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# Parents Favor Daughters: A Meta-Analysis of Gender and Other Predictors of Parental Differential Treatment

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Decades of research highlight that differential treatment can have negative developmental consequences, particularly for less favored siblings. Despite this robust body of research, less is known about which children in the family tend to be favored or less favored by parents. The present study examined favored treatment as predicted by birth order, gender, temperament, and personality. We also examined whether links were moderated by multiple factors (i.e., parent gender, age, reporter, domain of parenting/favoritism). Multilevel meta-analysis data were collected from 30 peer-reviewed journal articles and dissertations/theses and 14 other databases. In all, the data reflected 19,469 unique participants ($M_{age}$ = 19.57, $SD$ = 13.92). Results showed that when favoritism was based on autonomy and control, parents tended to favor older siblings. Further, parents reported favoring daughters. Conscientious and agreeable children also received more favored treatment. For conscientious children, favoritism was strongest when based on differences in conflict (i.e., more conscientious children had relatively less conflict with their parents). Parents and clinicians should be aware of which children in a family tend to be favored as a way of recognizing potentially damaging family patterns.

***Public Significance Statement***
This large-scale meta-analysis found that parents may be inclined to provide relatively favored treatment to daughters, conscientious children, and agreeable children. Parents may also be inclined to give more freedom and autonomy to older siblings. Parents and clinicians should be aware of which children in a family tend to be favored as a way of recognizing potentially damaging family patterns.

*Keywords:* birth order, parental favoritism, personality, siblings, temperament

*Supplemental materials:* https://doi.org/10.1037/bul0000458.supp



Academic scholars have examined the consequences of parental favoritism (often termed parental differential treatment [PDT] or differential parenting in academic research contexts) for several decades. As a whole, this body of literature suggests that siblings who receive favored parental treatment tend to have better mental health (Ponappa et al., 2017; Shanahan et al., 2008), fewer problem behaviors (Meunier, Bisceglia, & Jenkins, 2012; Rolan & Marceau, 2018), more academic success (Barrett Singer & Weinstein, 2000), better self-regulation (Deater-Deckard et al., 2001; Meunier et al., 2013), and healthier relationships (Jensen & McHale, 2017; Kowal & Kramer, 1997). The inverse is also supported in these studies—that is, siblings who receive less preferential treatment tend to have poorer outcomes in these same outcomes. Importantly, PDT consistently has unique consequences beyond the effects of parenting in general (e.g., Ponappa et al., 2017; Rolan & Marceau, 2018; Shanahan et al., 2008). In other words, the positive and negative outcomes associated with PDT are not about good and bad parenting but about being parented differently. Given the potential impacts of PDT, it is important to examine what predicts which children in the family receive favored or less favored treatment.

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The hypotheses and analytic strategy were preregistered with the Open Science Foundation before analysis was conducted. The preregistration, along with all analysis code, data, and coding schemes, can be found at https://osf.io/kxf3v/?view_only=895011acce57411fbc117626f7fcb1bd. There were no deviations from the preregistration.

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Despite decades of research on the potential consequences of PDT, comparatively less is known about which children in the family tend to be favored. Anchored in child effects models (Bell, 1968; Branje et al., 2010), this meta-analysis builds on existing PDT research to investigate who is more likely to receive favored treatment within families. We specifically looked at birth order, gender, temperament, and personality as potential predictors of favored treatment. We further examined multiple factors that may moderate these associations, including child age, parent gender, the reporter of PDT, the domain of parenting, and how PDT was measured.

## Child Effects and Moderating Contexts

Traditionally, research on parenting and child outcomes is based on a "top–down" model where parenting (the top) influences the development and behavior of children (the bottom; e.g., Bornstein et al., 2020). In his landmark 1968 study, Bell encouraged scholars to look beyond top–down, parent-to-child models and consider how children may elicit types of parenting. Since Bell's call to a broader perspective, generations of scholars have found evidence that individual characteristics of children can draw out or encourage certain types of parenting (Paschall & Mastergeorge, 2016; Van den Bulck et al., 2016). For example, a recent meta-analysis of 45 samples established that in the current literature, after controlling for parents' baseline psychological well-being and incompetent parenting, children's externalizing behaviors may be harmful for parents' psychological well-being (e.g., depressive symptoms, stress) and elicit incompetent parenting (e.g., harsh parenting, psychological control; Yan et al., 2021).

Links between child characteristics and PDT are likely heterogeneous. We anticipated that several factors may moderate links between children's characteristics and PDT. Those factors were parent gender, child age, the reporter of PDT (parent or child), the domain of parenting (overall favoritism, affection, conflict, resources), and how PDT was measured (perception or difference score). In the following sections, we include discussions of these moderators where applicable.

The way PDT is measured needs more explanation before we review the following literature. Some studies use what we call a perceptions-based approach, where scholars have an individual provide his or her personal perception of PDT (Peng et al., 2018; Zhao et al., 2021). Other studies use what we call the difference score approach, where researchers assess parenting with multiple reports from one individual or reports from multiple people; researchers then compare the multiple reports via difference score (e.g., Child 1's parental warmth minus Child 2's parental warmth; Browne et al., 2018; Padilla et al., 2020). Historically, the research on PDT has ignored the differences between the way perceptions and difference scores are assessed. Two studies, however, have reported on perception and difference scores collected in the same sample, claiming that the two are correlated but the link is small (Coldwell et al., 2008; Jensen & Whiteman, 2014). As such, we anticipated that links between children's characteristics and PDT would differ based on how PDT was measured, but we offered no specific hypotheses.

## Correlates of PDT

### *Birth Order*

The research in this area highlights that links between birth order and PDT may change depending on moderating factors, such as age and the domain of parenting. These changes may be strong enough to make it difficult to discern general patterns. For example, in early childhood, evidence suggests that parents have more conflict with older siblings compared to younger siblings (Volling & Elins, 1998). Yet, studies that have examined birth order and differential conflict in later childhood (Jenkins et al., 2003), adolescence (for fathers; Tucker et al., 2003), young adulthood (Salmon et al., 2012), and midlife (Suitor et al., 2016; Suitor & Pillemer, 2007) have found no link between birth order and differential conflict. Thus, birth order and differential conflict seem to show different patterns depending on the child's age. Consequently, it is essential to examine the moderating role of the domain of parenting because other domains show different patterns. Specifically, for differential affection, data suggest that there is no association between birth order and differential affection throughout early childhood (Volling & Elins, 1998), as there was with differential conflict (Volling & Elins, 1998). But younger siblings may be given relatively more affection in adolescence (Tucker et al., 2003), young adulthood (Salmon et al., 2012), and midlife (Suitor et al., 2016; Suitor & Pillemer, 2007); these patterns are not seen with differential conflict (Salmon et al., 2012; Suitor et al., 2016). Other domains of parenting exist in the PDT literature (overall PDT, differential resources, differential autonomy), but it is unknown how links with these domains may vary like the differences between differential conflict and differential affection.

Beyond age and domain of parenting, the literature suggests more complex patterns when factoring in parent gender. In some cases, links emerged only for mothers (Tucker et al., 2003), and some studies only examined links with maternal PDT at the exclusion of fathers (Suitor et al., 2016; Suitor & Pillemer, 2007). In other instances, patterns were based on the perception of children themselves (Salmon et al., 2012), with still other cases based on parent perceptions (Jenkins et al., 2003). Altogether, these studies convey that although birth order is likely linked to PDT, the heterogeneity of moderators across these studies makes it difficult to identify consistent patterns. Thus, we made no formal hypotheses.

