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Correlates of Parental Differential Treatment: Parental and Contextual Factors During Middle Childhood

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The current study examined whether parental and contextual risk factors contribute to mothers' and fathers' differential treatment (MDT/FDT) when accounting for sibling dyad characteristics. Also explored was whether family type (single mothers vs. 2 parents) moderated the links between the parental and contextual correlates and MDT. One hundred and seventy-two families with older (M = 7.4 years) and younger (M = 5.2 years) siblings were studied. Parents and children reported about the parent – child relationship, and parents reported about the children's characteristics, their own psychological resources, and contextual factors. Controlling for sibling dyad characteristics, FDT was predicted most consistently by household chaos. Furthermore, single mothers were not at risk per se for using more MDT but only when coupled with high maternal anger.

Twenty years ago, Plomin and Daniels (1987) alerted developmental psychologists to the fact that children within the same family often turn out quite differently and that sharing the same rearing environment does not lead to sibling similarity. This began a wave of research to pinpoint child-specific aspects of the environment linked to sibling differences in outcome, and parental differential treatment (PDT) has emerged as a consistent factor related to children's adjustment (Turkheimer & Waldron, 2000). There have been very few studies, however, examining risk factors for PDT. The aim of the current study was to assess how parental characteristics and contextual factors are associated with PDT, while controlling for differing characteristics of the sibling dyad. We examined this issue during middle childhood using a multi-informant approach.

Theoretical Frameworks

The most influential theoretical framework for considering correlates of parenting was formulated by Belsky (1984). Reviewing research from abusive families, Belsky postulated that child characteristics, personal resources of the parents, and contextual sources are all important determinants of parenting. In the current study, it is not parenting, per se, that is of interest but rather the degree of *differential treatment* that parents exhibit. We hypothesize, however, that parental and contextual factors may also be associated with differential treatment, considering that the division of attention and affection between children is at risk under more stressful circumstances and/or for parents with less psychological resources:

> The underlying notion is that parents have a finite amount of resources in terms of time, attention, patience and support to give their children. In families in which most of these resources are devoted to coping with economic stress, depression, and/or marital conflict, parents may become less consciously or intentionally equitable and more driven by preferences or child characteristics in their childrearing efforts. (Henderson, Hetherington, Mekos, & Reiss, 1996, p. 47)

Treating children differently may reflect appropriate, sensitive parenting (Kowal & Kramer, 1997), as happens when parents adjust their behavior to each child's needs and characteristics. Therefore, PDT is expected and seen to be normative when it is equitable and related to children's own characteristics such as age and temperamental differences (Brody, Stoneman, & McCoy, 1992) or special needs (McHale & Pawletko, 1992). However, the extant evidence on PDT is consistent in showing that PDT is a negative phenomenon for the disfavored child. For example,

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PDT has been related to children's self-esteem (McHale, Updegraff, Jackson-Newsom, Tucker, & Crouter, 2000), adjustment (Dunn, Stocker, & Plomin, 1990; Feinberg & Hetherington, 2001; McHale & Pawletko, 1992), and negative emotionality (Brody et al., 1992). Therefore, it is important for risk factors to be identified. In the current study, we minimized ''justified'' PDT by stipulating that the siblings be close in age, during middle childhood, and without any known disabilities or special educational needs.

PDT and Children's Characteristics

Research has shown that both parents and children perceive PDT (Brody & Stoneman, 1990; Daniels & Plomin, 1985). Furthermore, there is evidence to suggest that children's perceptions and understanding of differential treatment are more important than objective levels of PDT (Kowal & Kramer, 1997). The current study utilized a puppet interview technique (Measelle, Ablow, Cowan, & Cowan, 1998), enabling the children's perceptions to be taken into account. This technique provides a tool for gaining consistent and meaningful reports from children as young as 4 years of age. We were therefore able to examine correlates of PDT as reported by the children as well as by the parents themselves.

Children's own characteristics, such as gender, age, and temperament, and especially sibling differences in these characteristics, have been related to PDT. Mixed results have been found for the gender composition of the pair and PDT. For example, mothers and fathers reported having more conflictual relationships with their children from same-gender dyads than with children from opposite-gender dyads (Stocker, 1995). It has been suggested that parents may expect children who are the same gender to behave similarly, and thus, they might develop more conflictual relationships with the less well-behaved child. In addition, they may have a greater need to differentiate between children who are the same gender than between those who are different genders. On the other hand, Crouter, McHale, and Jenkins-Tucker (1999) suggested that parents have an easier time recognizing and admitting to differential treatment when their two children are obviously different (e.g., a boy and a girl). Overall, the findings regarding sex constellation are underwhelming, with many studies reporting no differences (e.g., Brody, Copeland, Sutton, Richardson, & Guyer, 1998; McGuire, Dunn, & Plomin, 1995).

Sibling age gap has been more consistently related to PDT (Dunn & Plomin, 1990). For example, it has been found that younger children enjoy more warmth and involvement with their parents (Brody, Stoneman, & Burke, 1987). Most strikingly, Jenkins, Rasbash, and O'Connor (2003) reported that child age was the strongest child-specific predictor of parental differential positivity and negativity. In addition, although parents vary in the degree to which their behavior is affected by child temperament (Jenkins et al., 2003), children temperament, especially negative affect, is known to evoke elevated levels of negative parental behavior and to decrease positive parental behaviors (Anderson, Lytton, & Romney, 1986; Jenkins et al., 2003). Furthermore, Brody et al. (1992) found that differences in siblings' negative emotionality levels were more strongly linked with PDT than was each child's absolute level of negative emotionality.

While controlling for sibling dyad variables (i.e., sibling age gap, sibling sex constellation, and differential sibling temperament), we focused on shared family factors as correlates of PDT. We did this in order to avoid simply capturing variance in PDT due to the siblings' distinct characteristics.

Parent and Context Factors as Correlates of PDT

Extensive research has examined the associations between parental characteristics (e.g., Radke-Yarrow, 1998), as well as contextual variables and parenting (e.g., Wachs, 2005), including research stemming from our project detailing associations during the middle childhood period (Pike, Coldwell, & Dunn, 2006). Much less research has examined how such factors relate to PDT—we propose that parental and contextual variables may also prove to be important correlates of PDT. Thus, the current study utilizes *absolute* differences in parenting to assess PDT because we were concerned with differentiating those families displaying small versus large amounts of PDT rather than examining the within-family effects of PDT.

Previous studies examining links between parental stress and PDT have focused on variables such as neuroticism (Dunn & Plomin, 1986) and aspects of maternal mental health such as depression (Henderson et al., 1996; Tarullo, DeMulder, Ronsaville, Brown, & Radke-Yarrow, 1995), as well as contextual stress variables such as marital conflict (e.g., Deal, 1996; Henderson et al., 1996; Jenkins et al., 2003; McHale, Crouter, McGuire, & Updegraff, 1995) and economic pressure (Henderson et al., 1996; Jenkins et al., 2003; Mekos, 1996). However, most of these studies have focused on only one or two stressors at a time (cf. Henderson et al., 1996; Jenkins et al., 2003), ignoring more complex patterns of influence. We sought to take a more comprehensive approach to reveal how

different variables together are related to PDT. The one recent study to examine multiple stressors and PDT found that stressful family environments (as indexed by lower socioeconomic status [SES], marital dissatisfaction, and larger family size) were linked to higher levels of PDT within a large representative sample of Canadian children between the ages of 4 and 11 years (Jenkins et al., 2003).

