable (romantic relationship adjustment). Based on this pattern of zero-order correlations, however, one might speculate that indirectly, higher absolute levels of PDT are not conducive to positive romantic relationship adjustment because of their negative

influence on attachment security. In fact, the finding that higher levels of absolute PDT are associated with more insecure attachment is consistent with the findings of Rauer and Volling (2007).

PDT, Unfairness, and Parent-Child Relationship Quality

A series of path analyses was conducted to explore whether perceptions of PDT and the perceived unfairness of PDT would predict attachment style, sibling relationship quality, general adjustment, and romantic relationship adjustment even after accounting for the effects of the overall quality of the parent-child relationship. In contrast to the findings of previous research emphasizing the importance of the perceived fairness of PDT (e.g., Boll et al., 2005; Kowal & Kramer, 1997; Kowal et al., 2006; McHale et al., 2000; McHale et al., 2007), perceived unfairness of PDT did not predict any of the outcome variables of interest when examined in the context of levels of PDT and parent-child relationship quality. Interestingly, perceptions of the unfairness of maternal and paternal PDT were significantly correlated at the zero-order level with increased attachment insecurity, more negative sibling relationship quality, and poorer general and romantic relationship adjustment. Perceptions of unfairness of PDT were highly correlated with perceptions of absolute levels of PDT ($r = .60$ for mothers; $r = .59$ for fathers, $ps < .01$), suggesting that for this group of young adults, higher absolute levels of PDT were generally considered to be more unfair. This result suggests that there may not be unique variance accounted for by perceived unfairness in the outcome variables of interest, as any relations perceived unfairness may have with the outcomes appears to be shared with absolute levels of PDT.

Attachment style. Three path analyses explored the relations between different types of PDT (maternal relative PDT and maternal and paternal absolute PDT) and attachment style, also taking into account the effects of parent-child relationship quality, perceived unfairness of PDT, and social desirability, which was significantly related to attachment style. In all three path analyses, only parent-child relationship quality and social desirability significantly predicted attachment style; young adults who reported having more positive current relationships with their parents and who endorsed a more socially desirable response style reported more secure attachment.

This finding is consistent with previous research firmly linking parent-child relationship quality with children's attachment style (e.g., Bowlby, 1969/1982; Mikulincer & Shaver, 2007a). However, this finding is inconsistent with the findings of two past studies linking PDT to attachment style (Rauer & Volling, 2007; Sheehan & Noller, 2002) that did not concurrently explore the effect of PDT and overall parent-child relationship quality on attachment style. It may be the case that overall parent-child relationship quality is the more important determinant of attachment style. In addition, zero-order correlations in the present study reveal a substantial relationship between PDT and overall parent-child relationship quality ($r = .39$ for relative maternal PDT and mother-child relationship quality; $r = -.49$ for absolute maternal PDT and mother-child relationship quality; $r = -.53$ for absolute paternal PDT and father-child relationship quality, all $ps < .001$), suggesting that perceptions of overall parent-child relationship quality are significantly related to perceptions of PDT. Due to the significant relationship between PDT and parent-child relationship quality, PDT may not have explained

significant additional variance in attachment style beyond what can be attributed to overall parent-child relationship quality in these path analyses.

Sibling relationship quality. Two path analyses explored the relation between PDT (maternal and paternal absolute PDT) and sibling relationship quality while also controlling for the effects of parent-child relationship quality, perceived unfairness of PDT, and control variables significantly related at the zero-order level to sibling relationship quality (social desirability, whether sibling had a disability). For both maternal and paternal absolute PDT, PDT contributed significantly to sibling relationship quality over and above the significant effects of parent-child relationship quality, sibling disability status, and social desirability. Overall, young adults who reported lower levels of differential parenting and more positive relationships with their parents, whose siblings did not have a disability, and who tended to endorse more socially desirable responses also indicated that they and their sibling had more positive relationships.

This finding suggests that while other predictors may overshadow the impact of differential parenting on attachment style in young adulthood (as well as on general adjustment and romantic relationship adjustment, as will be discussed later), PDT continues to significantly impact the quality of the sibling relationship, and equal treatment of siblings appears to foster the most positive sibling relationships. PDT may be a particularly strong predictor of sibling relationship quality since both are intimately tied to overall family dynamics. While attachment style, general adjustment, and romantic relationship adjustment in young adulthood may be substantially affected by experiences outside the family of origin (e.g., friendships, romantic relationships, academic experiences, negative life events), sibling relationship quality might

understandably be influenced most strongly by the family context in which the sibling relationship occurs. Higher levels of PDT in a family may lead siblings to feel angry, resentful, jealous, or guilty toward each other, leading to less close and/or more conflicted sibling relationships. Other studies have also supported the important role played by PDT in influencing the quality of sibling relationships across the life-span, and have primarily supported the current finding that higher levels of PDT are associated with more negative sibling relationship quality (e.g., Brody, 1998; Dunn & Stocker, 1989; Hoffman, Kiecolt, & Edwards, 2005; Rauer & Volling, 2007; Volling, 2003).

The finding that whether one's sibling has a disability has a small but significant impact on sibling relationship quality may be related to the fact that typically, higher levels of PDT occur in families in which one sibling has a disability (McHale & Pawletko, 1992; Quittner & Oipari, 1994). However, there may be many other reasons that sibling disability is associated with somewhat poorer sibling relationship quality, including less time spent together due to increased needs of sibling with disability and a lack of closeness due to perception of having less in common with a sibling with a disability.

Psychological adjustment. Three path analyses assessed the relation between PDT (maternal relative PDT and maternal and paternal absolute PDT) and general adjustment at present, while also exploring the contributions to adjustment of perceptions of unfairness of PDT, parent-child relationship quality, and control variables (number of lifetime romantic relationships reported by participants, social desirability). The results of all three path analyses were quite similar. Only parent-child relationship quality, number of romantic relationships, and social desirability were significantly associated

with current psychological adjustment (or nearly significantly associated for the relation between mother-child relationship quality and adjustment in the path analysis focused on relative maternal PDT). Young adults who reported more positive parent-child relationships, who had higher numbers of romantic relationships throughout their life, and who responded in a more socially desirable manner indicated that their overall psychological adjustment was more positive. PDT did not contribute significantly to young adults' adjustment over and above the effects of the other predictors.

Similar to the findings for attachment style, this finding may be due to the significant relations between parent-child relationship quality and PDT. As discussed in the earlier section regarding sibling relationship quality, it may also be that in young adulthood, other factors are more important in influencing adjustment than family dynamics such as PDT. Past research has established a connection between more PDT and poorer adjustment for children (e.g., Boyle et al., 2004; Conger & Conger, 1994; McGuire et al., 1995; Richmond et al., 2005; Shebloski et al., 2005; Tarullo et al., 1995); however, most studies do not also account for the effect on adjustment of overall parent-child-relationship quality. However, one past study (Young & Ehrenberg, 2007) did explore PDT in the context of overall parent-child relationship quality, and the finding from the present study is consistent with Young and Ehrenberg's (2007) finding that parent-child relationship quality was related to poorer adjustment over and above the effects of perceptions of PDT, but perceptions of PDT did not relate significantly to adjustment after accounting for the effects of parent-child relationship quality.

The finding that the number of romantic relationships in which a young adult had been involved to date showed a small but significant relationship with current

psychological adjustment was unexpected yet not surprising. It could be speculated that a reciprocal relation may exist between number of romantic relationships and adjustment, in that young adults who are generally well-adjusted (i.e., low levels of depressive and anxious symptoms, high levels of self-esteem) may be more likely to allow themselves to be vulnerable and close enough with others in order to form romantic relationships, and that positive experiences in multiple romantic relationships would lead, in turn, to helpful learning experiences and better adjustment.

Romantic relationship adjustment. One path analysis explored whether maternal relative PDT and perceptions of unfairness of maternal PDT were significantly associated with romantic relationship self-concept and adjustment in young adulthood after accounting for the influence of overall parent-child relationship quality, social desirability, and whether the young adult was presently in a romantic relationship. Only overall mother-child relationship quality, social desirability, and current involvement in a romantic relationship significantly contributed to romantic relationship adjustment. Young adults who reported more positive mother-child relationships, who endorsed more socially desirable responses, and who indicated that they were currently involved in a romantic relationship also endorsed more positive self-concept and adjustment in the context of romantic relationships.