### *Gender*

Beyond birth order, parents may tend to give preferential treatment for children based on the child's gender. The current literature suggests that, overall, findings are mixed on which gender receives more favorable treatment. Some PDT studies found that fathers tend to favor sons (Tucker et al., 2003) and mothers tend to favor daughters (Kalmijn, 2013; Suitor et al., 2006; Suitor & Pillemer, 2006; Tucker et al., 2003). Several other studies, however, report that in some cases mothers may provide preferential treatment to sons (Meunier, Bisceglia, & Jenkins, 2012). Still others suggest that daughters may be more favored across the board (Coldwell et al., 2008; Jensen et al., 2015; Pauker et al., 2017; Salmon et al., 2012; Suitor et al., 2016), with more studies reporting few to no differences (Browne et al., 2012; Hamwey & Whiteman, 2021; Keller et al., 2001; Roskam & Meunier, 2009).

Similar to patterns with birth order, it is difficult to make sense of these findings because of the variation among these studies on key moderators. Studies that examined gender and PDT measured children at different ages (Browne et al., 2012; Gozu & Newman, 2020), focused on either maternal or paternal PDT (Hamwey & Whiteman, 2021; Suitor et al., 2016), used reports from either children or parents (Davey et al., 2009; Meunier, Roskam, et al., 2012), explored different domains of parenting (Jensen et al., 2015; Tucker et al., 2003), and measured PDT in different ways (Browne et al., 2012; Salmon et al., 2012). We offered no specific hypotheses about how these moderators may change links between gender and PDT, but we did anticipate that meta-analysis models would help elucidate any consistent patterns.

### *Temperament and Personality*

Parents may find some temperaments and personalities easier to parent, which may elicit different types of parental treatment (Lengua et al., 2019). For example, between-family studies suggest that children with sociable temperaments may help parents feel competent (Grady & Karraker, 2017), potentially eliciting positive parenting. Other between-family research similarly finds that neurotic children may elicit less parental warmth, whereas agreeable and open children may encourage more parental warmth (de Haan et al., 2012; Egberts et al., 2015).

Our conceptualization of the link between temperament and PDT was necessarily broad because definitions of temperament are diverse (Shiner et al., 2012). Rather than focus on one specific approach to temperament (e.g., the notion of easy, difficult, and slow to warm up; Thomas & Chess, 1977), we based our use of temperament in the child effects model (Bell, 1968; Branje et al., 2010). Our overall premise was that some temperaments are easier or more difficult for parents to navigate and thus may elicit favored or less favored treatment (Atzaba-Poria & Pike, 2008). For example, extant literature suggests that a child may elicit parental negativity if their temperament includes heightened negative affect (Jenkins et al., 2003) because a child who tends to react with strong negative emotions may be harder to comfort. Along these lines, other research on temperament and PDT has found that young children who are temperamentally more negative or less prosocial may have relatively more conflict with their parents (Deater-Deckard et al., 2001). In later childhood, children with a more positive temperament may be comparatively less controlled by fathers (Roskam & Meunier, 2009). Further, in young adulthood, children who are more sociable and less shy may have a relatively more affectionate relationship with their parents (Daniels, 1986).

For personality, we focused on the commonly used Big Five factor model (e.g., Oshio et al., 2018). Consistent with current PDT literature, we focused on all five aspects separately (openness, conscientiousness, extraversion, agreeableness, and neuroticism). In childhood (Meunier, Roskam, et al., 2012) and adulthood (Davey et al., 2009; Gozu & Newman, 2020; Sulloway, 2001), openness may elicit less favored treatment. Conscientiousness seems to elicit favored treatment in childhood (Meunier, Roskam, et al., 2012), young adulthood (Jensen et al., 2020), and midlife (Sulloway, 2001), although one study found that conscientiousness was not linked to PDT among young adults (Gozu & Newman, 2020). Extraversion may encourage less favored treatment in both childhood (Meunier, Roskam, et al., 2012) and young adulthood (Gozu & Newman, 2020). One study found that extraverted adults recalled being favored when they were growing up (Davey et al., 2009). In terms of agreeableness, multiple studies found no link with PDT (Gozu & Newman, 2020; Jensen et al., 2020; Sulloway, 2001), but one study found that in early childhood, more agreeable children experienced more controlling behaviors from their parents than their sibling (Meunier, Roskam, et al., 2012). Lastly, neuroticism has been linked to less favored treatment in childhood (Meunier, Roskam, et al., 2012) and adulthood (Davey et al., 2009; Sulloway, 2001), although one study of young adults found no association (Gozu & Newman, 2020).

Thus, on the whole, we expected easier temperaments and conscientiousness to be linked with favored treatment (Grady & Karraker, 2017; Jensen et al., 2020; Meunier, Roskam, et al., 2012). We also expected openness, extraversion, and neuroticism to be linked to less favored treatment (Davey et al., 2009; Meunier, Roskam, et al., 2012; Sulloway, 2001). As with birth order and gender, the studies that link temperament and personality with PDT vary by the ages studied, the examination of maternal and paternal PDT, reporter of PDT, the domains of parenting explored, and how PDT was measured.

## The Present Study

Founded in the child effects model (Bell, 1968), we asked whether children's characteristics were linked to favored parental treatment. Our data and models were based on within-family studies that compare siblings in the same families to one another on parental treatment rather than between-family comparisons commonly used in other areas of research on parental treatment/investments (e.g., the Trivers–Willard hypothesis; Freese & Powell, 1999). In regard to birth order, gender, and one aspect of personality (agreeableness), research findings were too inconsistent to make concrete hypotheses. Beyond those characteristics, we hypothesized that easier-to-parent temperaments (i.e., less negativity, more positivity; Hypothesis 1) and high conscientiousness (Hypothesis 2) would be linked to favored treatment. Additionally, we hypothesized that the Big Five personality factors of high openness, extraversion, and neuroticism would be linked to less favored treatment.

Beyond main effects, we anticipated that several factors would moderate associations between children's characteristics and PDT. These factors were child age, parent gender, the reporter of PDT, the domain of parenting, and how PDT was measured. Given the variability of the use of these factors in the literature, we offered no specific hypotheses concerning the direction or magnitude of these potential effects.

## Method

### Literature Search

The sources we used were drawn from a broader data set that connects numerous constructs with PDT. The larger meta-analysis data set was intended to contribute to several meta-analysis studies. The literature search for the broader meta-analysis data set was collected between August 2015 and April 2022 by the lead author and several research assistants. Sources of any publication date until April 2022 were included. We used APA PsycInfo, Google Scholar, Family and Society Studies Worldwide, and Pubmed Central to search articles' titles, abstracts, key terms, and bodies for previously

established terms: "nonshared environments," "parental favoritism," "parental differential treatment," "differential treatment," "differential parenting," "within-family differences," "siblings," "parenting," and "sibling favoritism." We selected peer-reviewed journal articles, master's theses, and doctoral dissertations with any relevance to PDT. We conducted backward and forward citation searches of the initial articles, theses, and dissertations. The initial search and review of citations produced 243 potential articles. We then removed five duplicate articles. Next, we assessed the eligibility of the remaining articles. Articles were deemed ineligible for many reasons. Those reasons include they did not have effect sizes that correlated PDT with any of the study variables ($k = 90$; birth order, gender, temperament, the Big Five personality), they did not have a measure of PDT ($k = 79$), they were a conceptual or review article with no data ($k = 30$), they had only qualitative data ($k = 5$), they did not have human subjects ($k = 3$), or they were a meta-analysis ($k = 1$). In total, 30 studies were included in the analysis.