As parenting stress has been found to be strongly tied to parental psychological health and well-being (Deater-Deckard, 2005), we focused on two parental variables: parental malaise (physical and psychological well-being) and emotional anger and examined their relationship to PDT. Specifically, prolonged feelings of sadness and despair, loss of appetite and enjoyment, lethargy, and thoughts about suicide are indicative of psychological mental state problems. These symptoms, although not always meriting a diagnosis of psychopathology per se, remain influential in parenting stress and coping processes (Goodman & Gotlib, 2002). We thus hypothesized that those mothers reporting high levels of malaise would also be more likely to treat their children differently. Furthermore, a parent's proneness to emotional anger provides insight into his/her neuroticism and agreeableness—factors consistently linked to parent–child relationship quality (see Belsky & Barends, 2002, for a review). In addition, emotional anger is related to stress (Deater-Deckard, 1998), further underpinning this aspect of parental temperament as a suitable candidate for risk of PDT.

We also examined three contextual variables: marital satisfaction; household chaos, characterized by a lack of routines and organization; and parental education as an indicator of SES. These variables were chosen as they can limit parenting resources (Deater-Deckard, 2005; Wachs & Camli, 1991) and are related to parental stress.

As mothers, fathers, and siblings do not interact in isolation, but function within a family system, dysfunction in one of the subsystems that can be reflected in other subsystems (Minuchin, 1974). Marital dissatisfaction has been related to lower parental resources, more negative parent–child interaction, and harsher child discipline (e.g., Erel & Burman, 1995). When parents are not satisfied in their marital relationship, they may have fewer personal resources and may not support each other's parenting. This, in turn, can negatively affect the parent–child relationship and may constrain parental efforts to treat children similarly (Crouter et al., 1999). Previous research has found lower levels of PDT when parents reported elevated levels of marital communication (Deal, 1996) and of marital satisfaction (Jenkins et al., 2003). Moreover, Reiss et al. (1994) proposed that conflictual marriages set the stage for PDT. That is, when mothers and fathers fail to resolve their conflicts, they may misuse their relationships with their children as part of their conflict (Reiss et al., 1994). This idea can be seen when parents create an alliance with one child, excluding others, thereby increasing differential treatment (Kitzmann, 2000; Volling, 1997).

A more global, though proximal contextual factor also considered was household chaos. A ''chaotic home'' is defined as one high in noise and crowding and low in regularity and routines (Wachs, 2005). Household chaos has been related to poorer parent–child relationships (Coldwell, Pike, & Dunn, 2006), parental stress (e.g., Ostberg & Hagekull, 2000), and children's behavior problems (Dumas et al., 2005). Finally, SES was examined as indicated by parental education. Substantial literature has shown that parents of lower SES display harsher discipline and more negativity (Conger et al., 1992) in their parent–child relationships (Deater-Deckard, Atzaba-Poria, & Pike, 2004). In addition, parents of lower SES experience elevated levels of stress and display higher levels of PDT (Crouter et al., 1999; Jenkins et al., 2003).

Parenting and Family Type

As well as traditional two-parent families, the current study included single-mother families. Reviews of studies comparing children from divorced versus intact families report that children of divorced parents exhibit increased levels of behavior problems and that these differences are largely mediated by differences in parenting in two- versus one-parent families (e.g., Amato, 2001). In other words, parenting in single-mother households tends to be less positive and more negative than parenting in the context of two-parent families. We know of only one recent study that has demonstrated increased levels of PDT among single mothers. The study by Jenkins et al. (2003) found greater degrees of differential negativity among the single mothers in their Canadian sample. They suggested that the higher levels of stress characterizing single mothers are reflected in elevated levels of parental negativity and decreased abilities and resources to intentionally keep childrearing equitable. We sought to replicate this finding across multiple informants. Furthermore, although it is well known that fathers have an influence on children's development (Lamb, 2004), most research concerning differential treatment has focused on mothers (cf. Brody et al., 1992; Crouter et al., 1999; Stocker, 1995; Volling & Belsky, 1992). In the current study, we aimed to investigate both fathers and mothers, thereby

extending knowledge about fathers' differential treatment (FDT).

Finally, we tested for moderation effects by family type. In particular, we hypothesized that the risk of mothers' differential treatment (MDT) from maternal factors and/or contextual factors might be accentuated in the context of single-mother families. This stems from Rutter's (1979) cumulative model of risk and resilience, in which risk factors operate in a cumulative manner. Accordingly, single parenthood as well as the parental and contextual factors may increase risk in an interactive rather than in a simple additive fashion.

Current Study

Our examination of parent and contextual correlates of PDT is the first of its kind in several ways. First, the proximal contextual factor of household chaos was examined in relation to PDT. Second, we included reports of parenting from the children themselves (as young as 4 years of age) as well as considering both mothers' and fathers' reports of their own parenting. Finally, we examined MDT in both two-parent and single-mother households. Specifically, we hypothesized that (a) parental and contextual variables would be associated with both MDT and FDT; (b) parental and contextual variables would be statistically predictive of PDT after accounting for the sibling characteristics of differential sibling temperament, sibling age difference, and sex constellation; and (c) the effects of parental and contextual variables on MDT would be moderated by family type. Specifically, the risk of MDT from maternal factors and/or contextual factors would be accentuated in the context of single-mother families.

Method

Sample and Recruitment

Schools in the south of England were approached and asked to send letters to parents of children in reception (4- to 5-year-olds) and Year 1 (5- to 6-year-olds) classes who had an older brother or sister age 8 years or younger. However, many were unable (or unwilling) to target specific children and sent letters to all children in these classes. In addition, letters were sent home via the children; therefore, there was no guarantee that parents received our letters. Because of this opt-in procedure, it was not possible to estimate refusal rates accurately.

The sample consisted of 172 families with at least two children. Eighty-three percent of the older children in the study were the eldest child in their family, and 79% of the younger children in the study were also the youngest in their family. Sixty-three percent of the families who took part had two children, 31% had three, and 6% had four or more children. Fifty-four were single-mother families and the remaining 118 were two-parent families. Within the two-parent families, approximately equal numbers of the four sibling sex constellations (boy – boy, boy – girl, girl – girl, and girl – boy) were recruited, but in the single-mother families, boy – girl pairs were overrepresented. Overall, 39 boy – boy pairs, 52 boy – girl pairs, 41 girl – girl pairs, and 41 girl – boy pairs took part. The average age of the older sibling taking part in the study was 7.4 (SD = 0.84) years, and the average age of the younger sibling was 5.2 (SD = 0.61) years. There were no significant differences between the mean children's ages across family type. Single mothers (M = 34.19 years, SD = 5.60) were significantly younger than the mothers in the two-parent families (M = 37.17 years, SD = 4.40). Families came from a mix of working-class and middle-class backgrounds, and there was a wide range of educational attainment among the families. However, single mothers left education at a significantly earlier stage than mothers within two-parent families. The families were almost exclusively Caucasian (92% of mothers), reflecting the population from which this sample was drawn.

