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Analysis of Mothers' Parenting Consistency: Associations with Children's Adjustment

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Abstract

While robust literature exists on the association between positive and negative parenting with child outcomes, less is known about the nature of parenting's consistency in this relationship. To examine the relationship between valence and consistency of parenting, and subsequently children's behaviors, data were collected from 167 mothers and their toddler-aged child. Participation involved two time points, 1 year apart. At each, mothers' observational data were obtained via videotape of interactions between mother and toddler, as well as survey data from mothers. Multiple regressions were used to examine 1) parenting's consistency over time, and 2) whether the direction of inconsistency moderated the relationship between inconsistency on child behavior problems. Parenting at Time 1 predicted Time 2 for both valences. Additionally, increases in negative parenting factor scores predicted concurrent increases in children's externalizing. Inconsistency was not related with children's behavior, per se, though results suggest future directions for this research.

Key words: parenting; child behavior; consistency; toddler

Analysis of Mothers' Parenting Consistency: Associations with Children's Adjustment

The quality of parenting children receive in toddlerhood and early childhood affects children's adjustment. Maternal warmth or support (i.e., positive parenting) is associated with fewer child externalizing problem behaviors (Zhou et al., 2002), internalizing behaviors (Van Den Akker et al., 2010), psychopathology (Bilsky et al., 2013), greater cognitive development (Lugo-Gil & Tamis-LeMonda, 2008), and improving academic outcomes (Martin et al., 2013). Conversely, harsh or intrusive parenting behaviors (i.e., negative parenting) are detrimental to children's adjustment. For example, harsh parenting has been associated with increases in children's behavior problems (Wiggins et al., 2015) and poor emotion regulation (Kennedy et al., 2004), and predicted increased distress reactivity from infancy to toddlerhood (Scaramella et al., 2008). Intrusive parenting has been associated with children's negative emotionality (Ispa et al., 2004), poor social functioning (Rubin et al., 2002), and may exacerbate poor attentional focus (Gaertner et al., 2008).

Along with parenting valence, researchers have increasingly become interested in parenting consistency and how it may influence child outcomes. Parenting consistency refers to the stability of parenting behaviors, either positive or negative, over time. Evolutionary theories of child development (e.g., adaptive calibration model [ACM]; Del Giudice et al., 2011) posit the important role environmental stability plays in providing referential context for developing children, and the potential dysregulation an inconsistent environment could engender. More consistent parenting predicts secure attachment in young children (ages 2 to 5-years-old; Coyl et al., 2010) and healthier body mass index (BMI) in children aged 4 to 10-years-old (Jansen et al., 2013). Inconsistent parenting, in contrast, has been shown to be related to children's increased externalizing behavior (Luyckx et al., 2011). Each of these studies differed in their

operationalization of consistency, specifically with regard to whether data were collected at multiple time points or whether retrospective reports were gathered at a single time point. This highlights an important question: What is the best way to model consistency? A brief review of research on change can be instructive when answering this question.

Roberts and DelVecchio (2000) reviewed levels of change over time (albeit in the context of personality traits). They describe the basic two basic levels of change: group-level and person-level, each with two sublevels of analysis. The two most common sublevels of group change are mean-level change and rank-order change. Mean-level refers to how a particular group or sample's average level of a particular construct changes over time. Rank-order refers to how individuals within a group change *relative to other members within the group*; importantly, in the rank-order approach, individual scores are only considered in the context of their group standing. Therefore, a particular individual could exhibit no change over time, but their standing relative to other group members who have changed may fluctuate. So, the "change" being captured here is not person-level.