We also searched for unpublished analyses (e.g., conference presentations) or other databases. The lead author contacted 13 scholars from North America, Europe, and Asia whose research focuses on siblings and parenting regarding unpublished analyses or data on PDT. These scholars did not impart any unpublished analyses, but they did share 11 databases (cross-sectional and longitudinal) that contained completely unique data or outcomes that had not been analyzed in published articles. The lead author contributed an additional three databases. Thus, 14 other databases were included in the analysis. See Figure 1 for the flow of reports and studies into the meta-analysis.

## Data Structure

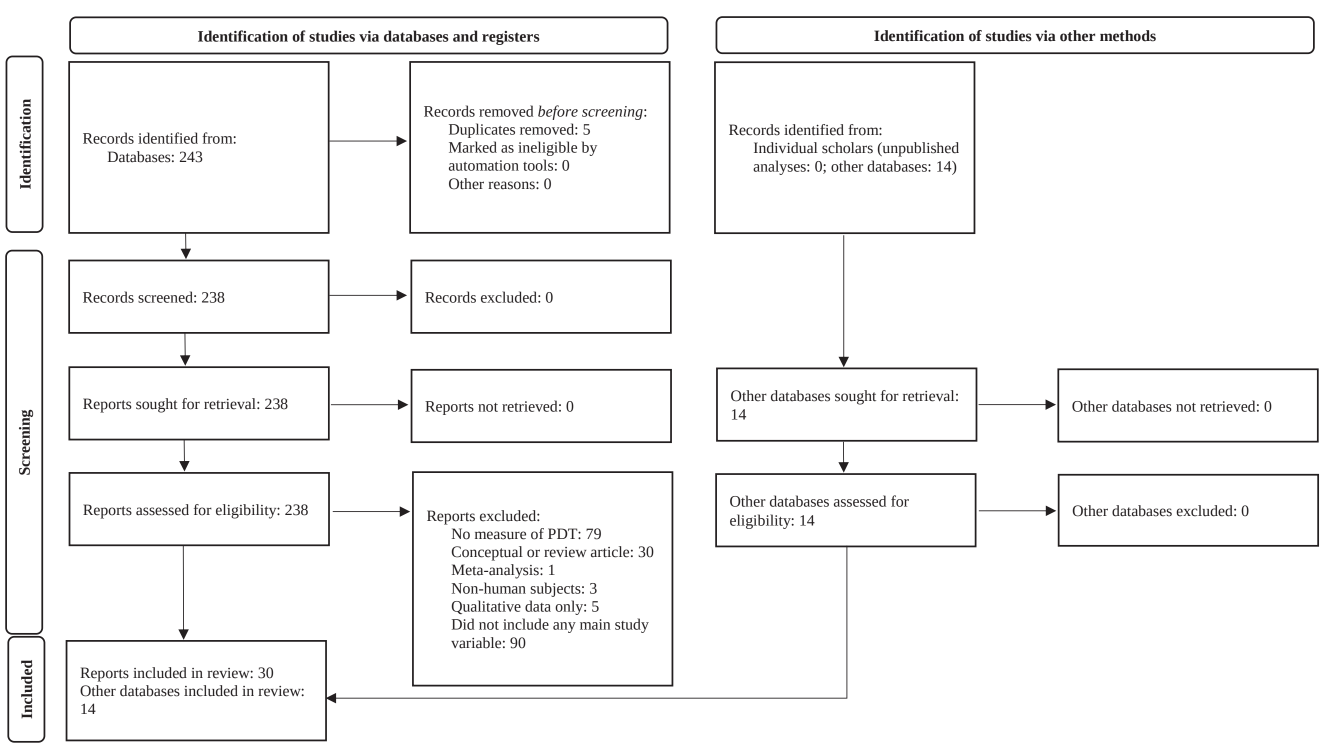
The data for this study were multilevel, with a total of four different levels. Level 4 consisted of unique samples. Nested within samples were what we termed *sources* (Level 3). In many instances, data were longitudinal, or as with other databases, many correlations were run separately for mixed- and same-sex sibling pairs. In other cases, multiple peer-reviewed articles have been published from the same data set. In these cases, we drew data from the same overall sample, but some characteristics may differ between sources (e.g., age). Nested within each source were effect sizes (Level 2). Most sources measured different domains of PDT, or PDT based on different reporters, which could vary by effect size within the same sources. Lastly, nested within effect sizes were the individual participants (Level 1). Because our study was a meta-analysis, we did not have the original data from the participants (aside from the other databases) and could not include moderators at the participant level.

The present study utilized 2,170 effect sizes from 87 sources nested within 36 samples, totaled from all models. Overall, the data represented 19,469 unique participants. The complete list of the individual sources used is available in Supplemental Table S1.

## Coding Procedures and Reliability

Coding was completed in three stages. In the first stage, we coded the characteristics of the sources and samples. Each source was coded individually by three researchers who then reconciled all differences. In the second stage, the three researchers coded the

**Figure 1**
*Flow of Reports and Studies Into the Meta-Analysis*




*Note*. PDT = parental differential treatment.

relevant effect sizes from each study. If critical information (e.g., correlations) was missing from any source, we contacted the source's corresponding author. This second stage was also triple coded, with all discrepancies reconciled. In the third stage, researchers evaluated the measures in every source, coding the direction of each measure to determine whether effect sizes needed to be reverse coded prior to analysis. For example, in some cases, higher values on a negative emotionality measure might have reflected greater negative emotionality and, in other measures, less negative emotionality. This stage was also triple coded in the same manner as the first two stages, and all discrepancies were reconciled. After the three coding stages, we conducted several reviews of the data to ensure that data had been entered and cleaned correctly.

## Coding of Variables and Moderators

### *Child Characteristics*

Birth order was coded as relative position to the sibling(s) used as a reference for PDT, with higher values indicating the target child was older than the referent sibling. Gender was coded as self-reported gender with higher values reflecting male participants. Temperament included a variety of factors that broadly define temperament (i.e., less negative emotionality, more persistence, less reactivity, more approachability, and less rigidity); all factors were coded so that higher values reflected a more preferred or easier-to-parent temperament. Personality characteristics consisted of the Big Five personality factors (openness, conscientiousness, extraversion, agreeableness, and neuroticism; Oshio et al., 2018). Each personality factor was coded so that higher values reflected more presence of the given trait.

### *PDT*

We also grouped PDT based on similarity of domain of parenting. Based on the literature we reviewed, we included five domains: overall, positive interactions, negative interactions, resources, and control. Overall PDT consisted of favoritism, global favoritism, and perception of favoritism measures. Positive interactions PDT included differences in affection, closeness, warmth, supportiveness, acceptance, or positivity. Negative interactions PDT included differential negative parenting, conflict, hostility, coldness, and harsh/punitive discipline. Resources PDT consisted of privileges, time, homework support, or money-given/financial assistance. Control PDT involved differences in control, autonomy allowance, overprotection, protectiveness, or monitoring. Each domain was coded so that higher values reflected favored treatment (i.e., more favored overall, more positive parental interactions, fewer negative interactions, more resources, and being controlled less).

### *Data Quality*

Additional methodological features were coded that speak to the quality of data drawn from the sources. Detailed information on these variables is included in Supplemental Table S2.