Procedure and Measures

Families were visited at home where parents and children were interviewed and parents completed questionnaires. A brief description of the content of the measures is given next.

Parenting

Child reports. The Berkeley Puppet Interview (BPI; Ablow & Measelle, 1993) is a technique that obtains questionnaire-type data from young children using interview questions from two puppets. During the audiotaped interview, two identical puppets make opposing statements about a member of their family (e.g., ''My mom is nice to me''; ''My mom is not nice to me'') and then ask the child about themselves (e.g., ''How about your mom?''). Children's responses were subsequently coded on a 7-point scale where 1 is the *most negative score* and 7 the *most positive*. When a child chooses a response option as expressed by the puppet, a Code 2 (for a negative response—''My mom is not nice to me'') or a Code 6 (for a positive response—''My mom is nice to me too'') is used.

When a child amplifies a statement (e.g., ''My mom is horrible to me'' or ''My mom is really nice to me''), a Code 1 (*negative*) or 7 (*positive*) is used. A Code 3 or 5 indicates a response that is qualified in some way (e.g., ''My mom isn't nice to me most of the time'' or ''My mom is nice to me most of the time''). Finally, a Code 4 is used when a child indicates that both response options apply to them.

The interview was composed of two subscales related to parenting—warmth and hostility. Internal consistencies for the BPI subscales ranged from αs = .62 to .74. The parent–child relationship subscales of the BPI each contain six items. The warmth subscale includes items such as ''My mom is nice to me'' versus ''My mom is not nice to me'' and the hostility subscale contains items such as ''My mom is mean to me'' versus ''My mom is not mean to me.'' After initial coding, scores were calculated such that higher scores indicate more hostility and warmth, respectively.

Parent reports. In order to create warmth and hostility scales that were as equivalent as possible to the children's puppet reports, we selected items from the Expression of Affection Inventory (Hetherington & Clingempeel, 1992), the Parent–Child Relationship Scale (Hetherington & Clingempeel, 1992), the Parental Feelings Questionnaire (Deater-Deckard, 2000), and the Parental Discipline Interview (Deater-Deckard, 2000). For each of the items from the children's puppet interview, we selected the item closest in terms of content. For example, parents were asked how often they shouted at their child (from the Parent Discipline Interview), which we deemed a match for the puppet item ''My mom shouts at me a lot.'' Average warmth and hostility scores were thus constructed for mothers' and fathers' reports of their parenting toward the older and younger siblings. Adequate alphas (ranging from .62 to .79) were achieved, especially in light of the fact that each subscale contained six items.

Child temperament. Parents completed the Emotionality, Activity, and Sociability (EAS) (Buss & Plomin, 1984). For the purpose of this article, we have used the emotionality scales, which consist of five items (e.g., ''Child gets upset easily''). Parents answered using a 5-point scale, how characteristic or typical each statement was for their child, ranging from 1 = *not characteristic or typical of my child* to 5 = *very characteristic or typical of my child*. Internal consistencies for mothers' and fathers' reports were excellent (αs = .85–.86). Mother–father agreement was also substantial (*r*s = .54 and .51, $p < .001$, for older and younger siblings, respectively) and therefore supported the calculation of average emotionality scores for each child.

Parental Factors

Parental anger. The measure of parents' emotional anger is taken from the Emotionality, Activity, Sociality, and Impulsivity (EASI) temperament survey (Buss & Plomin, 1984). This self-report measure lists a number of characteristics that are then rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The emotional anger subscale consists of five items (α = .67, α = .68, for maternal and paternal reports, accordingly) including ''There are many things that annoy me'' and ''I yell and scream more than most people my age.'' To avoid confusion with the child emotionality measure, parents' emotional anger is referred to as parental anger throughout.

Malaise. The Malaise Inventory (Grant, Nolan, & Ellis, 1990) is a 24-item self-report questionnaire measuring health and general well-being. The items cover both physiological (e.g., ''Do you often have back-ache?'') and psychological (e.g., ''Do you often feel miserable or depressed?'') states and require a yes–no answer (α = .78, α = .74, for maternal and paternal reports, accordingly).

Contextual Factors

Marital relationship. The Golombok Rust Inventory of Marital State (Rust, Bennum, Crowe, & Golombok, 1990) was used to index both mothers' and fathers' overall satisfaction with their marital (or cohabiting) relationship. The questionnaire contains 28 items and is rated on a 4-point scale. Partners rate their feelings to each statement (e.g., ''My partner is usually sensitive to and aware of my needs''; ''I sometimes feel lonely even when I am with my partner'') on a scale of 1 = *strongly disagree* to 4 = *strongly agree*. The measure is scored such that higher scores indicate more marital *dis*satisfaction. The scale yielded alphas of .89 for both mothers and fathers in the current study. Mothers' and fathers' reports of their marital satisfaction were substantially correlated ($r = .57$, $p < .001$); therefore, the two reports were averaged to yield a single marital satisfaction score for each two-parent family.

Household chaos. The Confusion, Hubbub, and Order Scale (CHAOS; Matheny, Wachs, Ludwig, & Phillips, 1995) is a 6-item questionnaire measuring the level of calm within a household (α = .74, α = .76, for maternal and paternal reports, accordingly). Items are rated on a 5-point scale ranging from 1 (*definitely untrue*) to 5 (*definitely true*) and include ''The children have a regular bedtime routine'' and ''We are usually able to stay on top of things.'' Mothers' and fathers' reports were again highly correlated ($r = .52$, $p < .001$), thus their reports were averaged.

SES. SES was indexed by parental education. This was ascertained via parental interview and ranged from 1 (*no qualifications*) to 6 (*postgraduate education*). Education rather than occupational status was used because we wanted to avoid the interplay between family type (single-mother vs. two-parent family) and decisions about taking on employment outside the home. In the case of the two-parent families, mothers' and fathers' levels of educational attainment were highly correlated ($r = .59$, $p < .001$); thus, an educational average was used to depict SES for these families.

Results

Preliminary Analyses

Creating Differential Treatment Scores

In order to calculate PDT from the parental reports, we calculated the absolute difference between the parent – younger sibling scores and the parent – older sibling scores. This was done first for parental warmth, separately for mothers and fathers, such that a high score indicates more differential warmth. This calculation was then repeated for the parental hostility scores, again separately for mothers and fathers. In this case, a high score indicates larger differences in the hostility parents showed to their children. These scores will henceforth be referred to as parent-reported differential warmth and differential hostility, respectively.