PDT has not been widely studied as a predictor of romantic relationship quality or adjustment. However, results of one past study revealed that increased PDT had a negative effect on romantic relationship adjustment in young adulthood (Rauer & Volling, 2007). Unlike the present study, Rauer and Volling (2007) did not account for the influence of overall parent-child relationship quality on romantic relationship

adjustment. In the present study, the relation between PDT and romantic relationship adjustment was fully mediated by attachment style, suggesting that there may not be a significant direct effect of PDT on romantic relationship adjustment. As for the previously discussed results regarding the impact of PDT on adjustment and attachment style, factors other than PDT may be more salient influences on romantic relationship adjustment in young adulthood, most obviously one's actual experiences in romantic relationships. For example, being currently involved in a romantic relationship had a strong positive effect on romantic relationship adjustment, suggesting that being in a romantic relationship (particularly, it could be speculated, if that relationship is perceived as positive) leads to positive romantic self-concept, including perceptions that one is competent, attractive, and a desirable romantic partner.

Social Desirability

Although social desirability was not a primary focus of the present study, it emerged as one of the most consistent predictors of outcomes including attachment style, general and romantic relationship adjustment, and sibling relationship quality.

To our knowledge, this study is the first to assess perceptions of PDT and social desirability in the same sample. However, our previous findings from a small qualitative study exploring young adults' recollections of their parents' differential treatment while they were growing up point to a similar phenomenon (Young & Ehrenberg, 2007). In this study, a theme emerged that PDT was seen as unacceptable and could not be acknowledged by some participants. For example, when asked about differences in parental treatment while growing up, one participant responded "Oh no – my parents were good parents." The implication that "good parents" do not engage in PDT and the

idealization of equal treatment of children appears to be fairly pervasive in North American society. PDT is typically viewed as negative, while positive or justified instances of PDT are rarely discussed.

In the context of an overall negative societal view of PDT, it is difficult to discern whether self-report questionnaires such as the PDT-Q, which do not assess validity of responding, accurately reflect respondents' true perceptions of PDT occurring in their families. The finding of a significant relationship between more socially desirable responding and lower reports of PDT in the present study suggest that for some respondents, self-reports may not accurately reflect the occurrence of or even the true perceptions of PDT.

In the present study, social desirability was related not only to reported perceptions of PDT, but also to all outcome variables, including attachment style, sibling relationship quality, and general and romantic relationship adjustment. It is difficult to interpret the meaning of this finding, as most psychological studies simply explore the relations among various psychological variables of interest without measuring any potential overall effect of response bias. However, some past research has found relations between social desirability, including impression management (deception of others) and unconscious defensiveness (self-deception), and measures of attachment style (e.g., Leak & Parsons, 2001), as well as between social desirability and self-reported positive adjustment (Lanyon, 2004).

One possible interpretation of this finding is that participants responding in a more socially desirable manner were engaged in positive impression management, or the attempt to deceive others into believing they are better adjusted than they actually feel.

Participants engaging in positive impression management may feel uncomfortable disclosing poor psychological adjustment or difficulties in relationships due to fears of being judged or feelings of shame, guilt, or embarrassment. Positive impression management is considered to be one important reason why participants may respond in a more socially desirable manner (Leak & Parsons, 2001; Li & Bagger, 2006). Another important facet of socially desirable responding is self-deception or defensiveness in responding (Leak & Parsons, 2001; Li & Bagger, 2006). Participants engaging in self-deception may be less conscious of attempting to create a positive image for themselves, rather believing at a conscious level that they truly would endorse the socially desirable responses. Self-deceiving participants may feel a strong need to be “good,” “nice,” or conscientious, and the possibility that they may at times be “bad” or “mean” may be so threatening that it cannot be consciously acknowledged.

Socially desirable responding has frequently been studied in the context of employment personnel selection, due to concerns that job applicants will attempt to present themselves in an overly positive light in order to gain employment. Interestingly, several reviews and meta-analyses on the effect of social desirability on job performance suggest that personality assessment measures influence job performance regardless of levels of social desirability (Li & Bagger, 2006; Ones & Viswesvaran, 1998; Ones, Viswesvaran, & Reiss, 1996). These findings suggest that although social desirability biases may influence participants’ response styles, the relations among predictor and outcome variables are likely still valid. For the findings of the present study, this may mean that relations among predictor, mediator, and outcome variables are still meaningful despite the additional significant influence of social desirability. In addition,

the pull to respond in a socially desirable manner may have been less strong in the present study than in studies of personnel selection, as participants in the present study were not being evaluated for important consequences (e.g., employment).

It is also important to note that study methodology may have some impact on the extent of socially desirable responding. Face-to-face interviews have been found to elicit more socially desirable responding than pencil-and-paper or computerized self-report questionnaires (Richman, Kiesler, Weisband, & Drasgow, 1999). Some findings suggested a small advantage with respect to less socially desirable responding for computerized questionnaires over pencil-and-paper questionnaires if participants were allowed to respond alone, remain anonymous, go back and change answers as they wished (Richman et al., 1999).

Another possible interpretation of socially desirable responding is that it may be adaptive. Perhaps those individuals characterized by higher levels of social desirability are more able to function adaptively and to meet social demands. In this case, perhaps the relationship between a more socially desirable response style and more positive adjustment is a true relationship, in that those who are more able to adapt to social norms may be better able to adjust to life's and society's demands. In fact, some research (e.g., Uziel, 2010) has suggested that positive impression management appears to be associated with personal well-being and interpersonal adjustment. Uziel (2010) has proposed that scales of positive impression management or social desirability be redefined as measures of interpersonally oriented self-control, and that individuals scoring highly on these measures demonstrate high levels of self-control, particularly in social situations (Uziel, 2010). However, it also could be speculated that this socially desirable response style

represents a false picture of adjustment, or a tendency to conform rigidly to social norms or expectations in order to appear well-adjusted on a superficial level. There may be a cost associated with stifling one's genuine sense of identity, creativity, uniqueness, and emotional make-up in order to be seen in socially desirable terms and to appear to be positively adjusted.

Limitations

The nature of the sample imposed several limitations to the present study. The sample included older adolescents and young adults, some of whom were university students and some of whom were non-students recruited from the community. Despite efforts to recruit both students and non-students, this sample is not representative of the Canadian population of older adolescents and young adults. For example, this sample reported being from predominantly lower- to upper-middle class backgrounds and self-reported as predominantly Caucasian. In addition, challenges arose in trying to recruit male community participants, so it is impossible to draw conclusions about differences between male university students and male non-students from the results of this study.

This sample of university students and community participants from higher socioeconomic backgrounds represented a relatively high-functioning group. Participants reported, on average, fairly positive adjustment, fairly low levels of parental differential treatment and perceived unfairness, relatively secure attachment, and relatively positive relationship quality in sibling and romantic relationships. It would be interesting to examine the relationships among these variables in a clinical sample, as participants presenting with mental health concerns might be expected to report more variability in

these domains as well as overall more negative relationship experiences and adjustment and less secure attachment styles.

The size of the sample ($N = 275$) also led to some limitations. This sample size was considered to be adequate for the use of structural equation modeling (SEM), as guidelines for sample size for SEM typically suggest a minimum of 100 participants, with 200-300 being more ideal. However, the present study included complex statistical analyses in which numerous parameters were estimated; the most complex SEM analysis estimated 55 parameters. The sample size of 275 allowed for a ratio of 5 participants per parameter estimated in this most complex analysis. This ratio is considered by some to be the minimum acceptable, and a ratio of 10 participants per parameter is considered to be a more conservative guideline. An increase in the ratio of participants to parameters estimated would likely provide more stable estimates of relations among variables. Although adequate for the purposes of the study, this sample size was too small to use asymptotic distribution-free estimation (ADF), a statistical analytic technique designed to analyze data violating the assumption of multivariate normality. To use this statistical technique, a sample of at least 1000 and preferably over 2000 would have been required. In addition, a larger sample would allow for more refined analysis (e.g., SEM confirmatory factor analysis of the PDT-Q using items rather than parcels, examination of subscales rather than whole scales in path analyses).