## Effect Sizes

Bivariate correlations were used as the measure of effect size. For 124 effect sizes (5.7% of all effect sizes), the bivariate correlation was not available, and we were unable to obtain it from the author of the original source. In these instances, we used the available information in the source to calculate a standardized semipartial correlation (Card, 2012). Following the work of Peterson and Brown (2005), we adjusted each positive standardized semipartial correlation by .05 to account for other variables' influence on the effect size. In models in which 30 or more effect sizes were based on standardized semipartial correlations, we also included an effect-size-level moderator to test whether effects varied between those of bivariate correlations and the standardized semipartial correlations. Positive correlations referred to the following being favored: older siblings (birth order models), sons (gender models), children with easier temperaments (temperament models), more open children (openness models), more conscientious children (conscientiousness models), more extraverted children (extraversion models), more agreeable children (agreeableness models), and more neurotic children (neuroticism models). Negative correlations referred to the following being favored: younger siblings (birth order models), daughters (gender models), children with more challenging temperaments (temperament models), less open children (openness models), less conscientious children (conscientiousness models), less extraverted children (extraversion models), less agreeable children (agreeableness models), and less neurotic children (neuroticism models).

## Analytic Strategy

All data were analyzed using the metafor package (Viechtbauer, 2010) in R Version 4.2.2 (R Core Team, 2022). We followed the same process for testing each of our models. Prior to the analysis, we examined missing data patterns. Although there were no missing effect sizes, there were instances of missing moderators. Among moderators with missing values across all models, the average percentage of effect sizes with missing moderator values was 4.74% ($SD$ = 4.32%, $Mdn$ = 3.70%, range = 0.14%–16.67%; for more information, see Supplemental Tables S3–S10). Six moderators had no missing data across all models. We then used procedures outlined by Howard et al. (2015) to impute data. Following these guidelines, we first created a series of principal component auxiliary variables for each model using linear and nonlinear combinations of all variables without missing values. The sets of principal component auxiliary were then used as auxiliary variables to impute 50 data sets for each model.

Following imputation, we conducted analysis in several steps. First, we tested Model 1, which examined the bivariate correlation between PDT and each predictor. Because publication bias is a large concern in meta-analysis (van Aert et al., 2019), in Model 2 we also controlled for whether the source was peer reviewed or not. This variable tested whether published effect sizes differed from those from other sources (theses, dissertations, other databases).

Next, we determined whether moderator analysis was appropriate. We first used the Q statistic included with Model 1 (Lipsey & Wilson, 2001). If the Q statistic was not significant, then we did not proceed to Model 2 because there was not significant heterogeneity in the model, regardless of level. Because of the multilevel nature of our models, we also examined the heterogeneity at each observable

level (sample, source, and effect size). Moderators from each level were only included if significant heterogeneity existed at the corresponding level. Further, we examined the frequencies of nominal moderators. Based on past recommendations, we excluded Level 4 (sample) and Level 3 (source) nominal moderators that had a count of fewer than 5 in any group and Level 2 (effect sizes) nominal moderators with fewer than 30 in any group (Card, 2012).

Last, we tested Model 2, which included moderators and controls (if conditions of heterogeneity were met). At Level 4 (sample), we included the country location of the sample (0 = *sample not from the United States*, 1 = *sample from the United States*). At Level 3 (source), we included the average family size in the source, percentage of participants in the source that were Caucasian, percentage of participants in the source that were male, percentage of participants in the source that were younger than their sibling, percentage of participants in the source that were the same sex as their sibling, average age spacing between siblings in the source, average age of participants in the source, and whether the source was a published peer-reviewed article (0 = *no*, 1 = *yes*). At Level 2 (effect sizes), we included the parent the PDT is based on, the reporter of the PDT (0 = *parent reported*, 1 = *child reported*), and the domain of the PDT (see Tables 1–4 and Supplemental Tables S11–S14 for more information on which variables were actually included in each model). Each percentage variable was divided by 10 so that 0 reflected 0%, 5 reflected 50%, and 10 reflected 100%. All continuous moderator and control variables were centered at their grand mean. Significant moderator and control effects were further examined via simple slopes by testing continuous moderators at +1 *SD* and −1 *SD* and nominal variables at each level.

It was counterintuitive to include birth order and gender as control variables in models testing the links between PDT and birth order and PDT and gender. Each source, however, could still vary in the percentage of the sample that are older siblings or the percentage that are male participants. Thus, it is important to control for variation in the gender/birth order makeup of each sample/source. For example, the correlation between gender and PDT could potentially be different in sources with fewer male individuals as compared to more male individuals. Means, standard deviations, and proportions

**Table 1**
*Results for Models Examining the Correlation Between Relative Levels of PDT and Birth Order*

| Variable | Model 1 Est. [95% CI] | Model 1 *SE* | Model 2 Est. [95% CI] | Model 2 *SE* |
|---|---|---|---|---|
| Intercept | −.055* [−.097, −.012] | .022 | −.004 [−.150, .143] | .075 |
| Level 4 variables | | | | |
| United States | | | −.084 [−.235, .067] | .077 |
| Level 3 variables | | | | |
| Average family size | | | −.125 [−.261, .011] | .069 |
| Caucasian (%) | | | −.006 [−.029, .018] | .012 |
| Male (%) | | | .009 [−.078, .096] | .044 |
| Younger than sibling (%) | | | −.038 [−.110, .034] | .037 |
| Siblings same sex (%) | | | −.002 [−.007, .002] | .002 |
| Average age spacing | | | −.028 [−.142, .086] | .058 |
| Age | | | .006* [.001, .012] | .003 |
| Peer reviewed | | | .023 [−.121, .166] | .073 |
| Level 2 variables | | | | |
| Parent reported on (reference = mother) | | | | |
| PDT from father | | | −.022 [−.053, .008] | .016 |
| PDT from both parents | | | .260*** [.184, .335] | .039 |
| PDT reported by child (CR) | | | .020 [−.032, .071] | .027 |
| Difference score-based measure | | | .026 [−.020, .071] | .023 |
| Domain of PDT (reference = overall PDT) | | | | |
| Positive PDT | | | −.084* [−.153, −.015] | .035 |
| Negative PDT | | | .033 [−.034, .101] | .035 |
| Resource PDT | | | −.058 [−.135, .020] | .040 |
| Control PDT | | | .197*** [.108, .286] | .045 |
| *Q* residual | 7504.57*** | | 5795.49*** | |
| *F* for omnibus test of moderators | | | 10.26*** | |
| Variance components | | | | |
| Level 4 (samples) | .0039** | | .0098** | |
| Level 3 (sources) | .0033*** | | .0024** | |
| Level 2 (effect sizes) | .0424*** | | .0334*** | |
| Intraclass correlations | | | | |
| Level 4 (samples) | .078 | | .214 | |
| Level 3 (sources) | .066 | | .053 | |
| Level 2 (effect sizes) | .855 | | .733 | |

*Note*. Analysis conducted with four-level multilevel meta-analysis models based on 719 effect sizes from 68 different sources that came from 22 unique samples. $N$ = 12,884 unique participants. In these models, the participant level is considered Level 1, but is not included. Negative effects reflect younger siblings being favored; positive effects reflect older siblings being favored. Est. = bivariate correlation; CI = confidence interval; PDT = parental differential treatment; CR = PDT reported by child; *SE* = standard error.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