The two sublevels of person-level change are ipsative (or morphogenic) change and what is simply referred to as intra-individual change. Ipsative change is similar to rank-order change, but considers the context of an individual's profile of attributes and how those attributes change in their rank-order of importance over time. This sort of change is especially relevant to personality psychology, as personality is often assessed in this manner by assessing relative levels of personality sub-traits (e.g., Q-sort technique; Block, 1971). Finally, intra-individual change refers to how individuals change in terms of magnitude on a given measure. This last sublevel is most relevant to the current discussion, as examining direct relationships between a particular parent's consistency and their child's outcomes requires an index of within person

change. Group-level changes in parenting and child outcomes do not give information about the dyad-specific relationship. In a follow-up to Roberts and DelVecchio (2000), Roberts et al. (2001) explored intra-individual change as indexed by the Reliable Change Index (RCI; Jacobson & Truax, 1991), which gives each individual in a sample a standardized change score (exact calculation provided below). While there exist other methods for modeling the relationship of intra-individual change to other outcomes (e.g., multilevel modeling), RCI provides a single point estimate that can be easily entered into simpler models, such as basic linear regressions. RCI thus offers a potentially useful index of parenting's consistency that could be related to child outcomes. These levels of analysis are not exhaustive. Rather, they provide a basic foundation for understanding which level or sublevel is most relevant to a particular research question. Other forms, such as structural change over time, are also useful depending on the research context. For example, theory may suggest that a construct is not the same qualitatively over time, and thus change at the group or person level would need to account for these structural changes. As it relates to parenting valence, the developmental age of the child may alter what parenting practices are the most beneficial or detrimental to a child's outcomes (i.e., structural change). However, structural change in parenting would not be expected to be found within children's developmental periods, as children's demands should remain relatively constant throughout.

Returning to parenting consistency, an additional issue with the findings above is they did not consider valence of parenting when measuring consistency. For example, Jansen et al. (2013) asked parents about the consistency of their parenting practices, but not specifically what those practices were (e.g., "If you tell your child she will get punished if she doesn't stop doing something, but she keeps doing it, how often will you punish her?"). Therefore, a parent could

ostensibly be rated as consistent or inconsistent regardless of whether their specific practice was positive or negative.

In the few studies that have considered associations between parenting valence and consistency, past positive parenting has been shown to predict future positive parenting for various child age groups (McNally et al., 1991; Holden & Miller, 1999; Forehand & Jones, 2002), and tends to show cross-situational stability (Metsäpelto et al., 2001). While slight decreases in positive parenting have been observed as children reach middle childhood, and then adolescence, rank order amongst parents tends to be stable over time. Additionally, positive parenting may be more stable for parents who have experienced fewer stressful life events (Matte-Gagné et al., 2012).

Research addressing both valence and consistency has suggested that negative parenting may not be as consistent as positive parenting. Kim et al. (2010) found that mothers' harsh parenting when children were 1-year-old predicted harsh parenting two years later, though correlations between time points were modest. Madigan et al. (2016) observed mothers of newborns across the first two years of life and also found negative parenting correlated only modestly across time points. Dallaire and Weinraub (2005), too, when observing families four times per year for six years, found small (though significant) associations of negative parenting throughout children's first six years. The discrepancy in findings allow for multiple explanations.

Dallaire and Weinraub (2005) suggest that negative parenting practices may be associated with transient mood states, whereas positive parenting may be more related to stable personality traits. This position fits well with findings that have demonstrated less relative consistency for negative parenting. However, other researchers have posited contrasting theories

that would predict negative parenting stability commensurate with positive parenting over time. For example, Atzabia-Poria et al. (2014) found that maternal temperament, which is generally considered a stable trait, is predictive of negative parenting behaviors. Specifically, mothers high in negative affectivity ratings and mothers low in effortful control ratings both are more likely to use negative parenting. Additionally, children's temperaments are likely also contributing to parenting behaviors. As children calibrate to their parent's behaviors as discussed above, parents, too, calibrate to their children. Infants' negative affectivity is related to maternal negative parenting at toddlerhood, such that higher infant negative affectivity predicts more negative parenting later (Bridgett, et al., 2008).

Importantly, several of these studies above that consider both valence and consistency do not contain longitudinal data or change scores, which would seem optimal for establishing consistency over time. Additionally, though these studies on negative parenting consistency employed observational measures, a substantial portion of the positive parenting studies above were comprised of self-report data, despite findings that observational methods may be superior to self-report, particularly in low-income samples which may contain higher proportions of confounds to reporting accuracy and congruence (e.g., cultural differences between participants and researchers in interpretation of behaviors; Herbers et al., 2017).