The methodology of the study also presented several limitations. The study relies on self-report measures completed by one reporter. This may lead to correlations between variables due to individual differences (e.g., mood of reporter when completing questionnaires, recent life events, recent conflicts or positive interactions with family

members). In addition, self-report measures are vulnerable to individual biases in responding, such as positive impression management or exaggeration of negative aspects of functioning. In fact, the relations among social desirability and all other outcome variables of interest in the present study attest to the strength of such response biases. It would be useful to incorporate other type of measures, such as interviews or observations of interactions in order to reduce the reliance on one common methodology (i.e., self-report measures). In addition, it would be interesting to study the perceptions of multiple family members, including parents and siblings, in order to examine similarities and differences in perceptions of family dynamics, perhaps using families rather than individual as units of analysis (i.e., in cluster analysis).

The present study depicts participants' functioning and relationships at one point in time. Due to the correlational nature of the data, it is impossible to make inferences about causality or about which aspects of family or individual functioning preceded other aspects. In order to draw conclusions about temporal primacy, it would be necessary to conduct a longitudinal study following families over time. This would allow for an examination of the stability of the constructs of interest over time and temporal relationship between variables (e.g., whether earlier parental differential treatment was related to later insecure attachment style, which was in turn related to later more negative sibling and romantic relationship quality).

In the present study, only one measure was used to assess each construct of interest, which meant that results could not be analyzed using structural equation modelling (SEM). SEM requires multiple (typically three or more) indicators for each variable in order to allow for an estimation of common variance (i.e., the "true"

construct) and an estimation of error variance. In future research, using multiple measures for each variable would allow for the use of SEM and error estimation.

Finally, this study employed the same sample to develop and evaluate a new self-report measure of perceptions of parental differential treatment, the PDT-Q, as well as to test hypotheses using this newly developed measure. As such, it is likely that the current study's findings have benefited from the same sample variance, and cross-validation of the PDT-Q in further samples will be needed.

Clinical Implications

Although it was not the primary focus of the study, results showed that the tendency to present oneself in a socially desirable manner was related to all of the outcomes of interest (i.e., attachment style, general adjustment, sibling relationship quality, and romantic relationship adjustment). This finding may have implications for psychological assessment, for measurement of psychological intervention outcomes, and for research examining the effectiveness of various types of psychotherapy.

In psychological assessments, clients are typically asked to complete self-report questionnaires assessing various aspects of psychological functioning. This is frequently done soon after the client meets the assessing psychologist, and before a strong, trusting therapeutic relationship can be firmly established. In addition, clinical interviews are usually employed in psychological assessment to gain additional information and to build rapport. Based on the results of the present study, it is likely that for some clients, responses on self-report questionnaires will be influenced by social desirability biases. This would mean that clients may minimize their concerns or not acknowledge the presence of psychological symptoms or difficulties. Although this study's findings do

not directly assess social desirability in open-ended interviews, this bias may also influence clients' responses in clinical interviews, as clients may feel uncomfortable disclosing information that is perceived to be embarrassing or shameful to a professional they have only recently met. It appears that it would be important in psychological assessments to use self-report questionnaires that include validity scales assessing the tendency toward socially desirable responding. Personality assessment measures employing such validity scales include the Minnesota Multiphasic Personality Inventory, 2nd Edition (MMPI-2), the Personality Assessment Inventory (PAI), and the Millon Clinical Multiaxial Inventory, 3rd Edition (MCMI-3).

Social desirability biases may also influence clients' responses to brief questionnaires used to assess progress in psychotherapy at regular intervals, such as the Beck Depression Inventory, 2nd Edition (BDI-II) and the Beck Anxiety Inventory (BAI). Such self-report questionnaires typically do not include measures of validity, so are particularly vulnerable to socially desirable responding. Once a trusting therapeutic relationship has been established, it may not be as difficult for clients to acknowledge psychological difficulties. However, social desirability biases may still influence clients' responses due to a desire to please their therapist by improving, a desire to be seen as good, compliant therapy clients, or a desire to believe and demonstrate that they are not so psychologically unhealthy that these therapy techniques that they are being told are effective would not work for them. It seems that it would be important for therapists to encourage open communication about what is working or not working for clients throughout therapy. Framing this discussion in such a way that the client feels he or she has permission to say that therapy is not helping if this is his or her perception would be

crucial. For example, therapists might discuss with clients the therapists' genuine desire to work with the clients in the most helpful way possible, and they might emphasize that honest feedback from the clients would be welcomed, not taken personally, and used to improve the therapy whenever possible.

Similar concerns regarding the impact of social desirability biases on clients' reports of their psychological functioning and progress in therapy could arise in psychotherapy research evaluating the effectiveness of various forms of therapy. Even in studies utilizing no-treatment control groups, it could be difficult to ascertain whether treatment gains could be attributed to treatment effectiveness or to social desirability biases (e.g., wanting to appear to be a good therapy client, wanting to please the treating clinician or avoid offending the treating clinician). Again, it would be important to use outcome measures that include validity scales assessing social desirability response biases, and it would also be important to encourage research participant clients to be open and honest about how they perceive the treatment they are receiving and their progress.

Another consistent finding of the present study is the relationship of attachment style to outcomes in young adulthood, including general well-being, relationships with family members, and adjustment in romantic relationships. The mediating effects of attachment style between PDT and the outcome variables suggest that attachment style can be influenced by family dynamics and that it is a strong predictor of other outcomes. This finding seems to underscore the importance of developing and employing psychological interventions designed to increase attachment security in parents, infants, children, adolescents, and adults, as increases in attachment security could have widespread positive effects in other domains of functioning.

Efforts to prevent attachment insecurity in new generations may include psychotherapy with expecting parents or parents of infants. Early intervention may include psychological treatments designed to increase secure attachment between infants or young children and their caregivers. In later childhood or adolescence, family therapy may be used to help families in which a child is presenting with psychological difficulties, since improving attachment relationships within the family is likely to have broad and long-lasting positive effects, not just for the child who has been identified as the patient, but also for parents and other siblings. For adults presenting with psychological problems for individual therapy, forms of psychotherapy focusing on the therapeutic relationship (e.g., interpersonal, psychodynamic therapies) may be particularly beneficial.

The findings of the present study suggest that clinicians working with families may wish to assess family members' perceptions of PDT, as PDT appears to contribute to family dynamics, particularly sibling relationship quality, as well as siblings' adjustment. The newly developed PDT-Q might be useful for assessing perceptions of PDT in families with adolescent or young adult children, as it is designed to assess salient aspects of parent-child relationships in this developmental period. Clinicians may wish to use the full version of the PDT-Q when they believe that PDT may be a significant issue or contributor to difficulties in a family, as the full version provides the most detailed clinical picture. However, a shorter version of the PDT-Q could be developed in the future for use as a brief screener by clinicians or in research as part of a comprehensive battery of self-report assessment measures.

The use of the PDT-Q by therapists working with families may also allow for conversations among families about PDT if this has previously not been openly discussed. Presenting the questionnaire as a normal part of psychological assessment may allow family members to feel that PDT is a normal phenomenon occurring in families, and that it may be positive at times or negative at other times, rather than viewing PDT as a secret or shameful parenting practice. Having discussions in therapy comparing various family members' perspectives about the presence and fairness of PDT may allow family members to hear other members' perspectives and to develop improved understanding of each other and more open communication. A modified version of the PDT-Q could be developed in order to assess parents' perceptions of PDT in addition to the perceptions of siblings.

The importance of positive parent-child relationship quality, including warmth, support, and low levels of negative control, for later outcomes in adolescence and young adulthood is emphasized by the findings of the present study. When exploring the effects of PDT, perceived fairness of PDT, and parent-child relationship quality on outcomes of interest (adjustment, sibling relationship quality, romantic relationship adjustment), the most consistently important predictor was the presence of good quality parent-child relationships. This finding is reminiscent of Winnicott's (1965) concept of the "good enough" parent, a caregiver who is not perfect but is consistently warm, supportive, firm, and responsive enough to the child's needs to promote healthy child development. Similarly, it might be the case that in family environments characterized by consistently positive parent-child relationships, children may be buffered from the potential negative effects of PDT or perceived unfairness of PDT. These children may feel secure in the

context of their generally positive relationships with their parents and able to tolerate some differences in parental treatment between siblings and some instances of perceived unfair treatment. These findings suggest that psychological interventions focusing on the development of strong, warm, supportive bonds between parents and children may have a particularly strong effect on positive future outcomes.