**Table 2**
*Results for Models Examining the Correlation Between Relative Levels of PDT and Gender*

| Variable | Model 1 Est. [95% CI] | Model 1 *SE* | Model 2 Est. [95% CI] | Model 2 *SE* |
|---|---|---|---|---|
| Intercept | −.012 [−.045, .021] | .017 | −.115*** [−.191, −.040] | .039 |
| Level 4 variables | | | | |
| United States | | | −.068* [−.128, −.008] | .030 |
| Level 2 variables | | | | |
| Parent reported on (reference = mother) | | | | |
| PDT from father | | | .001 [−.031, .033] | .016 |
| PDT reported by child (CR) | | | .140*** [.074, .206] | .034 |
| Difference score-based | | | .051 [−.010, .112] | .031 |
| Domain of PDT (reference = overall PDT) | | | | |
| Positive PDT | | | .019 [−.025, .062] | .022 |
| Negative PDT | | | .021 [−.025, .068] | .024 |
| Resource PDT | | | .041 [−.009, .090] | .025 |
| Used standardized semipartial correlation | | | .045 [−.017, .107] | .032 |
| *Q* residual | 3343.61*** | | 2241.73*** | |
| *F* for omnibus test of moderators | | | 2.98** | |
| Variance components | | | | |
| Level 4 (samples) | .0050*** | | .0014 | |
| Level 3 (sources) | .0000 | | .0000 | |
| Level 2 (effect sizes) | .0174*** | | .0179*** | |
| Intraclass correlations | | | | |
| Level 4 (samples) | .224 | | .072 | |
| Level 3 (sources) | .000 | | .000 | |
| Level 2 (effect sizes) | .776 | | .928 | |

*Note*. Analysis conducted with four-level multilevel meta-analysis models based on 378 effect sizes from 57 different sources that came from 29 unique samples. $N = 16{,}290$ unique participants. In these models, the participant level is considered Level 1, but is not included. Negative effects reflect daughters being favored; positive effects reflect sons being favored. Est. = bivariate correlation; CI = confidence interval; PDT = parental differential treatment; CR = PDT reported by child; *SE* = standard error.
$^{*} p < .05$. $^{**} p < .01$. $^{***} p < .001$.

for each moderator in all models are summarized in Supplemental Tables 15 and 16.

## Transparency and Openness

The hypotheses and analytic strategy were preregistered with the Open Science Foundation before analysis was conducted. The preregistration, along with all analysis code, data, and coding scheme, can be found at https://osf.io/kxf3v/?view_only=895011acce57411fbc117626f7fcb1bd (Jensen, 2023). There were no deviations from the preregistration.

# Results

## Descriptive Statistics

Descriptive data for the unique samples and sources included in each model are presented separately in Supplemental Tables S3–S10. Across all models, the average age of participants was 19.6 ($SD = 13.9$). Most samples were from the United States (66.7%); all others were from Western Europe or Canada. The participants from the included samples were primarily White ($M$ = 82.4%, $SD$ = 21.9%), female ($M$ = 52.5%, $SD$ = 6.3%), the same gender as their sibling ($M$ = 63.5%, $SD$ = 38.6%), and older than their siblings ($M$ = 53.6%, $SD$ = 11.7%). Represented participants, on average, were 2.80 ($SD = 1.10$) years apart in age from their sibling. Most sources included PDT from both mothers and fathers (82.8%), whereas others only included maternal PDT (13.8%), and others, only paternal PDT (3.4%). Most sources used only child reports of PDT (62.1%), and others used reports from children and parents (19.5%), and some from parents only (18.4%). Most sources measured multiple domains of parenting (74.7%). Across sources that measured multiple domains, all of them included positive interactions, fewer included negative interactions (43.1%), and overall PDT (14.9%). Of sources that only examined one domain of parenting, overall PDT was the most common (74.7%), followed by positive interactions (6.9%) and negative interactions (1.1%). Lastly, the most common way to assess PDT was via perceptions-based measures (42.5%), followed by difference score-based measures (31.0%) and sources that used both approaches (26.4%).

## Birth Order

Results for birth order are found in Table 1. Model 1 showed a negative correlation, indicating a trend toward favoring younger siblings. Significant heterogeneity was found for the overall model and for each level, so we proceeded to moderator analysis (tests included a total of 17 moderators). Model 2 showed an effect of parent gender, specifically the contrast of PDT from both parents compared to PDT from mothers. Simple slopes (see Figure 2 Panel A) revealed that when PDT was assessed as the combined parenting of mothers and fathers, older siblings tended to be favored ($r = .256$, $SE = .084$, $p = .002$). There was no association between birth order and PDT from mothers only ($r = -.004$, $SE = .075$, $p = .963$). In Model 2, effects differed by some domains of parenting. Simple slopes showed that parents tended to favor older siblings in terms of control (i.e., control them less/grant more

**Table 3**
*Results for Models Examining the Correlation Between Relative Levels of PDT and Conscientiousness*

| Variable | Model 1 Est. [95% CI] | Model 1 *SE* | Model 2 Est. [95% CI] | Model 2 *SE* |
|---|---|---|---|---|
| Intercept | .059* [.005, .113] | .027 | .073* [.007, .139] | .034 |
| Level 2 variables | | | | |
| Parent reported on (reference = mother) | | | | |
| PDT from father | | | −.017 [−.036, .001] | .010 |
| PDT reported by child (CR) | | | −.009 [−.044, .027] | .018 |
| Difference score-based measure | | | −.017 [−.053, .019] | .018 |
| Domain of PDT (reference = positive PDT) | | | | |
| Negative PDT | | | .051*** [.026, .075] | .013 |
| Resource PDT | | | −.005 [−.032, .022] | .014 |
| *Q* residual | 495.69*** | | 385.67*** | |
| *F* for omnibus test of moderators | | | 4.58** | |
| Variance components | | | | |
| Level 4 (samples) | .0052*** | | .0051*** | |
| Level 3 (sources) | .0000 | | .0000 | |
| Level 2 (effect sizes) | .0017*** | | .0009** | |
| Intraclass correlations | | | | |
| Level 4 (samples) | .756 | | .844 | |
| Level 3 (sources) | .000 | | .001 | |
| Level 2 (effect sizes) | .244 | | .155 | |

*Note*. Analysis conducted with four-level multilevel meta-analysis models based on 189 effect sizes from 22 different sources that came from eight unique samples. $N$ = 6,938 unique participants. In these models, the participant level is considered Level 1, but is not included. Negative effects reflect less conscientious siblings being favored; positive effects reflect more conscientious siblings being favored. Est. = bivariate correlation; CI = confidence interval; PDT = parental differential treatment; CR = PDT reported by child; *SE* = standard error.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



autonomy; $r$ = .184, *SE* = .067, $p$ = .006). There were no links between birth order and overall PDT ($r$ = −.004, *SE* = .075, $p$ = .963) or differential positive interactions ($r$ = −.088, *SE* = .068, $p$ = .193). Lastly, Model 2 revealed an effect of age. Simple slopes testing showed that the effect was not significant for young adults (+1 *SD*; $r$ = .078, *SE* = .09, $p$ = .395) or for children (−1 *SD*; $r$ = −.085, *SE* = .072, $p$ = .241).

In Model 2, the following moderators were not significant: location of sample (the United States or not), average family size, percentage of sample that was Caucasian, percentage of sample that was male, percentage of the sample that was younger siblings, percentage of the sample that was the same sex as their sibling, average age spacing, if the source was peer reviewed, PDT from father, reporter of PDT, measurement type, negative interactions PDT, and resources PDT.

## Gender

Results for gender are found in Table 2. Model 1 revealed that gender was not associated with PDT. Tests for heterogeneity showed significant variation only at Level 4 and Level 2; thus, we excluded moderators at Level 3 (tests included a total of eight moderators). Model 2 showed a significant effect of reporter of PDT. Simple slopes (see Figure 2 Panel B) showed a negative association when PDT was reported by parents ($r$ = −.115, *SE* = .039, $p$ = .003); that is, parents tended to report favoring daughters. When PDT was reported by children, there was no link between PDT and gender ($r$ = .025, *SE* = .033, $p$ = .450). An effect of country also emerged. For samples from the United States, there was a negative association between PDT and gender ($r$ = −.183, *SE* = .039, $p$ = .000). In countries other than the United States (most of them in Europe), the effect was also negative ($r$ = −.115, *SE* = .039, $p$ = .003), indicating that after controlling for other factors, parents tended to favor daughters, but even more so in the United States.