Examining parenting consistency from the intra-individual level can help extend the consistency literature by answering an important remaining question: namely, what is the combined contribution of parenting consistency and valence to children's behavioral outcomes? Again, the intra-individual approach to change is effective here as it allows for examination of dyad-specific relationships between parenting consistency and child behavior. An ideal study would examine both positive and negative parenting change over time and explore behavioral

effects on children within the same sample, though few studies have accomplished this. In one example that does satisfy these criteria, Landry et al. (2001) found that greater maternal positive parenting consistency through late childhood predicted greater child cognitive development in adolescence. Unfortunately, studies addressing parenting valence and consistency in the context of child outcomes have been few and far between. Additionally, the studies that exist typically have samples comprised of older children on the verge of adolescence. Given the individual associations of parenting consistency and valence during toddlerhood and early childhood with later child adjustment, an examination of the interactions between consistency and valence, and how these interactions influence early child adjustment, is needed. Based on the literature reviewed to this point, there would seem a clear need for longitudinal studies of parenting consistency *and* valence employing observational measures, and how that parenting affects young children from the same sample.

The Present Study

The present study examined the consistency of observed positive and negative parenting in a sample of mothers and their children over a one-year period beginning when children were two years old. This study examined the relationship between consistency-valence interactions and children's problem behavior. The study's specific hypotheses were:

Hypothesis 1a: Past positive parenting would be a moderate-to-strong predictor of future positive parenting.

Hypothesis 1b: Past negative parenting would be a negligible-to-weak predictor of future negative parenting.

Hypothesis 2: Inconsistent parenting (positive and negative) would predict greater amounts of child internalizing and externalizing behaviors.

Hypothesis 3a: Children receiving consistently high levels of positive parenting would exhibit fewer internalizing and externalizing behaviors than children receiving either consistently low or inconsistent levels of positive parenting.

Hypothesis 3b: Children receiving consistently low levels of negative parenting would exhibit fewer internalizing and externalizing behaviors than children receiving either consistently high or inconsistent levels of negative parenting.

Affirmative support for hypotheses 1a and 1b would corroborate past studies that positive parenting is consistent over time, and elucidate the nature of negative parenting's consistency over time. The terms "negligible," "weak," "moderate," and "strong" in this context refer to Cohen's (1988) range of correlation strength, such that negligible equals 0.00-to-0.09, weak equals 0.10-to-0.29, moderate equals 0.30-to-0.49, and strong is greater than 0.50. Hypothesis 2 examined the effect consistent parenting (independent of direction) has on young children's problem behaviors. Hypotheses 3a and 3b explored the relationship between consistency-valence interactions and children's problem behaviors.

Regarding hypotheses 1a and 1b, certain parent demographics are related to positive and negative parenting. Low-income, single parents, for example, tend to use less positive parenting (Rafferty & Griffin, 2010) and more negative parenting (Zalewski et al., 2012), relative to non-single parents. Therefore, considerations must be given to these potential confounds.

Regarding hypotheses 2, 3a, and 3b, in which children's problem behaviors are the outcome variable of interest, it is important to understand the relationship between internalizing and externalizing behaviors. Specifically, differentiating between the two kinds of symptoms can be difficult due to both phenomenological and methodological issues. While internalizing is typically seen as inward or self-directed behaviors, and externalizing outward or other-directed

behaviors, they share antecedent temperamental traits, such as poor emotion regulation (Eisenberg et al., 2001). Studies of young children (pre-school aged) have revealed that as many as 48% of children exhibit some form of both internalizing and externalizing behaviors, as opposed to exclusively one form or the other (Willner et al., 2016). Both forms also share similar risk factors for development, one of which is living with a low-income family (Fanit & Henrich, 2010). Data collection methods can also provide challenges for differentiating between internalizing and externalizing, as individual reporters tend to conflate the two kinds of symptoms (Lilienfeld, 2003). This has led to some researchers collapsing internalizing and externalizing factors into a single "problem behaviors" measure, especially when working with very young children, when these differences can be most difficult to differentiate (Barnett & Scaramella, 2015). For these reasons, the present study explored the relationship between internalizing and externalizing behaviors.