Directions for Future Research

Ideally, a longitudinal study following families over time would be conducted beginning when siblings were in early childhood and continuing until siblings reached adulthood. Multiple methods of collecting data (e.g., self-report questionnaires, parent-report questionnaires, unstructured qualitative interviews, structured interviews such as the Adult Attachment Interview, observations of sibling interactions and parent-child interactions) and multiple reporters (children, parents, teachers) would be incorporated. A large sample would allow for refined statistical analyses, including exploring the relative influences of subdomains for each construct of interest and employing specific statistical techniques for non-multivariate normal data requiring large sample sizes. The use of multiple indicators for each variable would allow SEM to be employed for data analysis, which has an advantage over path analysis used in the current study in that it allows for an estimation of error. A representative sample with respect to ethnicity and socioeconomic status would be ideal for generalizability of results. Including families in which no members had been diagnosed with mental health problems as well as families in which one or more members had received a diagnosis of a mental health problem would allow for comparisons with respect to the importance of different constructs of interest. Further development of the PDT-Q could include testing its applicability to

different samples (e.g., clinical populations), testing additional items, and developing and testing short versions.

Summary and Conclusions

The present study described the development and evaluation of the PDT-Q, a new self-report questionnaire developed to assess older adolescents' and young adults' current perceptions of parental differential treatment. This instrument appears to be a useful new assessment tool for measuring aspects of PDT particularly relevant to this developmental period. In addition, the present study extended findings of previous research regarding the important role of attachment style as a mediator in the relation between PDT and various outcomes for offspring, including general adjustment, sibling relationship quality, and romantic relationship adjustment. It was the first study to examine all of these relations in one sample. Current findings also underscored the particularly significant influence of PDT on the quality of sibling relationships. Despite the limitations of the present study, these findings have implications for clinicians working with children, adolescents, parents, and families and for researchers studying family dynamics and relationships.

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Appendix A: Measures Used in the Present Study

Demographic Information

Your sex: Male / Female

Your date of birth (month/date/year):

Your birth order: (1 means you are the first-born child, 2 means you are the 2nd-born, 3 means you are the 3rd born, etc.)

Total number of children in your family (including yourself):

Ethnicity:

SES of family of origin: working class / lower middle class / upper middle class / upper class

Parents' Marital Status: Have your parents ever separated or divorced? Yes / No

If yes, how old were you when your parents separated or divorced?

IMPORTANT: If you have more than one sibling, please answer the questions about the sibling who is closest to you in age.

Your sibling's sex: Male / Female

Your sibling's date of birth (month/date/year):

Your sibling's birth order: (1 means he/she is the first-born child, 2 means he/she is the 2nd-born, 3 means he/she is the 3rd born, etc.)

Does your sibling have a disability? Yes / No

If yes, what type of disability?

Have you ever been involved in a romantic relationship? Yes / No

If yes, how many romantic relationships have you been involved in?

Are you currently involved in a romantic relationship? Yes / No

Sibling Inventory of Differential Experiences (SIDE; Daniels & Plomin, 1985) –

measure of perceptions of past parental differential treatment

These questions are about your and your sibling's relationships with your mother and your father. Please respond to these questions thinking about how things were generally in your family while you were growing up.

If both of you were treated about the same, circle the number "3"

If you were treated a particular way more often, circle "4" or "5," depending on how much more.

If your sibling was treated a particular way more often, circle "2" or "1," depending on how much more.

Example: The first question asks if your mother/father was stricter with you or with your sibling. If she/he was much more strict with you, circle "5." If she/he was much more strict with your sibling, circle "1." If she/he was about the same towards both of you, circle "3."

1. Our mother/father was strict with us (Differential Control DC)
2. Our mother/father was proud of the things we did (Differential Affection DA)
3. Our mother/father enjoyed doing things with us (DA)
4. Our mother/father was sensitive to what we thought or felt (she/he understood us) (DA)
5. Our mother/father punished us for our misbehaviour (DC)
6. Our mother/father showed interest in the things we liked to do (DA)
7. Our mother/father blamed us for what another family member did (DC)

8. Our mother/father tended to favour one of us (DA)

9. Our mother/father disciplined us (for example, punished or scolded) (DC)

1 = Toward my sibling much more

2 = Toward my sibling somewhat more

3 = Same toward both of us

4 = Toward me somewhat more

5 = Toward me much more

Parental Differential Treatment Questionnaire (PDT-Q) (designed for the present study) – measure of perceptions of present parental differential treatment

Often, two siblings in the same family have somewhat different relationships with their parents. These questions are about your relationship with your parents and your sibling's relationship with your parents. They ask you to think about how your parents behave toward you and your siblings. Please respond to these questions thinking about how things are now in your family. **IMPORTANT:** If you have *more than one sibling*, please answer these questions thinking about the sibling who is closest to you in age.

IMPORTANT: If only one parent is living or if your parents are divorced, please respond with reference to your living parent or the parent with whom you feel closer.

1 = Much more for my sibling

2 = A little bit more for my sibling

3 = Same for both of us

4 = A little bit more for me

5 = Much more for me

Positive Affective Quality:

Our parents are proud of us.

Our parents enjoy spending time with us.

Our parents show interest in the things we do.

Our parents are affectionate toward us.

Our parents express to us that they love and care about us.

Our parents have friendly talks with us.

Our parents are cheerful and relaxed when they interact with us.

Our parents joke around and laugh with us.

Our parents give us attention.

Our parents make us feel that we are important to them.

Our parents praise and compliment us.

Our parents are close to us.

Our parents understand our thoughts and feelings.

Our parents talk openly with us.

Our parents admire and respect us.

Our parents think highly of us.

Support:

Our parents help us accomplish our goals.

Our parents support our goals and interests.

Our parents provide us with advice and guidance.

Our parents give us support and encouragement when we have a serious problem or an important decision to make.

Our parents talk to us about our personal problems.

Our parents protect us from danger and difficulty.

Our parents are people in whom we can confide.

Our parents are people we can count on to provide emotional support when we feel troubled.

Our parents help us if we have a problem.

Our parents give us money if we need it.

Our parents understand our problems and concerns.

Our parents accept us no matter what we do.

Negative Affective Quality:

Our parents ignore what we have to say.

Our parents criticize us or our ideas.

Our parents tell us we make them unhappy.

Our parents fail to do things we ask them to do.

Our parents try to make us feel guilty if they think we did something wrong.

Our parents blame us for something another family member did.

Our parents are too busy to help us.

Our parents are disappointed in us.

Our parents get into arguments or disagreements with us.

Our parents get angry at us.

Our parents shout at us.

Fostering Independence:

Our parents respect our privacy.

Our parents are people to whom we can express differences of opinion on important matters.

Our parents provide us with the freedom to experiment and learn things on our own.

Our parents trust us.

Our parents have confidence in us.

Our parents respect our judgment and decisions, even if different from what they would want.

Our parents ask us for our opinion on things.

Our parents respect our opinions.

Our parents do things for us that we could do for ourselves. (reverse scored)

Negative Control:

Our parents try to control the things we do.

Our parents try to change things about us.

Our parents are less friendly toward us when we disappoint them.

Our parents make important decisions that affect us without checking with us first.

Our parents threaten to do something that will upset us if we don't follow their advice.

Our parents tell us not to question their decisions.

Our parents whine or nag us to get us to do what they want.

Our parents insist that we have to do what they tell us.

Our parents give us advice whether or not we want it.

Our parents restrict our freedom or independence.

Our parents impose their ideas and values on us.

Our parents treat us like we are younger children.

Perceived Fairness of Parental Differential Treatment (Kowal, Krull, & Kramer, 2004) – measure of respondents' perceptions of whether past (SIDE) and present (PDT-Q) PDT was/is fair or unfair

For each question, please think about whether you NOW believe that the way your mother/father treated you compared to how he/she treated your sibling in this particular area was FAIR or UNFAIR? For example, if your mother/father treated you both similarly, was this FAIR or UNFAIR? Or, if your mother/father treated you differently from how he/she treated your sibling, was this FAIR or UNFAIR?

Participants were asked to circle FAIR or UNFAIR for each item on the SIDE and the PDT-Q.

Parental Attachment Questionnaire (Kenny, 1987) – measure of general quality of respondents' current relationships with their parents.