In Model 2, the following moderators were not significant: location of sample (the United States or not), PDT from father, measurement type, positive interactions PDT, negative interactions PDT, resources PDT, and effect sizes based on semipartial correlations.

## Temperament

Results for temperament are found in Supplemental Table S11. In Model 1, PDT was not associated with temperament. In Model 2, the following moderators were not significant: PDT from fathers, reporter of PDT, measurement type, negative interactions PDT, resources PDT, control PDT.

## Personality

Results for openness are found in Supplemental Table S12. In Model 1, PDT was not associated with openness. In Model 2, the following moderator was not significant: PDT from fathers.

Results for conscientiousness are found in Table 3. Model 1 revealed a positive correlation, suggesting that conscientious children tended to be more favored. Although significant heterogeneity was found at Levels 4 and 2, only moderators at Level 2 were included because of group frequencies in the Level 4 variable (tests included a total of five moderators). Model 2 showed that patterns differed between differential positive interactions and differential negative

**Table 4**
*Results for Models Examining the Correlation Between Relative Levels of PDT and Agreeableness*

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| Variable | Est. [95% CI] | *SE* | Est. [95% CI] | *SE* |
| Intercept | .023* [.002, .043] | .011 | .008 [−.077, .094] | .044 |
| Level 3 variables | | | | |
| Average family size | | | .024 [−.212, .261] | .121 |
| Caucasian (%) | | | −.009 [−.049, .031] | .021 |
| Male (%) | | | .009 [−.091, .108] | .051 |
| Younger than sibling (%) | | | .035 [−.232, .302] | .136 |
| Siblings same sex (%) | | | −.003 [−.007, .002] | .002 |
| Average age spacing | | | −.041 [−.204, .122] | .084 |
| Age | | | .001 [−.010, .011] | .005 |
| Peer reviewed | | | .023 [−.060, .105] | .042 |
| Level 2 variables | | | | |
| Parent reported on (reference = mother) | | | | |
| PDT from father | | | −.003 [−.023, .017] | .010 |
| PDT reported by child (CR) | | | .012 [−.025, .049] | .019 |
| Difference score-based measure | | | −.012 [−.050, .026] | .019 |
| Domain of PDT (reference = positive PDT) | | | | |
| Negative PDT | | | −.007 [−.033, .019] | .013 |
| Resource PDT | | | −.043** [−.072, −.014] | .015 |
| *Q* residual | 360.62*** | | 307.15*** | |
| *F* for omnibus test of moderators | | | 1.21 | |
| Variance components | | | | |
| Level 4 (samples) | .0002 | | .0032 | |
| Level 3 (sources) | .0008** | | .0011 | |
| Level 2 (effect sizes) | .0016*** | | .0014*** | |
| Intraclass correlations | | | | |
| Level 4 (samples) | .060 | | .571 | |
| Level 3 (sources) | .309 | | .191 | |
| Level 2 (effect sizes) | .631 | | .238 | |

*Note*. Analysis conducted with four-level multilevel meta-analysis models based on 192 effect sizes from 23 different sources that came from nine unique samples. $N$ = 7,318 unique participants. In these models, the participant level is considered Level 1, but is not included. Negative effects reflect less agreeable siblings being favored; positive effects reflect more agreeable siblings being favored. Est. = bivariate correlation; CI = confidence interval; PDT = parental differential treatment; CR = PDT reported by child; *SE* = standard error.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

interactions. Simple slopes (see Figure 2 Panel C) showed a positive correlation for positive interactions ($r$ = .073, *SE* = .034, $p$ = .032), meaning that conscientious children tended to have relatively more positive interactions with their parents. A positive association also emerged for differential negative interactions ($r$ = .098, *SE* = .036, $p$ = .007). That is, conscientious children tended to have relatively fewer negative interactions with their parents, but the effect was even stronger than the effect for differential positive interactions. In Model 2, the following moderators were not significant: PDT from fathers, reporter of PDT, measurement type, and resources PDT.

Results for extraversion are found in Supplemental Table S13. There was no association between PDT and extraversion.

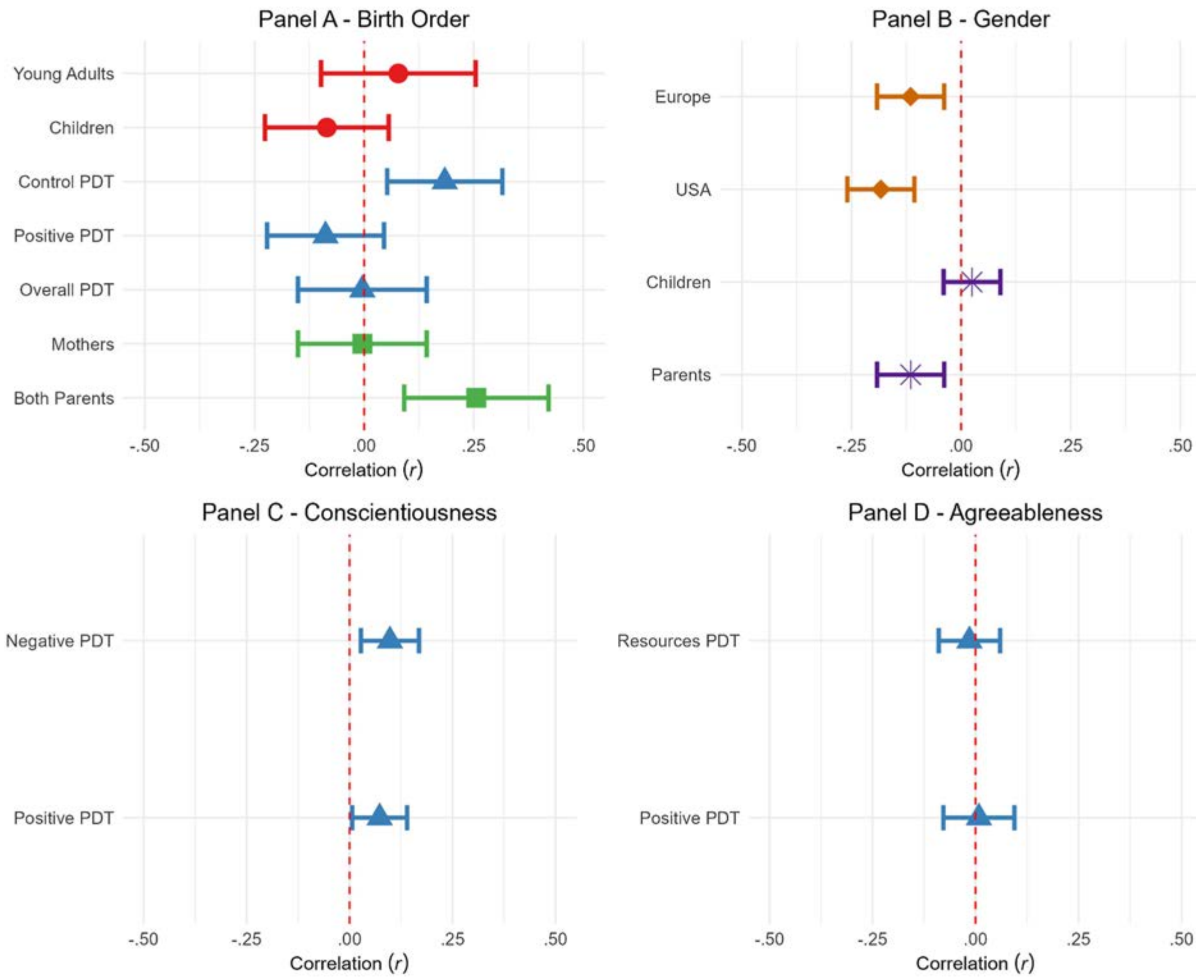
Results for agreeableness are found in Table 4. Model 1 showed a positive association for agreeableness, meaning that on average, the more agreeable children were, they tended to be treated more favorably. Significant heterogeneity was found at Levels 3 and 2, so moderators were tested at those levels (tests included a total of 13 moderators). An effect of domain of parenting emerged. Simple slopes (see Figure 2 Panel D) showed that there was no association for differential positive interactions ($r$ = .008, *SE* = .044, $p$ = .848). There was also no association for differential resources ($r$ = −.015, *SE* = .038, $p$ = .695). In Model 2, the following moderators were not significant: average family size, percentage of sample that was Caucasian, percentage of sample that was male, percentage of the sample that was younger siblings, percentage of the sample that was the same sex as their sibling, average age spacing, average age, if the source was peer reviewed, PDT from father, reporter of PDT, measurement type, and negative interactions PDT.