Difference scores using the children's reports were calculated in a similar manner. That is, the absolute difference between the two siblings' ratings of parental warmth was calculated as was the absolute differences for the children's reports of hostility from their parents. As with the parental reports, separate difference scores were created for mothers and fathers. These scores will henceforth be referred to as child-reported ''differential warmth'' and ''differential hostility,'' respectively. Descriptive statistics for these and all other study measures are contained in Table 1.

In addition, we calculated sibling intraclass correlations for the parenting variables as an alternate, more intuitive means of assessing the degree of differential treatment reported by the parents and the children. For example, mothers' reports of warmth toward their two children were correlated at .60, and their reports of hostility again substantially correlated at .66. Fathers' reports of parenting revealed even greater levels of consistency in treatment (*r*s = .75 and .74, for warmth and hostility, respectively). In the case of the children's reports of maternal treatment, no consistency in treatment was revealed (*r*s = .08 and .03, for warmth and hostility, respectively), and for the children's reports of paternal treatment, the intraclass correlations indicated modest consistency (*r*s = .29 and .17, for warmth and hostility, respectively). In summary, the children's reports yielded substantial estimates of PDT, although substantial consistency in parental treatment was reported by the parents themselves. Still, parents did not report identical treatment, validating our quest to identify correlates of the modest to moderate degree of PDT reported by both children and their parents.

Table 1
Descriptive Statistics for All Study Measures

	M (or %)	*SD*
PDT Variables		
Child reports		
Differential maternal warmth	0.74	0.77
Differential maternal hostility	1.25	0.98
Differential paternal warmth	0.68	0.75
Differential paternal hostility	1.10	0.90
Maternal reports		
Differential warmth	0.35	0.43
Differential hostility	0.40	0.41
Paternal reports		
Differential warmth	0.29	0.34
Differential hostility	0.34	0.30
Predictor Variables		
Child variables		
Age difference between sibs (months)	26.41	8.98
Same-sex sibling pairs	45%	
Opposite-sex sibling pairs	55%	
Differential emotionality	0.88	0.68
Parental variables		
Maternal anger	2.78	0.71
Maternal malaise	4.18	3.47
Paternal anger	2.55	0.70
Paternal malaise	2.98	2.81
Contextual variables		
Parental education	3.16	1.47
Marital satisfaction	24.61	9.66
CHAOS	2.42	0.54

Note. CHAOS = Confusion, Hubbub, and Order Scale; PDT = parental differential treatment.

Parent – Child Agreement

It is noteworthy that mothers and children agreed to a moderate degree about parental warmth (*r*s = .26 for older children and .25 for younger children) and hostility (*r*s = .33 and .34, for older and younger siblings, respectively). Agreement between the children and their mothers, however, was negligible to modest in terms of *differential* treatment ($r = .17$ for

differential warmth and $r = .10$ for differential hostility). Fathers and the older children also yielded some agreement in terms of parental warmth ($r = .18$) and especially parental hostility ($r = .31$). However, no agreement was yielded between the younger children and their fathers (rs $= -.12$ and .09, for warmth and hostility, respectively), nor did fathers and their children agree about the extent of differential treatment displayed by fathers ($r = .10$ for differential warmth and $r = .12$ for differential hostility). These findings indicated that parents and children hold distinct views regarding differential treatment, warranting separate analyses by reporter.

Differences by Family Type

Finally, before addressing our research questions, we checked for mean differences between fathers, mothers within two-parent households, and single mothers for the parental variables and between the two-parent and single-mother families for the contextual variables. The only variable to reveal significant differences between groups was education. Two-parent households held higher educational qualifications ($M = 3.36$, $SD = 1.49$) than did the single mothers ($M = 2.74$, $SD = 1.34$), $t(171) = -2.63$, $p < .01$.

Parental and Contextual Correlates of PDT

In order to explore associations between parental and contextual variables and PDT, Pearson correlations were conducted (see Table 2). Considering first the sibling dyad characteristics, opposite-sex sibling pairs reported more differential hostility from their mothers. Sibling pairs with a larger age difference reported more differential warmth from their mothers and fathers. However, no significant associations were found for parental reports of PDT and the siblings' gender constellation or age gap. Conversely, differential emotionality was associated with higher levels of maternal differential warmth and hostility as reported by the mothers, although none of the associations with the children's reports of PDT were significant.

For the parental variables, a very different pattern emerged for mothers and fathers. No significant correlations were found for fathers. In contrast, parental anger was associated with three of the four PDT variables for mothers. Specifically, maternal anger was correlated with differential hostility as reported by the children and differential warmth as reported by both the children and mothers. In order to examine whether these correlations were significantly different for fathers and mothers, r to z transformations were calculated. This revealed that the correlations between maternal and paternal anger and children's reports of differential hostility differ significantly ($z = -2.40$, $p < .01$). In addition, the difference in correlations between maternal and paternal anger and child as well as parent reports of differential warmth neared significance ($z = -1.26$, $p = .10$; $z = -1.40$, $p = .08$, accordingly). Furthermore, malaise was significantly correlated with maternal differential warmth (mothers' reports) but not with

Table 2
Correlations Between All Variables and Absolute PDT

	Children's reports				Parental reports			
	Differential warmth		Differential hostility		Differential warmth		Differential hostility	
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
Sibling Dyad Characteristics								
SS vs. OS pair	−.02	.07	.20*	.07	.02	−.05	−.06	−.04
Sibling age difference	.19*	.20*	.14	.00	−.04	.07	−.05	.05
Differential emotionality	.08	−.10	−.06	−.00	.26**	.14	.17*	.13
Parental Variables								
Anger	.18*	.01	.20*	−.13	.24**	.06	.15	.16
Malaise	.15	.03	.14	−.16	.25**	.09	.13	.17
Contextual Variables								
Parents' education	−.03	−.29**	−.08	−.00	−.11	.13	.00	−.00
Marital satisfaction	−.07	.04	.04	.11	−.03	.02	.02	.01
CHAOS	.12	.30**	.12	.23*	.23**	.08	.13	.05

Note. SS = same sex; OS = opposite sex; PDT = parental differential treatment; CHAOS = Confusion, Hubbub, and Order Scale.
*$p < .05$. **$p < .01$.

paternal warmth ($z = -1.25$, $p = .10$). Finally, for the contextual variables, household chaos proved more important than marital satisfaction and education. In fact, no significant associations emerged for marital satisfaction, and only one correlation (with child-reported differential warmth) emerged for paternal education but not for maternal education ($z = -2.03$, $p < .05$). Household chaos followed a similar pattern in that child-reported differential fathering emerged as significant correlates but not the children's reports of differential mothering. These differences were close to significance for children's reports of differential warmth ($z = 1.40$, $p = .08$) but were not significant for differential hostility ($z = -0.82$, *ns*). In addition, household chaos was linked to maternal differential warmth (parent report) but was not significantly linked to paternal differential warmth (parent report). However, the difference between these correlations was not significant ($z = -1.19$, *ns*).