The following pages contain statements that describe family relationships and the kinds of feelings and experiences frequently reported by young adults. Please respond to each item by filling in the number on a scale of 1 to 5 that best describes your parents, your relationship with your parents, and your experiences and feelings. Please provide a single rating to describe your parents and your relationship with them. If only one parent is living or if your parents are divorced, respond with reference to your living parent or the parent with whom you feel closer.

1 = Not at all (0-10%)

2 = Somewhat (11-35%)

3 = A Moderate Amount (36-65%)

4 = Quite a Bit (66-90%)

5 = Very Much (91-100%)

In general, my parents...

1. are people I can count on to provide emotional support when I feel troubled.
2. support my goals and interests.
3. live in a different world.
4. understand my problems and concerns.
5. respect my privacy.
6. restrict my freedom or independence.
7. are available to give me advice or guidance when I want it.
8. take my opinions seriously.
9. encourage me to make my own decisions.
10. are critical of what I can do.
11. impose their ideas and values on me.
12. have given me as much attention as I have wanted.
13. are persons to whom I can express differences of opinion on important matters.
14. have no idea what I am feeling or thinking.
15. have provided me with the freedom to experiment and learn things on my own.
16. are too busy or otherwise involved to help me.
17. have trust and confidence in me.
18. try to control my life.
19. protect me from danger and difficulty.
20. ignore what I have to say.
21. are sensitive to my feelings and my needs.

22. are disappointed in me.
23. give me advice whether or not I want it.
24. respect my judgment and decisions, even if different from what they would want.
25. do things for me that I could do for myself.
26. are persons whose expectations I feel obligated to meet.
27. treat me like a younger child.

During recent visits or time spent together, my parents were persons...

28. I looked forward to seeing.
29. with whom I argued.
30. with whom I felt relaxed and comfortable.
31. who made me angry.
32. I wanted to be with all the time.
33. toward whom I felt cool and distant.
34. who got on my nerves.
35. who aroused feelings of guilt and anxiety.
36. to whom I enjoyed telling about the things I have done and learned.
37. for whom I felt a feeling of love.
38. I tried to ignore.
39. to whom I confided my most personal thoughts and feelings.
40. whose company I enjoyed.
41. I avoided telling about my experiences.

Following time spent together, I leave my parents...

42. with warm and positive feelings.

43. feeling let down and disappointed by my family.

When I have a serious problem or an important decision to make...

44. I look to my family for support, encouragement, and/or guidance.

45. I seek help from a professional, such as a therapist, college counselor, or clergy.

46. I think about how my family might respond and what they might say.

47. I work it out on my own, without help or discussion with others.

48. I discuss the matter with a friend.

49. I know that my family will know what to do.

50. I contact my family if I am not able to resolve the situation after talking it over with my friends.

When I go to my parents for help...

51. I feel more confident in my ability to handle the problems on my own.

52. I continue to feel unsure of myself.

53. I feel that I would have obtained more understanding and comfort from a friend.

54. I feel confident that things will work out as long as I follow my parents' advice.

55. I am disappointed with their response.

Twenty-five items are reverse-scored: 3, 6, 10, 11, 14, 16, 18, 20, 22, 23, 25, 26, 27, 29,

31, 33, 34, 35, 38, 41, 43, 47, 52, 53, 55). Affective quality of relationship items are as

follows: 1, 2, 4, 14, 16, 20, 21, 22, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41,

42, 43, 52, 53, 55. Parents as facilitators of independence items are as follows: 5, 6, 8, 9,

10, 11, 13, 15, 17, 18, 23, 24, 25, 27). Parents as source of support items as follows: 3, 7,

12, 19, 39, 44, 46, 47, 48, 49, 50, 51, 54.

Attachment Style Questionnaire (Feeney, Noller, & Hanrahan, 1994) – measure of

dimensions of attachment in adulthood

Show how much you agree with each of the following items by rating them on this scale.

1 = Totally Disagree

2 = Strongly Disagree

3 = Slightly Disagree

4 = Slightly Agree

5 = Strongly Agree

6 = Totally Agree

1. Overall, I am a worthwhile person.
2. I am easier to get to know than most people.
3. I feel confident that other people will be there for me when I need them.
4. I prefer to depend on myself rather than other people.
5. I prefer to keep to myself.
6. To ask for help is to admit that you're a failure.
7. People's worth should be judged by what they achieve.
8. Achieving things is more important than building relationships.
9. Doing your best is more important than getting on with others.
10. If you've got a job to do, you should do it no matter who gets hurt.
11. It's important to me that others like me.
12. It's important to me to avoid doing things that others won't like.
13. I find it hard to make a decision unless I know what other people think.
14. My relationships with others are generally superficial.
15. Sometimes I think I am no good at all.

16. I find it hard to trust other people.
17. I find it difficult to depend on others.
18. I find that others are reluctant to get as close as I would like.
19. I find it relatively easy to get close to other people.
20. I find it easy to trust others.
21. I feel comfortable depending on other people.
22. I worry that others won't care about me as much as I care about them.
23. I worry about people getting too close.
24. I worry that I won't measure up to other people.
25. I have mixed feelings about being close to others.
26. While I want to get close to others, I feel uneasy about it.
27. I wonder why people would want to be involved with me.
28. It's very important to me to have a close relationship.
29. I worry a lot about my relationships.
30. I wonder how I would cope without someone to love me.
31. I feel confident about relating to others.
32. I often feel left out or alone.
33. I often worry that I do not really fit in with other people.
34. Other people have their own problems, so I don't bother them with mine.
35. When I talk over my problems with others, I generally feel ashamed or foolish.
36. I am too busy with other activities to put much time into relationships.
37. If something is bothering me, others are generally aware and concerned.
38. I am confident that other people will like and respect me.

39. I get frustrated when others are not available when I need them.

40. Other people often disappoint me.

Three items are reverse-scored: 20, 21, 33. The five subscales and their items are presented here. Relationships as secondary: 6, 7, 8, 9, 10, 14, 36. Need for approval: 11, 12, 13, 15, 24, 27, 35. Discomfort with closeness: 4, 5, 16, 17, 20, 21, 23, 25, 26, 34. Preoccupation with relationships: 18, 22, 28, 29, 30, 32, 39, 40. Confidence regarding self and others: 1, 2, 3, 19, 31, 33, 37, 38.

Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991) - measure of general distress, symptoms of anxiety, and positive affect over the past week.

Please indicate the extent to which each of the following statements describe you *during the past week, including today*.

1 = Not at all

2 = A little

3 = Somewhat

4 = Moderately

5 = Extremely

General Distress

1. Felt hopeless

2. Felt dissatisfied with everything

3. Felt depressed

4. Felt worthless

5. Felt like a failure

6. Felt discouraged

7. Felt afraid
8. Was disappointed in myself
9. Felt sad
10. Felt uneasy
11. Felt pessimistic about the future
12. Felt like something awful was going to happen
13. Felt tense or “high-strung”
14. Blamed myself for a lot of things
15. Felt keyed-up, “on-edge”
16. Felt confused
17. Worried a lot about things
18. Felt nervous
19. Felt inferior to others
20. Felt irritable
21. Felt like crying
22. Was unable to relax
23. Felt very restless
24. Had a lump in my throat
25. Had trouble making decisions
26. Had trouble concentrating
27. Had trouble paying attention
28. Got tired or fatigued easily
29. Had trouble staying asleep

30. Had trouble falling asleep
31. Had trouble remembering things
32. Muscles were tense or sore
33. Felt sluggish or tired
34. Did not have much of an appetite
35. Felt nauseous
36. Slept very well (reverse-scored)
37. Had an upset stomach
38. Had diarrhea

Positive Affect

39. Felt really good about myself
40. Felt really “up” or lively
41. Felt confident about myself
42. Felt like I had many interesting things to do
43. Felt really happy
44. Felt like I had a lot of energy
45. Felt optimistic
46. Felt like I had a lot to look forward to
47. Felt successful
48. Was proud of myself
49. Felt very clearheaded
50. Looked forward to things with enjoyment
51. Felt hopeful about the future