It is also important to note that both children's age and sex are related to problem behaviors. Regarding age, children tend to exhibit more of both internalizing and externalizing as they age (Bongers et al., 2002). While sex differences have been observed in children as young as preschool age, with females tending to exhibit more internalizing and males more externalizing (Rosenfield, 2002), reliable sex differences in toddlerhood are not always found, potentially due to less differentiation in temperamental differences in very young children (Sterba et al., 2007). Considering the nuanced relationship of internalizing and externalizing, any examination of parenting's association to child problem behaviors must be sensitive to this relationship, whether focusing on parenting valence as discussed above or another construct. Therefore, children's sex and age were examined as potential confounds in the present study's analyses.

Method

Participants

Participants (*N* = 167 mother-toddler dyads) were recruited for a longitudinal study involving mothers with a toddler-aged child and an older child. The older sibling was enrolled in a Head Start program in the southeastern United States. Families were asked to complete three videotaped assessments over a two-year period. For the purposes of this study, only data from the first and second assessments were analyzed. Participation was contingent on consent to being videotaped, as mothers' behavior was coded in lab after each visit. Of the 167 participating families, 152 completed both the first and second assessments. Families that did not participate in the second assessment did not differ significantly from families that did participant on any demographic variables, suggesting that missing data did not systematically affect particular families. Mothers' average age at the first assessment was 25.2 years, *SD* = 3.30, range = 20 - 35; toddlers' average age at first assessment was 24.1 months, *SD* = 1.75, range = 20 - 34; 57% female. Families in this sample were predominately Black (88%), and approximately 50.7% of mothers were single and never married. Income to poverty ratio, or the ratio of income to the federal poverty threshold, was used to determine families' financial standing. A ratio of 1.0 indicates that a family's income is equal to the poverty line; less than 1.0 indicates income is less than the poverty line. The mean income to poverty in the current sample was 0.99, *SD* = .65, suggesting that the majority of families were living near or at the poverty line. Table 1 summarizes mothers' and children's demographic information.

Procedure

An Institutional Review Board from the principal investigator's affiliated institution approved all study procedures and measures. All procedures and measures took place during

Table 1

Mothers' and Children's Demographic Information

Information	Time 1				Time 2			
	n	%	*M*	*SD*	*n*	%	*M*	*SD*
Mother's age (years)	152		25.2	3.30	152		26.1	3.38
Relationship status								
Single	89	59			94	62		
Not-single	63	41			58	38		
Race								
Black	133	88			16	88		
Other	16	11			133	11		
Income to poverty ratio			0.98	0.63			0.94	0.63
Child's age (months)	152		24.1	1.75			35.8	2.20
Child's sex								
Male	66	43			66	43		
Female	86	57			86	57		

videotaped in-home visits with mothers and their children. A graduate research assistant (GA) led each visit, with the aid of two undergraduate research assistants (UA; one videotaped the entire visit after mothers' consent was obtained, while the other provided babysitting for the older child during assessments). The first assessment (Time 1) took place when the participating child was approximately 24-months-old. The next assessment (Time 2) used in this study occurred one year later, M = 11.4 months, SD = 3.84, near each child's third birthday. Each assessment lasted approximately 2 hours.

At each visit, mothers first completed questionnaires about themselves and their children, and then two interactional tasks with their children: a puzzle task (5 minutes) and matching game (6 minutes). The research team designed these tasks for the purposes of this study, though both the puzzle task and matching task are similar to methods used in previous studies (Hummel & Gross, 2001; McHale et al., 2000, respectively). During the first task (puzzle), an experimenter presented the child with a puzzle while mothers looked on. Mothers were instructed to let the child try to solve the puzzle on their own, but to offer any help they believed their child needed. In the second activity, the GA spent 3 minutes teaching mothers a game in which pieces of plastic cookies were matched and snapped together. Mothers then spent the remaining 3 minutes teaching their children to play the game. Tasks were done in this order for all participants, at each time point.