Statistical Prediction of PDT

We conducted a series of hierarchical regression analyses in order to test whether the parental and contextual variables were predictive of PDT after accounting for characteristics of the sibling dyad. Due to multicollinearity concerns, we first assessed the intercorrelations among the predictor variables. In the case of predictors of MDT, 6 of the 28 correlations were significant, and these ranged from .17 to .39 in magnitude. In the case of predictors of FDT, 7 of the 28 correlations were significant, and these ranged from .20 to .31 in magnitude. These negligible to moderate associations justified considering the variables as separate predictors.

First, we consider the hierarchical regression analyses predicting FDT because differing family types did not complicate these analyses. In the first step, the three sibling characteristic variables (same-sex vs. opposite-sex siblings pairs, age difference, and differential emotionality) were entered in order to control for sibling dyad characteristics. In the second step, we entered the parental and contextual factors. For example, in the prediction of fathers' differential warmth as reported by the children (see Table 3), the second step contained parental emotional anger, parental malaise, education, marital satisfaction, and household chaos. In this case, only education provided independent prediction of moderate effect size (partial $r = .27$). Looking at Table 3, only household chaos provided moderate independent prediction (partial $r = .28$) of differential hostility (child reports). Mirroring the zero-order correlations, no significant predictors were uncovered in the case of fathers' reports of PDT. Therefore, these analyses are not depicted.

The analyses were somewhat different for MDT. In the first step, family type (two parent vs. single mother) was entered. In the second step, the three sibling dyad characteristic variables were entered. In the third step, we entered the maternal and

Table 3
Hierarchical Regression Analyses Predicting Paternal Differential Warmth and Hostility (Children's Puppet Reports)

	Paternal differential warmth[a]			Paternal differential hostility[b]		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Step 1 (sibling dyad characteristics)						
SS vs. OS pair	0.12	0.16	.08	0.12	0.19	.07
Age difference between sibs	0.02	0.01	.19	−0.00	0.01	−.04
Differential emotionality (paternal report)	−0.02	0.13	−.02	−0.04	0.15	−.03
Step 2 (parental and contextual factors)						
SS vs. OS pair	0.13	0.16	.08	0.12	0.19	.07
Age difference between sibs	0.02	0.01	.24	−0.00	0.01	−.04
Differential emotionality (paternal report)	−0.05	0.13	−.04	−0.08	0.16	−.06
Parental emotional anger	−0.05	0.11	−.04	−0.09	0.14	−.07
Parental malaise	−0.01	0.03	−.04	−0.04	0.04	−.15
Parental education	−0.15	0.06	−.30*	0.02	0.07	.04
Marital satisfaction	0.01	0.01	.07	0.00	0.01	.02
CHAOS (paternal report)	0.26	0.19	.17	0.49	0.23	.28*

Note. SS = same sex; OS = opposite sex; CHAOS = Confusion, Hubbub, and Order Scale.
[a]Total $R^2 = .19$; $R^2 = .04$, for Step 1 (*ns*); $\Delta R^2 = .15$, for Step 2.
[b]Total $R^2 = .10$; $R^2 = .01$, for Step 1 (*ns*); $\Delta R^2 = .10$, for Step 2 (*ns*).
*$p < .05$.

Table 4
Hierarchical Regression Analyses Predicting Maternal Differential Warmth and Hostility (Mothers' Reports)

	Maternal differential warmth[a]			Maternal differential hostility[b]		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Step 1						
Family type	−0.15	0.08	−.16*	−0.01	0.07	−.02
Step 2						
Family type	−0.16	0.07	−.17*	−0.02	0.07	−.02
SS vs. OS pair	−0.30	0.70	−.03	−0.07	0.07	−.08
Age difference between sibs	−0.00	0.00	−.04	−0.00	0.00	−.03
Differential emotionality	0.17	0.05	.26**	0.10	0.05	.17*
Step 3						
Family type	−0.15	0.07	−.16*	−0.03	0.07	−.03
SS vs. OS pair	−0.03	0.07	−.03	−0.07	0.07	−.09
Age difference between sibs	−0.00	0.00	−.04	−0.00	0.00	−.04
Differential emotionality	0.14	0.05	.23**	0.09	0.05	.15
Parental emotional anger	0.12	0.05	.19*	0.07	0.05	.12
Parental malaise	0.01	0.01	.09	0.01	0.01	.04
Education	−0.03	0.02	−.09	0.01	0.02	.02
CHAOS	0.04	0.07	.05	0.03	0.07	.04
Step 4						
Family type	−0.14	0.07	−.15	−0.03	0.08	−.04
SS vs. OS pair	−0.03	0.07	−.03	−0.07	0.07	−.08
Age difference between sibs	−0.00	0.00	−.03	−0.00	0.00	−.05
Differential emotionality	0.13	0.05	.20*	0.09	0.05	.15
Parental emotional anger	0.15	0.05	.24**	0.03	0.06	.13
Parental malaise	0.01	0.01	.11	0.07	0.01	.02
Education	−0.04	0.03	−.14	0.00	0.08	.03
CHAOS	0.07	0.07	.08	0.03	0.08	.04
Parental Emotional Anger × Family Type	−0.14	0.05	−.23**	−0.01	0.06	−.01
Parental Malaise × Family Type	−0.01	0.01	−.08	0.01	0.01	.049
Education × Family Type	0.05	0.03	.15	−0.00	0.03	−.002
CHAOS (maternal report) × Family Type	−0.00	0.07	−.00	0.02	0.08	.029

Note. SS = same sex; OS = opposite sex; CHAOS = Confusion, Hubbub, and Order Scale.
[a]Total $R^2 = .27$; $R^2 = .03$, for Step 1 ($p < .05$); $\Delta R^2 = .07$, for Step 2 ($p < .05$); $\Delta R^2 = .08$, for Step 3 ($p < .05$); $\Delta R^2 = .09$, for Step 4 ($p < .01$).
[b]Total $R^2 = .07$; $R^2 = .00$, for Step 1 (*ns*); $\Delta R^2 = .04$, for Step 2 (*ns*); $\Delta R^2 = .03$, for Step 3 (*ns*); $\Delta R^2 = .00$, for Step 4 (*ns*).
*$p < .05$. **$p < .01$.

contextual variables, excluding marital satisfaction as this yielded no significant zero-order correlations nor was it relevant for the single-mother families. The fourth step (containing interaction terms) is considered in the next section, Moderation by Family Type. These four hierarchical regressions are contained in Tables 4 and 5. Because education differed across family type, we also conducted the regression analyses for MDT using residualized scores with the effects of education removed. This resulted in only minor changes (available from the authors); the beta weights for parental and contextual variables remained identical. As can be seen in Table 4, family type was predictive of differential warmth (mothers' reports), though the effect size was modest (partial $r = -.16$), indicating that the single mothers were more likely to report treating their children differently than were mothers in two-parent families. In only one case (see Table 4) did one of the parental/contextual variables provide independent prediction (as shown in Step 3) after controlling for sibling dyad characteristics (Step 2). Maternal anger provided modest independent prediction (partial $r = .18$) of differential warmth (mothers' reports). The remaining effects of the parental and contextual factors were moderated by family type, as described below.