52. Thoughts and ideas came to me very easily
53. Felt like I had accomplished a lot
54. Felt like I could do everything I needed to do
55. Felt like I was having a lot of fun
56. Felt really talkative
57. Seemed to move quickly and easily
58. Felt cheerful
59. Was able to laugh easily
60. Felt very alert
61. Felt like being with other people
62. Felt really slowed down (reverse-scored)
63. Felt like nothing was very enjoyable (reverse-scored)
64. Felt like there wasn't anything interesting or fun to do (reverse-scored)
65. Felt like it took extra effort to get started (reverse-scored)
66. Felt unattractive (reverse-scored)
67. Felt withdrawn from other people (reverse-scored)
68. Felt really bored (reverse-scored)
69. Felt like being by myself (reverse-scored)
70. Felt like I didn't need much sleep
71. Thought about death or suicide (reverse-scored)

Anxious Arousal

72. Felt dizzy or light-headed
73. Had hot or cold spells

74. Hands were cold or sweaty
75. Hands were shaky
76. Had a very dry mouth
77. Was trembling or shaking
78. Muscles twitched or trembled
79. Felt numbness or tingling in my body
80. Felt faint
81. Had to urinate frequently
82. Heart was racing or pounding
83. Was short of breath
84. Had trouble swallowing
85. Felt like I was choking
86. Had pain in my chest
87. Felt like I was going crazy
88. Was afraid I was going to lose control
89. Startled easily
90. Was afraid I was going to die

Adult Sibling Relationship Questionnaire (Stocker, Lanthier, & Furman, 1997) –

measure of the quality of the sibling relationship in adulthood

Instructions: This questionnaire is concerned with your relationship with one of your siblings. Each question asks you to rate how much different behaviours and feelings occur in your relationship. Try to answer each question as quickly and accurately as you can. Try to answer the questions as your relationship is now, not how it was in the past,

nor how you think it might be in the future. In the remainder of the questionnaire, whenever you see THIS SIBLING or YOUR SIBLING we are talking about the specific sibling you are completing the study about. We begin by asking you some general questions about your sibling and yourself. Please fill in the correct response.

1 = Hardly at all (or hardly anything)

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

1. How much do you and this sibling have in common?
2. How much do you talk to this sibling about things that are important to you?
3. How much does this sibling talk to you about things that are important to him or her?
4. How much do you and this sibling argue with each other?
5. How much does this sibling think of you as a good friend?
6. How much do you think of this sibling as a good friend?
7. How much do you irritate this sibling?
8. How much does this sibling irritate you?
9. How much does this sibling admire you?
10. How much do you admire this sibling?

1 = I am usually favoured

2 = I am sometimes favoured

3 = Neither of us is favoured

4 = This sibling is sometimes favoured

5 = This sibling is usually favoured

11. Do you think your mother favours you or this sibling more?

12. Does this sibling think your mother favours him/her or you more?

1 = Hardly at all

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

13. How much does this sibling try to cheer you up when you are feeling down?

14. How much do you try to cheer this sibling up when he or she is feeling down?

15. How competitive are you with this sibling?

16. How competitive is this sibling with you?

17. How much does this sibling go to you for help with nonpersonal problems?

18. How much do you go to this sibling for help with nonpersonal problems?

19. How much do you dominate this sibling?

20. How much does this sibling dominate you?

21. How much does this sibling accept your personality?

22. How much do you accept this sibling's personality?

1 = I am usually favoured

2 = I am sometimes favoured

3 = Neither of us is favoured

4 = This sibling is sometimes favoured

5 = This sibling is usually favoured

23. Do you think your father favours you or this sibling more?

24. Does this sibling think your father favours him/her or you more?

1 = Hardly at all

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

25. How much does this sibling know about you?

26. How much do you know about this sibling?

27. How much do you and this sibling have similar personalities?

28. How much do you discuss your feelings or personal issues with this sibling?

29. How much does this sibling discuss his or her feelings or personal issues with you?

30. How often does this sibling criticize you?

31. How often do you criticize this sibling?

32. How close do you feel to this sibling?

33. How close does this sibling feel to you?

34. How often does this sibling do things to make you mad?

35. How often do you do things to make this sibling mad?

36. How much do you think that this sibling has accomplished a great deal in life?

37. How much does this sibling think that you have accomplished a great deal in life?

1 = I usually get more support

2 = I sometimes get more support

3 = We are supported equally

4 = This sibling sometimes gets more support

5 = This sibling usually gets more support

38. Does this sibling think your mother supports him/her or you more?

39. Do you think your mother supports you or this sibling more?

1 = Hardly at all

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

40. How much can you count on this sibling to be supportive when you are feeling stressed?

41. How much can this sibling count on you to be supportive when he or she is feeling stressed?

42. How much does this sibling feel jealous of you?

43. How much do you feel jealous of this sibling?

44. How much do you give this sibling practical advice? (e.g., household or car advice)

45. How much does this sibling give you practical advice?

46. How much is this sibling bossy with you?

47. How much are you bossy with this sibling?

48. How much do you accept this sibling's lifestyle?

49. How much does this sibling accept your lifestyle?

1 = I usually get more support

2 = I sometimes get more support

3 = We are supported equally

4 = This sibling sometimes gets more support

5 = This sibling usually gets more support

50. Does this sibling think your father supports him/her or you more?

51. Do you think your father supports you or this sibling more?

1 = Hardly at all

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

52. How much do you know about this sibling's relationships?

53. How much does this sibling know about your relationships?

54. How much do you and this sibling think alike?

55. How much do you really understand this sibling?

56. How much does this sibling really understand you?

57. How much does this sibling disagree with you about things?

58. How much do you disagree with this sibling about things?

59. How much do you let this sibling know you care about him or her?

60. How much does this sibling let you know he or she cares about you?

61. How much does this sibling put you down?

62. How much do you put this sibling down?

63. How much do you feel proud of this sibling?

64. How much does this sibling feel proud of you?

1 = Our mother is usually closer to me

2 = Our mother is sometimes closer to me

3 = Our mother is equally close to both of us

4 = Our mother is sometimes closer to this sibling

5 = Our mother is usually closer to this sibling

65. Does this sibling think your mother is closer to him/her or you?

66. Do you think your mother is closer to you or this sibling?

1 = Hardly at all

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

67. How much do you discuss important personal decisions with this sibling?

68. How much does this sibling discuss important personal decisions with you?

69. How much does this sibling try to perform better than you?

70. How much do you try to perform better than this sibling?

71. How likely is it you would go to this sibling if you needed financial assistance?

72. How likely is it this sibling would go to you if he or she needed financial assistance?

73. How much does this sibling act in superior ways to you?

74. How much do you act in superior ways to this sibling?

75. How much do you accept this sibling's ideas?

76. How much does this sibling accept your ideas?

1 = Our father is usually closer to me

2 = Our father is sometimes closer to me

3 = Our father is equally close to both of us

4 = Our father is sometimes closer to this sibling

5 = Our father is usually closer to this sibling

77. Does this sibling think your father is closer to him/her or you?

78. Do you think your father is closer to you or this sibling?

1 = Hardly at all

2 = A little

3 = Somewhat

4 = Very much

5 = Extremely much

79. How much do you know about this sibling's ideas?

80. How much does this sibling know about your ideas?

81. How much do you and this sibling lead similar lifestyles?

Subscales and their respective items are as follows: similarity (1, 27, 54, 81); intimacy (2, 3, 28, 29, 55, 56); quarrelling (4, 30, 31, 57, 58); affection (5, 6, 32, 33, 59, 60); antagonism (7, 8, 34, 35, 61, 62); admiration (9, 10, 36, 37, 63, 64); maternal rivalry (11, 12, 38, 39, 65, 66); emotional support (13, 14, 40, 41, 67, 68); competition (15, 16, 42, 43, 69, 70); instrumental support (17, 18, 44, 45, 71, 72); dominance (19, 20, 46, 47, 73, 74); acceptance (21, 22, 48, 49, 75, 76); paternal rivalry (23, 24, 50, 51, 77, 78); knowledge (25, 25, 52, 53, 79, 80). The three higher-order scales and their component subscales are as follows: Warmth (intimacy, admiration, affection, acceptance, similarity, knowledge, support); Conflict (quarrelling, dominance, antagonism, competition); Rivalry

(maternal rivalry, paternal rivalry).

Romantic Self-Concept Questionnaire (Bouchey, 2007) – measure of perceived competence in romantic relationships

The following statements are about your experiences in romantic relationships, both in the past and at present (if applicable). Please indicate how much you agree with each statement is for you.