Measures

Positive and Negative Parenting

Mothers' parenting was assessed during the two interactional activities described above. For each task, video coders rated mothers' parenting using 6 different codes (supportive engagement, positive regard towards child, sensitivity/supportive presence, negative regard

towards child, intrusiveness, and stimulating child's cognitive development; revised from scales developed in the Eunice Kennedy Shriver National Institute of Child Health and Human Development's [NICHD] Study of Early Child Care and Youth Development [SECCYD; NICHD Early Child Care Research Network, 1999]). Each code was rated on a 7-point scale (1 = None to 7 = Very High), with the exception of supportive engagement. Supportive engagement was scored on a 7-point scale (1=Very High to 7=None), and then reverse scored for data analyses. Two criterion coders trained all video coders until intraclass correlation (ICC) across all coders exceeded 0.80. Once ICC was satisfied, 30% of videos were randomly selected for double coding. Coder pairs for each double coded video met to reconcile discrepancies until a final consensus was made for each video.

The present study considered only parenting scores from the puzzle task. This decision was made due to low reliability statistics (Chronbach's α) on the matching task, specifically for Time 1 negative parenting, $\alpha = 0.69$, and Time 2 positive parenting, $\alpha = 0.68$. The puzzle task yielded higher reliabilities throughout Times 1 and 2 positive parenting, $\alpha = 0.82, 0.79$, respectively, and Times 1 and 2 negative parenting, $\alpha = 0.74, 0.71$, respectively. Mothers' scores from intrusiveness and negative regard ratings for the puzzle task were combined to create negative parenting factor scores (described below). Higher scores on the negative parenting factor represent parent-centered, inappropriately harsh, affectively negative, and possibly over stimulating parenting behaviors. Similarly, mothers' scores from positive regard, sensitivity, cognitive stimulation, and supportive engagement ratings for the puzzle task were combined to create positive parenting factor scores. Like the negative parenting factor, higher scores on the positive parenting factor represent supportive, affectively positive, and appropriately stimulating parenting behaviors.

Problem Behavior

At each time point, mothers completed the Child Behavior Checklist for ages 2-3 years old (CBCL 2-3; Achenbach, 1992). Mothers rated children's behaviors over the previous 2-month period on a 3-point scale (0 = not at all true to 2 = always or often true). An internalizing behavior score comprised the mean of 25 items across two dimensions: withdrawn behaviors and anxious/depressed behaviors, $\alpha = 0.85$ for both time points. An externalizing behavior score comprised the mean of 26 items across two dimensions: aggressive behaviors and destructive behaviors, $\alpha = 0.90$ for both time points.

As discussed above, internalizing and externalizing can be difficult to differentiate in very young children. Due to strong correlations between internalizing and externalizing within time points (see Table 2), a single "problem behavior" score was calculated for each child by taking the average of their respective internalizing and externalizing scores. (An examination of each internalizing and externalizing's subscale dimensions found a similar pattern of correlations; see Table 3).

Table 2

Internalizing and Externalizing CBCL Dimension Correlations

Subscale	*M*	*SD*	1	2	3	4
1. Time 1 internalizing	0.54	0.30	-			
2. Time 1 externalizing	0.70	0.34	0.64*	-		
3. Time 2 internalizing	0.53	0.28	0.54*	0.44*	-	
4. Time 2 externalizing	0.67	0.34	0.34*	0.56	0.71*	-

* $p < 0.05$.

Table 3

CBCL Subscale Correlations

Subscale	*M*	*SD*	1	2	3	4	5	6	7	8
1. Time 1 withdrawn	0.46	0.31	-							
2. Time 1 anxious/depressed	0.62	0.34	0.68*	-						
3. Time 1 destructive	0.60	0.33	0.52*	0.41*	-					
4. Time 1 aggressive	0.79	0.41	0.65*	0.57*	0.70*	-				
5. Time 2 withdrawn	0.51	0.75	0.19*	0.20*	0.06	0.12	-			
6. Time 2 anxious	0.60	0.32	0.37*	0.46*	0.28*	0.41*	0.68*	-		
7. Time 2 destructive	0.62	0.76	0.09	0.11	0.13	0.11	0.91*	0.45*	-	
8. Time 2 aggressive	0.79	0.40	0.37*	0.30*	0.46*	0.56*	0.73*	0.67*	0.66*	-

* $p < 0.05$.