Moderation by Family Type

In order to test whether the effects of parental or contextual variables on MDT differed for single mothers versus those in two-parent families, we

Table 5
Hierarchical Regression Analyses Predicting Maternal Warmth and Hostility (Children's Puppet Reports)

	Maternal differential warmth[a]			Maternal differential hostility[b]		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Step 1						
Family type	−0.15	0.14	−.09	−0.16	0.19	−.08
Step 2						
Family type	−0.13	0.14	−.08	−0.12	0.18	−.05
SS vs. OS pair	−0.01	0.13	−.00	0.41	0.17	.21*
Age difference between sibs	0.02	0.01	.20*	0.01	0.01	.13
Differential emotionality	0.10	0.09	.09	−0.10	0.12	−.07
Step 3						
Family type	−0.14	0.14	−.09	−0.09	0.18	−.04
SS vs. OS pair	−0.02	0.13	−.02	0.40	0.17	.20*
Age difference between sibs	0.02	0.01	.19*	0.01	0.01	.13
Differential emotionality	0.07	0.10	.07	−0.14	0.13	−.02
Parental emotional anger	0.15	0.10	.14	0.19	0.13	.13
Parental malaise	0.02	0.02	.07	0.01	0.03	.05
Education	0.01	0.05	.02	−0.06	0.06	−.08
CHAOS	0.07	0.15	.05	0.13	0.18	.07
Step 4						
Family type	−0.15	0.14	−.09	−0.06	0.18	−.03
SS vs. OS pair	−0.05	0.13	−.03	0.37	0.12	.18*
Age difference between sibs	0.02	0.01	.22*	0.02	0.01	.16
Differential emotionality	0.07	0.10	.07	−0.17	0.30	−.12
Parental emotional anger	0.23	0.11	.21*	0.23	0.50	.17
Parental malaise	0.02	0.03	.66	0.04	0.03	.14
Education	0.02	0.05	.04	−0.04	0.06	−.06
CHAOS	0.09	0.15	.06	0.10	0.19	.06
Parental Emotional Anger × Family Type	−0.21	0.11	−.20	−0.31	0.14	−.23*
Parental Malaise × Family Type	−0.00	0.03	−.01	−0.04	0.03	−.15
Education × Family Type	−0.02	0.05	−.03	0.02	0.07	.04
CHAOS (maternal report) × Family Type	0.03	0.15	.02	0.39	0.18	.21*

Note. SS = same sex; OS = opposite sex; CHAOS = Confusion, Hubbub, and Order Scale.
[a]Total $R^2 = .13$; $R^2 = .01$, for Step 1 (*ns*); $\Delta R^2 = .05$, for Step 2 (*ns*); $\Delta R^2 = .04$, for Step 3 (*ns*); $\Delta R^2 = .03$, for Step 4 (*ns*).
[b]Total $R^2 = .19$; $R^2 = .01$, for Step 1 (*ns*); $\Delta R^2 = .06$, for Step 2 ($p < .05$); $\Delta R^2 = .05$, for Step 3 (*ns*); $\Delta R^2 = .08$, for Step 4 ($p < .05$).
*$p < .05$.

included interaction variables, Parental Variable × Family Type and Contextual Variable × Family Type in a final step of the regression analyses. All interaction terms were created using centered data. In the case of differential warmth (mothers' reports) and differential hostility (children's reports), the Parental Anger × Family Type interactions were significant (see Tables 4 and 5). This interaction also showed a trend in the case of differential warmth according to the children's puppet reports (Table 5). Although small in magnitude (partial *r*s = −.17 to −.22), these results indicate that the pattern of statistical prediction of MDT from maternal anger did differ for the two family types. The zero-order correlations indicated substantial links for the single-mother families ($r = .44$, $r = .53$, $r = .42$, $p < .001$, accordingly) and negligible links for the two-parent families (.08, .07, .09, *ns*, accordingly). In order to further examine the nature of these interactions, we first divided the sample into "low maternal anger" and "high maternal anger" groups using a median split. We then examined the mean MDT scores for each group by family type. The pattern was clear—differential maternal treatment was more pronounced for single mothers reporting high emotionality (see Figures 1–3). In the case of differential hostility (children's reports), CHAOS × Family Type also provided significant, though modest, independent prediction (partial $r = -.19$; see Table 5). In this case, the zero-order correlations indicate that CHAOS is linked to

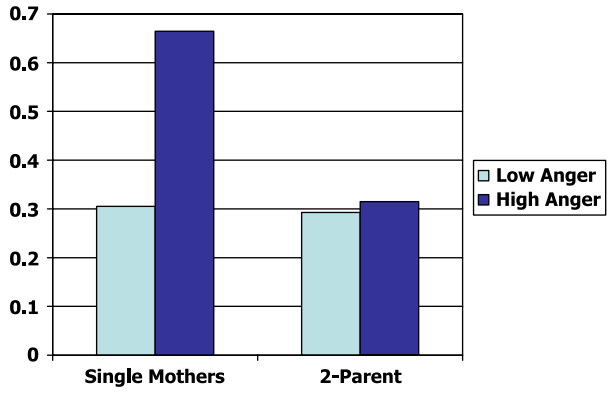

Figure 1. Mean levels of mother-reported differential warmth for low- and high-anger mothers in single-mother and two-parent families.

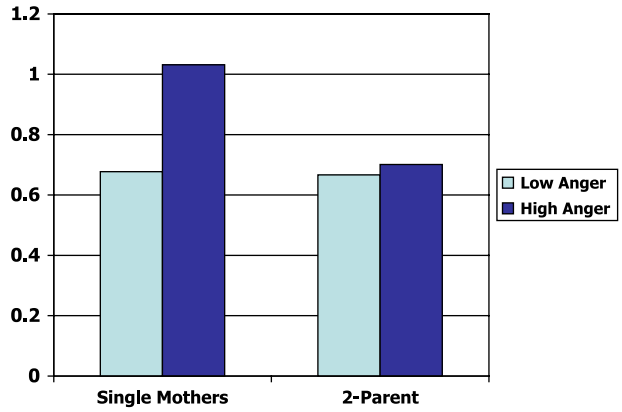

Figure 2. Mean levels of child-reported differential warmth for low- and high-anger mothers in single-mother and two-parent families.

MDT in two-parent but not in single-mother families ($r = .18$, $p < .05$; $r = -.03$, *ns*, accordingly). An inspection of the means revealed the least MDT in low-CHAOS two-parent families and the most MDT in high-CHAOS two-parent families (see Figure 4).