1 = Disagree completely

2 = Mostly disagree

3 = Disagree a little

4 = Agree a little

5 = Mostly agree

6 = Agree completely

Positive Partner Characteristics

1. I feel that my partners respect me as a person.
2. I experience a pretty equal balance of power in my relationships.
3. I am pleased with how my partners make me feel as a person.
4. I feel that my romantic partners accept me for who I am.
5. I am happy with how my partners think of me.
6. I am pleased with my romantic partners' level of commitment in the relationships.

Maintaining Relationships

7. I am not comfortable being in a long-term relationship. (reverse-scored)
8. I prefer not to be involved in a long-term, committed relationship. (reverse-scored)
9. I have the social skills that allow me to stay in long-term relationships.

10. I am able to stay in relationship with someone I like.

11. I am happy with my own level of commitment in romantic relationships.

12. I put the same amount of effort into my relationships as my partners do.

Communication

13. I am not very comfortable sharing personal information with my partners. (reverse-scored)

14. I find it easy to tell my partners what I like or need.

15. I have a hard time communicating with my romantic partners. (reverse-scored)

16. I find it easy to talk with my romantic partners.

17. I find it hard to have romantic relationships. (reverse-scored)

Romantic Appeal

18. I feel that others my age will be romantically attracted to me.

19. I feel that if I am romantically interested in someone, that person will like me back.

20. I feel that I am fun and interesting on a date.

21. I am able to please my partners in a physical/sexual way.

22. I usually don't go out with people I would really like to date. (reverse-scored)

23. I am not dating the people I am really attracted to. (reverse-scored)

Sexual Competence

24. I feel that I could benefit from more sexual experience. (reverse-scored)

25. I am happy with the amount of sexual activity I engage in.

26. I feel that I could use more knowledge about sex. (reverse-scored)

Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) – measure of tendency to respond in a socially desirable manner; socially desirable responses are

indicated for each item

1. Before voting I thoroughly investigate the qualifications of all the candidates. T
2. I never hesitate to go out of my way to help someone in trouble. T
3. It is sometimes hard for me to go on with my work, if I am not encouraged. F
4. I have never intensely disliked anyone. T
5. On occasion I have had doubts about my ability to succeed in life. F
6. I sometimes feel resentful when I don't get my way. F
7. I am always careful about my manner of dress. T
8. My table manners at home are as good as when I eat out in a restaurant. T
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. F
10. On a few occasions, I have given up doing something because I thought too little of my ability. F
11. I like to gossip at times. F
12. There have been times when I felt like rebelling against people in authority even though I knew they were right. F
13. No matter who I'm talking to, I'm always a good listener. T
14. I can remember "playing sick" to get out of something. F
15. There have been occasions when I took advantage of someone. F
16. I'm always willing to admit it when I make a mistake. T
17. I always try to practice what I preach. T
18. I don't find it particularly difficult to get along with loud-mouthed, obnoxious people. T

19. I sometimes try to get even rather than forgive and forget. F
20. When I don't know something I don't at all mind admitting it. T
21. I am always courteous, even to people who are disagreeable. T
22. At times I have really insisted on having things my own way. F
23. There have been occasions when I felt like smashing things. F
24. I would never think of letting someone else be punished for my wrongdoings. T
25. I never resent being asked to return a favor. T
26. I have never been irked when people expressed ideas very different from my own. T
27. I never make a long trip without checking the safety of my car. T
28. There have been times when I was quite jealous of the good fortune of others. F
29. I have almost never felt the urge to tell someone off. T
30. I am sometimes irritated by people who ask favours of me. F
31. I have never felt that I was punished without cause. T
32. I sometimes think when people have a misfortune they only got what they deserved. F
33. I have never deliberately said something that hurt someone's feelings. T

Appendix B: Measures Used in the Development of the PDT-Q

Note: Items modified and used in the development of the PDT-Q are marked with an asterisk (*) and the PDT-Q item number is indicated.

Sibling Inventory of Differential Experiences (SIDE; Daniels & Plomin, 1985)

1. Our mother/father was strict with us (Differential Control DC)
2. Our mother/father was proud of the things we did (Differential Affection DA) * (Item 1)
3. Our mother/father enjoyed doing things with us (DA) * (Item 2)
4. Our mother/father was sensitive to what we thought or felt (she/he understood us) (DA)
5. Our mother/father punished us for our misbehaviour (DC)
6. Our mother/father showed interest in the things we liked to do (DA) * (Item 3)
7. Our mother/father blamed us for what another family member did (DC) * (Item 34)
8. Our mother/father tended to favour one of us (DA)
9. Our mother/father disciplined us (for example, punished or scolded) (DC)

Colorado Parental Child-Rearing Scale (CPCRS; George & Bloom, 1997)

Factor I – Affection

1. My mother/father was very affectionate with me * (Item 4)
2. My mother/father enjoyed talking things over with me * (Item 6)
3. My mother/father comforted me and helped me when I had troubles * (Item 25)
4. My mother/father was happy when she/he was with me * (Item 31)
5. My mother/father smiled at me very often

Factor II – Punitiveness

1. My mother/father punished me by making me do extra work
2. My mother/father scolded and yelled at me * (Item 39)
3. My mother/father threatened to spank me
4. My mother/father lost her/his temper with me when I didn't help around the house *
(Item 38)
5. My mother/father forbade me to do things I especially enjoyed when I was bad

Factor III – Control

1. My mother/father wouldn't let me roam around because something might happen to me
2. My mother/father worried that I couldn't take care of myself
3. My mother/father worried about me when I was away
4. My mother/father did not approve of my spending a lot of time away from home
5. My mother/father asked me to tell her/him everything that happened when I was away from home

Factor IV – Lax Discipline

1. My mother/father let me off easy when I misbehaved
2. My mother/father was consistent about punishing me when she/he felt I deserved it
(REVERSE SCORED)
3. My mother/father let me get away without doing work she/he told me to do
4. My mother/father found it difficult to punish me
5. My mother/father excused my bad conduct

Parental Attachment Questionnaire (Kenny, 1987)

In general, my parents...

1. are people I can count on to provide emotional support when I feel troubled. * (Item 20, Item 24)
2. support my goals and interests. * (Item 18)
3. live in a different world.
4. understand my problems and concerns. * (Item 13, Item 27)
5. respect my privacy. * (Item 40)
6. restrict my freedom or independence. * (Item 58)
7. are available to give me advice or guidance when I want it. * (Item 19)
8. take my opinions seriously. * (Item 46)
9. encourage me to make my own decisions.
10. are critical of what I can do. * (Item 30)
11. impose their ideas and values on me. * (Item 59)
12. have given me as much attention as I have wanted. (Item 9)
13. are persons to whom I can express differences of opinion on important matters. * (Item 41)
14. have no idea what I am feeling or thinking.
15. have provided me with the freedom to experiment and learn things on my own. * (Item 42)
16. are too busy or otherwise involved to help me. * (Item 35)
17. have trust and confidence in me. * (Item 43, Item 44)
18. try to control my life. * (Item 49)
19. protect me from danger and difficulty. * (Item 22)
20. ignore what I have to say. * (Item 29)

21. are sensitive to my feelings and my needs. * (Item 13)
 22. are disappointed in me. * (Item 36)
 23. give me advice whether or not I want it. * (Item 57)
 24. respect my judgment and decisions, even if different from what they would want. *
(Item 45)
 25. do things for me that I could do for myself. * (Item 48)
 26. are persons whose expectations I feel obligated to meet.
 27. treat me like a younger child. * (Item 60)
- During recent visits or time spent together, my parents were persons...
28. I looked forward to seeing.
 29. with whom I argued.
 30. with whom I felt relaxed and comfortable. * Item 7
 31. who made me angry.
 32. I wanted to be with all the time.
 33. toward whom I felt cool and distant.
 34. who got on my nerves.
 35. who aroused feelings of guilt and anxiety.
 36. to whom I enjoyed telling about the things I have done and learned.
 37. for whom I felt a feeling of love.
 38. I tried to ignore.
 39. to whom I confided my most personal thoughts and feelings. * (Item 13, Item 23)
 40. whose company I enjoyed.
 41. I avoided telling about my experiences.

Following time spent together, I leave my parents...

- 42. with warm and positive feelings.
- 43. feeling let down and disappointed by my family.

When I have a serious problem or an important decision to make...