Other Measures

Because both parental relationship status and income have been shown to be related to parenting behaviors (see above), measures of each were included in a bivariate correlation analysis with outcome variables of interest to assess whether to include them in the subsequent analyses as potential confounds (Table 4). A dichotomous variable was created which categorized mothers who

Table 4

Positive and Negative Parenting Factor Score Correlations

Subscale	*M*	*SD*	1	2	3	4	5	6	7	8
1. Time 1 positive parenting	0.00	0.94	-							
2. Time 1 negative parenting	0.00	0.91	-0.69*	-						
3. Time 2 positive parenting	0.00	0.89	0.62*	-0.30*	-					
4. Time 2 negative parenting	0.00	0.85	-0.17*	0.42*	-0.52*	-				
5. Time 1 relationship status[a]			0.22*	-0.17*	0.21*	-0.10	-			
6. Time 2 relationship status[a]			0.31*	-0.26*	0.29*	-0.15	0.60*	-		
7. Time 1 income to poverty	0.99	0.65	0.07	-0.01	0.16*	-0.04	-0.03	0.00	-	
8. Time 2 income to poverty	0.94	0.63	0.01	-0.01	-0.01	0.04	0.08	-0.10	0.30*	-

[a] Dichotomous variable (0 = single, 1 = not single).

* $p < 0.05$.

were single vs. not-single. While the *total* number of single mothers between Times 1 and 2 only increased by 5 (and not-single mothers decreased by 5, respectively), an inspection of crosstabs between these variables revealed that a total of 29 mothers' relationship status changed between Times 1 and 2 (either single to not-single, or vice versa). A Pearson's chi-square test confirmed that this change in relationship status was significant, $\chi^2 = 55.40$, $df = 1$, $p = 0.000$. Therefore, dummy codes for relationship status were created whereby mothers could belong to one of four groups that accounted for status at both time points (T1single-T2single; T1single-T2not-single; T1not-single-T2single; and T1not-single-T2not-single).

For models in which parenting was the outcome variable, income to poverty ratio was included as a continuous variable. Despite findings that maternal race is related to parenting (e.g., Valentino et al., 2012), the extreme proportion of Black mothers in this sample cast doubt onto the ability to detect or reasonably interpret any associations between race and parenting; therefore, race was not included as a confound in subsequent analyses. Finally, children's sex and age were examined as potential confounds of problem behaviors (see Table 5).

Table 5

Problem Behaviors Correlations

Subscale	*M*	*SD*	1	2	3	4
1. Time 1 problem behaviors	0.61	0.29	-			
2. Time 2 problem behaviors	0.6	0.29	0.56*	-		
3. Child Sex[a]			-0.07	-0.17*	-	
4. Child age[b]			0.02	0.09	0.13	-

[a] Dichotomous variable (0 = male, 1 = female).

[b] See Table 1 for *M* and *SD*.

* $p < 0.05$.

Analytic Plan

Hypotheses 1a and 1b

Hypotheses 1a and 1b address the nomothetic (i.e., group level) question of parenting consistency. These hypotheses were tested with multiple regression analyses. Positive and negative parenting factor scores were examined as dependent variables in separate models. While each is significantly correlated with the other (see Table 4), positive and negative parenting are considered discrete dimensions, even when not truly orthogonal (Dallaire et al., 2006).

To account for potentially problematic multicollinearity in subsequent regression analyses, the variance inflation factors (VIF), which is a measure of multicollinearity between independent variables in a given model, is reported in each regression's independent variables (see Tables 7-12). While no "rule of thumb" VIF cutoff values are prescribed, values between 1.0 (the VIF minimum) and 3.0 typically indicate that multicollinearity is not substantially impacting interpretability of a given independent variable (Thompson et al., 2017).

Diagnostic analyses were run on the data to ensure assumptions of regression were met. For each model, Time 1 parenting (negative or positive) served as the independent variable, on which the same parenting construct at Time 2 was regressed. To account for the significant associations between positive and negative parenting, Time 1 negative parenting was added as a covariate when examining Time 2 positive parenting; likewise, Time 1 positive parenting was added to Time 2 negative parenting analyses. Additionally, each model controlled for relationship status and income to poverty ratio confounds.