Results for neuroticism are found in Supplemental Table S14. In Model 1, PDT was not associated with neuroticism. In Model 2, the following moderator was not significant: PDT from fathers.

## Discussion

We conceptualized the present study on the foundation of the child effects model (Bell, 1968; Branje et al., 2010) and the notion that children's characteristics may elicit types of parenting (de Haan et al., 2012; Lengua et al., 2019). In doing so, we focused on within-family differences in parenting. Specifically, we analyzed how birth order, gender, temperament, and personality were linked to PDT. The current literature is heterogeneous in terms of ages studied, the gender of the parent, the reporter of PDT, the domain of parenting considered, and how PDT was measured. Thus, we examined each of these areas as potential moderators. We first discuss each predictor of PDT and moderators as relevant to each predictor. Then we discuss patterns of each moderator across all models.

**Figure 2**
*Deviation Plots for Significant Moderators of Correlations Between Parental Differential Treatment and Birth Order, Gender, Conscientiousness, and Agreeableness*




*Note*. Panel A shows the correlation between PDT and birth order at different levels of significant moderators. Positive effects reflect older siblings being favored; negative effects reflect younger siblings being favored. Panel B shows the correlation between PDT and gender at different levels of significant moderators. Positive effects reflect sons being favored; negative effects reflect daughters being favored. Panel C shows the correlation between PDT and conscientiousness at different levels of significant moderators. Positive effects reflect more conscientious children being favored; negative effects reflect less conscientious children being favored. Panel D shows the correlation between PDT and agreeableness at different levels of significant moderators. Positive effects reflect more agreeable children being favored; negative effects reflect less agreeable children being favored. PDT = parental differential treatment. See the online article for the color version of this figure.



## Birth Order

Based on the existing research (e.g., Salmon et al., 2012; Tucker et al., 2003), we did not offer a directional hypothesis of how birth order would be linked to PDT. A small overall main effect of birth order suggested that, on average, younger siblings receive favorable treatment to a slight degree. In this regard, our findings of within-family differences in parenting are in contrast to between-family studies on parenting that find that parents are more attentive to firstborn infants (Keller & Zach, 2002) and spend more time with firstborns through adolescence (Price, 2008). The small main effect of younger siblings being favored, however, was no longer significant when controls and moderators were added to the model. Indeed, moderator analysis suggests that there is more to the story. Our results suggest that when PDT was based on control or autonomy, older siblings tended to be favored (a small to medium effect). That is, parents tend to be less controlling of or grant more autonomy to older siblings. In childhood, and even into adolescence, older siblings, on average, are more developmentally capable than their younger siblings (Jensen & McHale, 2015). Thus, a higher level of autonomy is developmentally appropriate (Campione-Barr et al., 2015). A challenge that parents face is that differential control, regardless of whether it is developmentally appropriate or not, has been linked to lower self-worth and more problem behaviors among less favored siblings in both childhood

(Deater-Deckard et al., 2001) and adolescence (Feinberg et al., 2000; McHale et al., 2005). In other words, whether differential control is developmentally appropriate or not, siblings may not see it as fair.

Our arguments regarding PDT from both parents and regarding the domain of parenting do not address the wide range of ages included in our models. Of the sources included in the birth order models, the youngest average age of participants was about 5 years old. The oldest average age of participants was nearly 60. Although our models controlled for age, the ideal would have been to test higher level interactions with age (e.g., domain of parenting by age). Only five sources included an average age of participants over 40, and those sources were drawn from only two samples, which precluded the ability to test whether moderated patterns varied at different developmental periods. More work is needed on PDT in mid to later life so that future meta-analyses can include these types of tests.

## Gender

As with birth order, we did not offer directional hypotheses regarding the link between gender and PDT. Our initial main effects model suggested no effects, but our moderator analyses suggest important nuances. First, after controlling for other moderators, our models suggest that parents report they slightly favor daughters over sons (a small effect). Children report no differences. That is, daughters do not perceive that they are favored more than sons, and vice versa. Our findings are somewhat consistent with research between families. A large meta-analysis of parenting differences between boys and girls found that across the board there were no gender differences in parenting, except that in studies published since 1990, parents tend to be more supportive of the autonomy of girls as compared to boys (Endendijk et al., 2016). Other gender and parenting scholars have suggested that when looking at between-family differences, explicit gendered differences in parenting are rare (Mesman & Groeneveld, 2018). These same scholars argue that parents do differ in the implicit gendered messages they give their children (Mesman & Groeneveld, 2018). For example, parents commonly make gender stereotyped comments about story characters to their children (e.g., Endendijk et al., 2014; van der Pol et al., 2015). Those differences in implicit parenting from between-family studies may help explain why our findings showed differences when reported by parents, but not by children. Past meta-analytic data show that girls are significantly higher in effortful control, on average, than boys (Else-Quest et al., 2006). Based on the child effects model (Bell, 1968; Branje et al., 2010), it may mean that girls are easier to parent on average. It is possible that within families, parents are aware that daughters are easier to parent and thus may recognize implicit differences in their parenting. Given that explicit differences in parenting are rare (Mesman & Groeneveld, 2018), parents may not treat their daughters and sons differently enough that siblings recognize those differences.

## Temperament and Personality

Based on existing literature (de Haan et al., 2012; Lengua et al., 2019), we anticipated that easier-to-parent temperaments and the Big Five personality trait of conscientiousness would be linked to favored treatment. We also expected openness, extraversion, and neuroticism to be linked to less favored treatment. We offered no specific hypotheses regarding the personality characteristic agreeableness.

Our findings revealed no main or moderated effects regarding temperament. These null results contrast with between-family research that finds children higher in negative emotionality (Paulussen-Hoogeboom et al., 2007) and lower in effortful control (Spinrad et al., 2012) tend to elicit lower quality parenting. Historically, temperament is a nebulous construct with varied definitions. Although we attempted to code characteristics of temperament around a child effects perspective (Bell, 1968; Branje et al., 2010) and the notion that some characteristics may be easier to parent (Lengua et al., 2019), it is possible that we included too many temperament characteristics. Currently, insufficient work exists between subareas of temperament (i.e., negative emotionality, sociality) to examine specific areas separately. Thus, future studies should explore specific definitions and domains of temperament and how they may individually elicit PDT.