Variance Explained

As well as considering the independent statistical prediction of each individual risk factor, we examined the total variance explained by these regression models (listed below each table). Because of the limited collinearity, the predictors explained a moderate to substantial amount of variance en masse, even though the effect size for any one predictor was usually modest in magnitude. On average, the predictors explained 15% of the variance in children's reported PDT, and 17% of mother-reported PDT. We were less successful in accounting for variance in FDT as reported by the fathers themselves, explaining on average 6%.

Discussion

The main goal of our study was to move beyond the examination of links between PDT and child adjustment, as well as shifting from the large interest in the correlates of parenting (Belsky & Jaffee, 2006), to an exploration of the correlates of differential parenting. We examined parental and contextual correlates for mothers and fathers within two-parent families, as well as for single mothers. Discussion of these results, their implications, limitations, and future directions follow. First, however, we consider our dual-informant (parents and children) approach to PDT.

Using the puppet interviews, it was possible to assess children's perceptions of their relationships

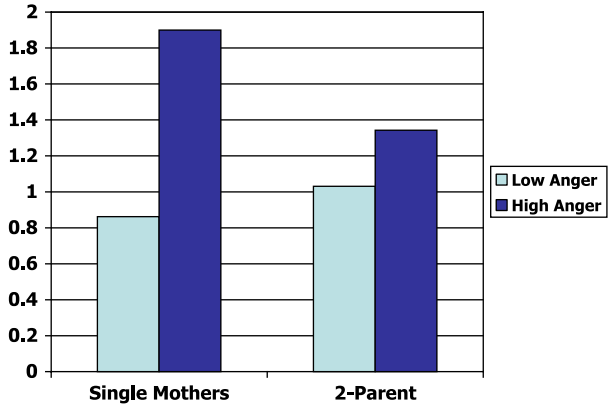

Figure 3. Mean levels of child-reported differential hostility for low- and high-anger mothers in single-mother and two-parent families.

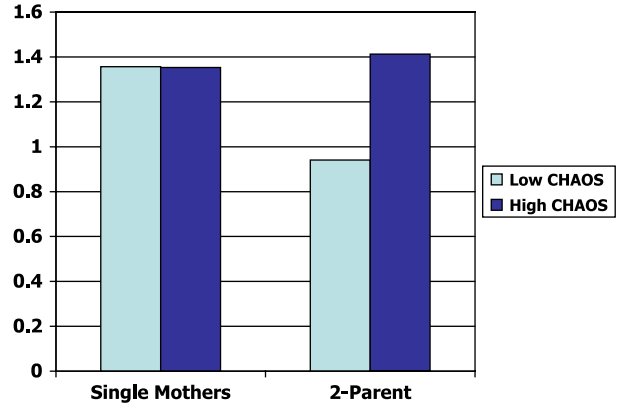

Figure 4. Mean levels of child-reported differential hostility for low– and high–Confusion, Hubbub, and Order Scale (CHAOS) households in single-mother and two-parent families.

with their parents. The overall low level of agreement seen for parents' and children's reports of PDT supports previous findings suggesting that despite living in the same family, children and parents often develop distinct perceptions of parental behaviors and family life events (Kowal, Krull, & Kramer, 2006; Larson & Richards, 1994). Furthermore, replicating Kowal et al. (2006), we found that in the case of differential treatment, it is very common for parents and children to perceive events in markedly different ways. The modest to moderate degree of parent–child agreement of differential treatment seen in this study, as well as the different patterns of associations discussed later, demonstrates the need to consider children's own views of their treatment. In addition, previous reports indicate that parents overestimate the consistency of their relationships with their children (Coldwell, Pike, & Dunn, in press; Pike, Reiss, Hetherington, & Plomin, 1996). Therefore, children's reports are particularly important.

Replicating previous studies, we found some evidence for links between sibling dyad–specific characteristics (sibling age gap, sex constellation, and temperamental difference) and PDT (e.g., Brody et al., 1992; Crouter et al., 1999; Jenkins et al., 2003). As PDT may be normative and acceptable when based on child and/or sibling dyad characteristics, these correlates may reflect ''justifiable'' PDT. For example, children may view being warmer to a younger child due to their developmental-level justifiable PDT, thereby ameliorating its effects (Kowal & Kramer, 1997). In the current study, we were interested in capturing deleterious PDT. Therefore, we statistically controlled for sibling characteristics before examining parent and contextual factors.

Patterns of association were quite different for mothers and fathers. Correlations revealed that maternal malaise and especially maternal anger were linked with increased MDT, as was expected based on previous studies (e.g., Dunn & Plomin, 1986). However, these factors were unrelated to FDT. Mothers continue to be more involved in childrearing (as measured in terms of time spent present with children, as well as actively engaging with children) than are fathers (Lamb, 2004). In addition, mothers shoulder more of the responsibility for child-care tasks (e.g., taking children to and from school, keeping dentist appointments). The fact that the parenting role is central to mothers' lives clarifies the reason why mothers' personal resources were closely tied to the relationships mothers have with their children, differential or otherwise. It should be noted, however, that these differences in the pattern of correlations between mothers and fathers require replication and should be interpreted with caution, especially as many of the comparisons indicated only trend-level differences between correlations.

Contrary to previous reports (e.g., Crouter et al., 1999; Jenkins et al., 2003), marital satisfaction was unrelated to PDT in our sample. Instead, our novel findings suggest that in houses characterized by elevated levels of disorganization, both parents tend to exhibit more differential treatment. It is particularly noteworthy that these links were evident for the children's reports that are not affected by shared method variance. In the case of mothers, the regression analyses appear to suggest that contextual factors are unimportant. However, post hoc analyses revealed that contextual factors were predictive after accounting for sibling dyad characteristics; instead, it is the moderate overlap between the maternal variables and the household chaos that accounts for the lack of significant prediction among mothers (no such overlap was revealed for fathers).

We interpret these results to mean that mothers who are advantaged in terms of their temperament and mental health foster more organized (less stressful) households. We draw this as the most sensible conclusion given that households do not organize themselves—people, and primarily adults, are responsible for homes being calm and organized rather than chaotic in character. This interpretation was also supported by the fact that a post hoc mediation analysis indicated that household chaos partially mediated the links between maternal malaise and anger with differential warmth (parent reports; details available from the first author). It is not surprising that it is the mothers' rather than fathers' personal resources that are most important for this sample because of the relatively traditional setup of most of these families. We would not, however, generalize to all families to state that mothers are *responsible* for maintaining family organization. It is the case, however, that for this normative sample, a majority of mothers were the primary caregivers and spent more time working in the home than did their partners.

It is noteworthy that in the case of fathers, only contextual factors provided statistical prediction of differential treatment over and above sibling dyad characteristics. In particular, household chaos and education were predictive of the children's reports of differential parenting. This may be because the role of fathers is less scripted than that of mothers and more open to the influences of external scaffolding (Lamb, 2004). Recalling that these are links with differential parenting, we interpret this to mean that household chaos is particularly stressful for fathers. Similarly, lower SES is typically characterized by

elevated stress (Crouter et al., 1999; Jenkins et al., 2003). Under such stress, fathers ''may become less consciously or intentionally equitable and more driven by preferences or child characteristics in their childrearing efforts'' (Henderson et al., 1996, p. 47).