- 44. I look to my family for support, encouragement, and/or guidance. * (Item 20)
- 45. I seek help from a professional, such as a therapist, college counselor, or clergy.
- 46. I think about how my family might respond and what they might say.
- 47. I work it out on my own, without help or discussion with others.
- 48. I discuss the matter with a friend.
- 49. I know that my family will know what to do.
- 50. I contact my family if I am not able to resolve the situation after talking it over with my friends.

When I go to my parents for help...

- 51. I feel more confident in my ability to handle the problems on my own.
- 52. I continue to feel unsure of myself.
- 53. I feel that I would have obtained more understanding and comfort from a friend.
- 54. I feel confident that things will work out as long as I follow my parents' advice.
- 55. I am disappointed with their response.

Twenty-five items are reverse-scored: 3, 6, 10, 11, 14, 16, 18, 20, 22, 23, 25, 26, 27, 29, 31, 33, 34, 35, 38, 41, 43, 47, 52, 53, 55). Affective quality of relationship items are as follows: 1, 2, 4, 14, 16, 20, 21, 22, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 43, 52, 53, 55. Parents as facilitators of independence items are as follows: 5, 6, 8, 9, 10, 11, 13, 15, 17, 18, 23, 24, 25, 27. Parents as source of support items as follows: 3, 7,

12, 19, 39, 44, 46, 47, 48, 49, 50, 51, 54.

Relationship with Mother and Father Scales (RMFS; Hindy & Schwarz, 1994)

Note: Items presented here are from the “Relationship with Mother: Other Rating of Sister/Daughter” Form of the RMFS.

1. She is the most important person in her mother’s life. * (Item 10)
2. She believes she is much closer emotionally to her mother than her father is to her mother.
3. She is very happy with her present relationship with her mother.
4. She sometimes feels that she understands her mother much better than her father understands her mother.
5. She gets along much better with her mother than she does with her father.
6. She and her mother may get along all right on the surface, but down deep she wonders if they even know each other.
7. If her parents had split up, she would have much preferred to live with her mother.
8. She seems to be more important to her mother than anyone else in the family. * (Item 10)
9. Very often she has envied other people who have had so much more fun with their mother than she.
10. In family discussions, more often she finds herself speaking in support of her mother’s positions than her father’s positions.
11. In most of the disagreements between her mother and father, she finds herself supporting her mother.
12. She and her mother have a great deal of mutual respect, faith, and confidence in one

another. * (Item 44)

13. She seems to find it harder to see her father's viewpoint than her mother's viewpoint.

14. She used to wish very often that she and her mother could be much closer.

15. When her mother and father disagree, she is much more likely to agree with her mother than with her father.

16. In most of the disagreements she had with her father, she could count on her mother's support.

17. How much does she depend on her mother for advice or guidance? * (Item 19)

- a. Not at all
- b. A little
- c. To a fair degree
- d. Very much
- e. Completely

18. How much does she want to be like her mother as an adult?

- a. Very much like her
- b. Somewhat like her
- c. A little like her
- d. Not very much like her
- e. Not at all like her

19. How close does she feel to her mother? * (Item 12)

- a. Extremely close
- b. Quite close
- c. Moderately close

d. Not particularly close

e. Not at all close

20. How often does she talk about her personal problems with her mother? * (Item 14, Item 21)

a. Once or twice a week

b. Once or twice a month

c. A few times a year

d. Hardly ever

e. Never

21. How much does she feel that her mother cares about her and takes a real interest in what's happening in her life?

a. Not at all

b. A little

c. Some

d. A lot

e. A great deal

22. How would she characterize her present relationship with her mother?

a. Harmonious

b. Neutral

c. Conflicted

Parent-Child Closeness Scale (PCC; Buchanan, Maccoby, & Dornbusch, 1991)

1. How openly do you talk with your parent? * (Item 14)

2. How comfortable do you feel admitting doubts and fears to your parent?

3. How interested is your parent in talking to you when you want to talk? * (Item 6)
4. How often does your parent express affection or liking for you? (Item 4, Item 5)
5. How well does your parent know what you are really like?
6. How close do you feel to your parent? * (Item 12)
7. How confident are you that your parent would help you if you had a problem? * (Item 17, Item 25)
8. If you needed money, how comfortable would you be asking your parent for it? * (Item 26)
9. How interested is your parent in the things you do?

Parent-Child Relationship Questionnaire (PCRQ; Furman & Gibson, 1995)

1. Some parents want their children to spend most of their time with them, while other parents want their children to spend just some of the time with them. How much does this parent want you to spend most of your time with him or her?
2. How much does this parent not let you go places because he or she is afraid something will happen to you?
3. How much do you and this parent care about each other?
4. How much do you and this parent disagree and quarrel with each other?
5. How much do you and this parent do nice things for each other?
6. How much do you and this parent like the same things?
7. Some parents praise and compliment their children a lot, while other parents hardly ever praise and compliment their children. How much does this parent praise and compliment you? * (Item 11)
8. How much does this parent order you around?

9. How much do you and this parent tell each other everything?
10. How much does this parent spank you when you misbehave?
11. How much do you admire and respect this parent?
12. How much does this parent admire and respect you? * (Item 15)
13. Some parents take away privileges a lot when their children misbehave, while other parents hardly ever take away privileges. How much does this parent take away your privileges when you misbehave?
14. How much does this parent show you how to do things that you don't know how to do?
15. How much does this parent yell at you for being bad? * (Item 39)
16. How much does this parent ask you for your opinion on things? * (Item 46)
17. How much do you and this parent go places and do things together?
18. How much does this parent make you feel ashamed or guilty for not doing what you are supposed to do? * (Item 33)
19. Some parents talk to their children a lot about why they're being punished, while other parents do this a little. How much does this parent talk to you about why you're being punished or not allowed to do something?
20. How much does this parent want you to do things with him or her rather than with other people?
21. How much does this parent not let you do something you want to do because he or she is afraid you might get hurt?
22. How much do you and this parent love each other?
23. How much do you and this parent get mad at and get in arguments with each other? *

(Item 37)

24. How much do you and this parent give each other a hand with things?
25. Some parents and children have a lot of things in common, while other parents and children have a little in common. How much do you and this parent have things in common?
26. How much does this parent tell you that you did a good job?
27. How much does this parent tell you what to do? * (Item 56)
28. How much do you and this parent share secrets and private feelings with each other?
29. How much does this parent hit you when you've been bad?
30. How much do you feel proud of this parent?
31. Some parents feel really proud of their children, while other parents don't feel very proud of their children. How much does this parent feel proud of you? * (Item 1)
32. How much does this parent forbid you to do something you really like to do when you've been bad?
33. How much does this parent help you with things you can't do by yourself? * (Item 17, Item 25)
34. How much does this parent nag or bug you to do things? * (Item 55)
35. How much does this parent listen to your ideas before making a decision? * (Item 52)
36. How much do you play around and have fun with this parent?
37. Some parents make their children feel bad about themselves a lot when they misbehave, while other parents do this a little. How much does this parent make you feel bad about yourself when you misbehave?
38. How much does this parent give you reasons for rules he or she makes for you to

follow?

39. How much does this parent want you to be around him or her all of the time?

40. How much does this parent worry about you when you're not at home?

41. How much do you and this parent have strong feelings of affection (love) toward each other? * (Item 4)

42. How much do you and this parent argue with each other?

43. Some parents and children do special favors for each other a lot, while other parents and children do special favors for each other a little. How much do you and this parent do special favors for each other?

44. How much are you and this parent alike?

45. How much does this parent say that he or she liked what you said?

46. How much does this parent make you do things?

47. How much do you and this parent talk to each other about things that you don't want others to know? * (Item 14)

48. How much does this parent punish you by giving you a paddling when you've done something wrong?

49. Some children think very highly of their parent, while other children don't think so highly of their parent. How much do you think highly of this parent?

50. How much does this parent think highly about you? * (Item 16)

51. How much does this parent punish you by sending you to your room or making you stay home?

52. How much does this parent teach you things that you don't know?

53. How much does this parent pick on you when you don't deserve it?

54. How much does this parent respect your opinion? * (Item 47)

55. Some parents and children spend a lot of free time together, while other parents and children spend a little free time together. How much free time do you and this parent spend together?

56. How much does this parent let you know that other children behave better than you do?

57. How much does this parent give you reasons for decisions about what you can and can't do? * (Item 54)