Consistent with our expectations, at the main effect level, parents tend to slightly favor conscientious children (small effect). Unexpectedly, a main effect of agreeableness also emerged (very small effect). Similar to conscientious children, agreeable children may be easier to parent. Agreeable children may tend to acquiesce in the face of potential conflict and may be quick to try to please parents (Costa & McCrae, 1992; Van Heel et al., 2020). Conscientious children may be responsive and responsible (Costa & McCrae, 1992; Huver et al., 2010). The main effect of conscientiousness was qualified by the domain of parenting. Our results show that although conscientious children receive comparatively favored treatment in terms of positive interactions (i.e., affection), they receive even more favored treatment in terms of negative interactions (i.e., conflict). Because conscientious children are likely more aware of and attuned to family patterns and moods (Costa & McCrae, 1992; Huver et al., 2010), they may elicit less conflict with a parent than other siblings may. Our findings with conscientiousness are consistent with some work on between-family links of personality with parenting that find that parents are more affectionate and less reactive to conscientious children in part because the parents of conscientious children feel more competent (Egberts et al., 2015).

Our models found no effects for openness, extraversion, and neuroticism. These null findings are consistent with some between-family research that finds no links between child personality and parenting (Ayoub et al., 2021), and they contrast with other findings that do link openness, extraversion, and neuroticism to parenting (Egberts et al., 2015). Drawing conclusions from our null findings is difficult. Of all our models, these three were based on the fewest number of effect sizes. The smaller number of effect sizes limited the variability in moderators and, in some cases, excluded them from analysis. It is possible that with a larger sample of data, effects would emerge among some moderators. Scholars will also need to consider more complex patterns. Recent research suggests that relative similarity in personality between a sibling and mother may elicit comparatively more autonomy support (Vrolijk et al., 2022). Perhaps parent–child similarity in openness, extraversion, and neuroticism matters more than the child's own levels.

## Patterns Across Moderators

For each of our models, we proposed that several moderators may alter main effects. As noted, not every model had enough variation at

the appropriate level to test all moderators. Regardless, we did see some moderated effects regarding parent gender, reporter of PDT, and domain of parenting. Surprisingly, no effects emerged regarding how PDT was measured. Past research has suggested that PDT as measured by perceptions and PDT as measured by difference scores are correlated, but the link is small (Coldwell et al., 2008; Jensen & Whiteman, 2014). Thus, it is possible that the two measurement approaches reflect different family processes. Our work, however, is consistent with other recent meta-analyses (Jensen et al., 2022, 2023) suggesting that when PDT is examined conceptually as a dependent variable, there are no differences in links between predictors and PDT based on how PDT is measured. Despite these patterns, future studies will need to examine how PDT (as an independent variable) is associated with an array of developmental psychosocial outcomes and how those associations may differ by measurement type.

We also saw some effects across the domain of parenting. For example, a main effect suggested that younger siblings are slightly favored, but moderator analysis suggests that older siblings are favored in terms of control. The domain of parenting was significant in other models too, but the individual simple slopes were not themselves significant. This may be an effect of statistical power. Given the importance of the domain of parenting in other PDT research (e.g., Kowal & Kramer, 1997; Kowal et al., 2006; Shanahan et al., 2008), it likely plays an important role, even if the present study cannot provide more conclusive evidence.

Lastly, our study speaks to the potential developmental aspects of PDT. Two of our models (birth order and agreeableness) were able to examine age as a moderator. In these models, age was either not a significant moderator (agreeableness), or simple slopes effects were not significant for either children or adults (birth order). The current literature notes links between PDT and the adjustment of offspring in childhood (e.g., Meunier, Bisceglia, & Jenkins, 2012) adolescence (e.g., Shanahan et al., 2008), young adulthood (e.g., Jensen et al., 2015), and midlife (e.g., Peng et al., 2018). Despite these consistent links, it is possible that PDT may matter in different ways or manifest in different domains at different stages of life. Although our analysis cannot speak to PDT's developmental influence on adjustment across the life course, our findings suggest that the small effect for agreeable children being favored does not differ from childhood through adulthood. In other words, parents tend to favor the same adult offspring as they do in childhood.

## Limitations

Despite the rigor of our analyses, this study was not without limitations. First, the availability of sources inherently limits our analyses. All available sources for this study were drawn from samples from North America and Western Europe. Although our results likely generalize to these regions, past work shows that findings often do not generalize across countries or cultures (e.g., comparing western and eastern cultures; Apicella et al., 2020). Our article search procedures may have also hindered the inclusion of studies from other countries and cultures. We only included sources reported in English. Other studies may exist that were published in other languages. Ideally, future studies will examine these processes in different cultures, countries, and contexts and include sources in any language. Additionally, although enough data existed to conduct main effects analyses in all models and moderator analyses in most models, we were still limited. This limitation is particularly evident in models for openness, extraversion, and neuroticism. Sample size limitations also impacted our ability to examine additionally important moderating contexts. As seen in our findings with gender and some past studies (e.g., Kowal et al., 2006), parents' and children's perceptions of PDT often vary. This issue is confounded in the intersection of how PDT is measured. Ideally, future studies will examine the reporter of PDT and how it is measured as interacted with other crucial factors such as domain of parenting. Further, we were unable to consider the critical role of fairness. Important work by Kowal and colleagues (Kowal & Kramer, 1997; Kowal et al., 2006) has shown that perceived fairness around differences in parenting is an essential aspect of PDT-related process. Unfortunately, this concept has not yet been studied in a sufficient number of sources to merit meta-analysis.

Our study was also potentially limited by conceptualization and coding choices. As noted, temperament has historically included a wide variety of definitions. We attempted to simplify these approaches by using the child effects orientation (Bell, 1968; Branje et al., 2010) and focusing on traits that may be easier to parent. Different aspects of temperament may matter more than others. Specifically, emotionally negative children may be particularly difficult to parent (Paulussen-Hoogeboom et al., 2007), even compared to other temperaments. Future work, when enough data exist, should strive to break temperament down into individual domains. Another limitation is the strength of our observed effects. For the most part, our effect sizes were small. The reasons why parents treat their children differently are likely more complex and extend beyond the factors explored in this study (Jensen et al., 2022, 2023). Future work will need to continue to explore who is favored or less favored in the family and also explore factors linked to how differently siblings are treated (e.g., age spacing; Rolan & Marceau, 2018).

## Conclusions

Beyond the limitations of the present study, our findings contribute to the literature in meaningful ways. First, our findings support notion from the child effects model (Bell, 1968) that characteristics and traits of offspring may elicit parenting. Our findings specifically suggest that within families, some children may be easier to parent than others. Second, our findings show that the perceptions of family members may differ from one another. The perceptions of parents and offspring may not match, even if based on the same experiences. Our findings also have implications for clinicians and parents. Past work has noted that less favored children tend to have a variety of poorer developmental outcomes, such as worse mental health (Ponappa et al., 2017; Shanahan et al., 2008), greater problem behaviors (Meunier, Bisceglia, & Jenkins, 2012; Rolan & Marceau, 2018), and poorer family relationships (Jensen & McHale, 2017; Kowal & Kramer, 1997). Clinicians working with individuals who display these maladaptive patterns may want to consider the potential role PDT may have played in their development. Our findings provide an idea of which siblings in a family may be prone to be less favored and, thus, at greater risk for maladaptive outcomes: sons, younger siblings (in some cases), the less conscientious, and the less agreeable. Still, caution is warranted because in most cases we were unable to test whether those patterns

look different in children, adolescents, and other life stages. Regardless, the broader literature is clear that PDT can be linked to maladaptive developmental outcomes (Meunier, Bisceglia, & Jenkins, 2012; Rolan & Marceau, 2018), and our findings suggest that individuals' characteristics may play a role in eliciting PDT.

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