Human behavior and development are a result of an interaction between the person and the environment (Bronfenbrenner, 1979). Previous research has primarily focused on family cohesion or home stimuli (e.g., the HOME) as measures of the family environment. Using the CHAOS, we demonstrated that household characteristics such as regularity, routines, noise, and crowding also play an important role for both fathers' and mothers' parenting behavior. These results stress the importance of the immediate household environment as opposed to more distal indices such as SES. In addition, it may be the CHAOS measure that serves as a marker for generalized, and perhaps covert, family strain, in addition to its function in assessing the overt household environment.

Examining the regression models, a striking finding is the difference in the way FDT was related to the sibling dyad characteristics as well as to the parental and contextual variables according to informant. Not a single significant association emerged when using fathers' reports of differential treatment. A possible explanation is the exceedingly high levels of consistency in treatment reported by the fathers, yielding little FDT to explain. Although the fathers saw themselves as mostly consistent in the way they treated their children, their children disagreed. This is reflected not only in the children's reports of FDT but also in the fact that a moderate degree of their reports was explained by contextual factors. Findings such as these highlight the fact that children are active constructors of their social environments and emphasize the importance of considering children's viewpoints about disparities in parental behaviors. Finally, even though not predicting the same MDT, it is striking that the correlates are similar for children's and mothers' reports of MDT.

Correlates of MDT did not act in the same manner for single- and two-parent families. Although only one of the four tests yielded significant mean-level differences between single- and two-parent families in MDT, when exploring statistical prediction for the two family types, a distinct picture emerged. Single mothers were at higher risk of treating their children differently only in the presence of high maternal anger. That is, the cumulative effect of two risk factors (single parenthood and high maternal anger) resulted in higher MDT. These results were similar when using both mothers' and children's reports of PDT. This ''double-risk'' finding supports the conclusion made by Rutter, Tizard, and Whitmore (1970), suggesting that risk factors operate in a cumulative manner.

In addition, an unexpected pattern of results was found when examining the moderation of the links between contextual factors and MDT by family type. Mothers from two-parent families showed the lowest levels of differential hostility only when coupled with low household chaos. Furthermore, they showed similar levels of MDT as the single mothers in the presence of high household chaos. These results suggest that as single mothers may have a ''double risk'' in the presence of high parental risk, mothers from intact families may have a ''double buffer'' when in combination with low contextual risk.

Why is the maternal factor more influential for single mothers, whereas the contextual factor is more influential for mothers from two-parent families? One possible explanation is that for single mothers, their own psychological characteristics and resources cannot be buffered or dominated by a partner's psychological resources. As single mothers with fewer psychological resources are the only resident carer of the children and often have less emotional support than married mothers (Weinraub, Horvath, & Gringlas, 2002), they may be prone to particular difficulties when their own resources are stretched. In two-parent families, however, mothers with less psychological resources may receive more support from their partners and therefore reduce the likelihood that it will affect the way they behave to their children. Moreover, low contextual risk only acted as a buffer for mothers in two-parent families. These findings support the growing literature on the vulnerability of single mothers (Amato, 2001), which indicates that single motherhood acts as a risk factor for child development and for the mother–child relationship but mainly when coupled with other risk factors (Rutter et al., 1970; Weinraub & Gringlas, 1995). Conversely, we found that being a mother in a two-parent family does not act as a protective factor in and of itself. However, when coupled with a factor such as low environmental chaos, it may act as a buffer and in fact be linked to lower MDT.

Implications

To date, most research on PDT has focused on child or sibling dyad characteristics assuming that PDT is predominantly affected by the siblings' age, gender, and temperament (e.g., Brody et al., 1992). In fact, some previous work has concluded that the vast majority of links between PDT and children's outcomes are due to differences in the siblings' genes rather than being a pure environmental effect (Pike,

McGuire, Hetherington, Reiss, & Plomin, 1996; Turkheimer & Waldron, 2000). However, the results in this study indicate that parental and contextual factors also contribute to PDT. We would argue that PDT related to parental and contextual factors may be particularly potent given that it is not merely reflecting siblings' differing genetic propensities. It is also impressive that some of our findings replicated across both child and parent reports, and that the parental and contextual factors accounted for nontrivial amounts of variation in differential parenting (on average 15% in the case of the children's puppet reports and 17% in the case of maternal reports). Finally, the different pattern of risk for mothers and fathers highlights the need to examine PDT in a more refined manner that uncovers the unique sources of stress for different parents.

As we would expect from family systems theory (see Hinde, 1992) and research (e.g., Luster & Okagaki, 1993), our findings demonstrated that relationships between individuals in the family are part of a larger system. The family system is affected by contextual factors as well as individual characteristics of family members. Our findings also echo Welsh, Buchanan, Flouri, and Lewis (2004) in pointing to the value of attending to all family members when providing family support rather than treating each in isolation. Recent policy and practice interest have focused on the parent–child relationship, at the expense of other family relationships. Our findings suggest that children are equally as likely as parents to reap the benefits of services or interventions directed toward enhancing parents' well-being. Furthermore, although associations were found between stress variables and PDT for both parents, the specific type of stress and its origin may vary for mothers and fathers. The different type of stressors linked to MDT and FDT can inform the development of future intervention programs. Similarly, the "double-risk" phenomenon seen for the single mothers highlights the importance of supporting single mothering, reducing stress originating from their personal resources and thus reducing risk for MDT.

Limitations and Future Research

We only considered two children within a limited age range in each family. Some of the families, however, had three or more children. This means that the way parents behave to their children and the way children perceive the differential treatment may be more complex and needs to be further explored considering all family members. Second, although the current sample included working- and middle-class families, the population from which the sample was drawn is primarily Caucasian. Recent research by Brody and colleagues has examined parenting and child outcomes among African American siblings (e.g., Brody, Kim, Murray, & Brown, 2005). However, we are unaware of research examining the correlates of PDT in ethnic minority populations. As Britain has become a multicultural country with a diversity of ethnic minority groups (Modood, 1997), it is important to replicate this study with ethnically diverse samples. Future research including ethnic minority groups and families across different cultures has the potential to increase the generalizability of current findings or to uncover cultural variations reflecting differing family processes. Third, although one of the advantages of the current study is using both parental and children's reports of PDT, it did not include observational measurements of parenting. A future study involving parent–child interactions could reveal interesting facets depending on whether PDT is objectively or subjectively measured. In addition, future research examining father involvement may uncover whether differences in correlates of PDT for fathers and mothers were related to the amount of time fathers spend in the company of their children. Finally, the current study was conducted at a single time point. Consistency in PDT has been previously reported (McGuire et al., 1995). However, we are unaware of research examining the correlates of PDT over time. A longitudinal study across different developmental periods would add to our understanding of change and stability in "determinants" of PDT.

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