Consistency was operationalized as the partial correlation between Time 1 parenting and Time 2 parenting. Partial correlations are preferred in these analyses (as opposed to beta

coefficients) for two reasons. First, beta coefficients are susceptible to inflation when there is multicollinearity between independent variables, inflation that partial correlations buffer against. Second, partial correlations allow for more objective interpretations (similar to interpretation of simple bivariate correlation) which can more easily be compared across models using the range of values listed above. Similar to beta coefficients, partial correlations take into account the relationship between a predictor of interest and outcome relative to the combined association between the predictor of interest and other predictors in a given model. Cohen's f^2 is also reported for each model as a measure of effect size (i.e., the combined effect of all independent variables on the dependent variable).

The strength and direction of the partial correlation for positive and negative parenting in their respective models indicate the consistency of each, after controlling for covariates and confounds. A significant positive partial correlation for Time 1 positive parenting indicates that higher levels of positive parenting behaviors at Time 1 predict higher positive parenting behaviors at Time 2 by a factor of the correlation's value. Higher positive values of the correlation indicate that parenting behaviors between Time 1 to Time 2 were more consistent for the sample as a whole, after controlling for covariates and confounds. Non-significant and significant negative partial correlations were considered indicative of inconsistency between Time 1 and Time 2 parenting behaviors. Negative partial correlations were interpreted this way because they indicate that increases in parenting at one time point are associated with decreases in parenting at the next.

Hypothesis 2

To determine if individuals' parenting consistency was associated with child behavioral outcomes, an idiographic (i.e., individual) measure of parenting consistency was obtained using

the Reliable Change Index (RCI; Jacobson & Truax, 1991) for each parent's positive and negative parenting factor scores. RCI was developed (and has been primarily used) in a clinical context, and establishes whether an individual's current scores have demonstrated statistically significant change compared to the same individual's past scores (i.e., intra-individual change). For the current study, RCI was selected to index change in parenting scores from past to present. RCI values are generated by first calculating the standard error of measurement (SE_M) for the measure used. SE_M is calculated by multiplying the sample scores' standard deviation by the square root of 1 minus the measure's reliability (typically Chronbach's α): $SE_M = SD * \sqrt{(1 - \alpha)}$. Chronbach's α can be used for reliability of factors when the factor structure is parallel (i.e., factor loadings and error variances are all homogeneous across factor; Reuterberg & Gustafsson, 1992). However, when the factor structure is congeneric (i.e., heterogeneous factor loadings and error variances), ρ provides an unbiased estimate of factor reliability. Calculating ρ can be done with the following formula: ρ = [sum(squared factor loadings)] / [sum(squared factor loadings) + sum(factor indicator error variances)]. Due to the congeneric factor structure of both positive and negative parenting, ρ was substituted for Chronbach's α as reliability coefficient in SE_M computation. Next, the standard error of the difference scores (SE_{Diff}) is calculated by taking the square root of 2 times the squared SE_M: $SE_{Diff} = \sqrt{(2 * (SE_M)^2)}$. RCI is calculated by dividing the difference of Time 2 score and Time 1 score by SE_{Diff}: RCI = (Time 2 – Time 1) / SE_{Diff}.

Typically, the absolute value of each participant's RCI is compared to a critical RCI value to determine statistical significance. To test significance with 95% confidence (i.e., 95% of samples would exceed critical value if actual change is present), critical RCI is calculated by multiplying SE_{Diff} by 1.96 (the standard deviations from the mean of a normal distribution that covers 95% of the distribution): $RCI_{(.05)} = 1.96 * SE_{Diff}$. However, for the purposes of this study,

RCI values will be used as a continuous measure of change, as opposed to making a dichotomous decision of whether change has occurred for each individual.

In order to examine change free of directionality, a squared term for each of positive and negative parenting RCIs was calculated. Deviations from zero in either direction (i.e., inconsistency) are expected to be associated with problem behaviors. Therefore, the parabolic shape of a quadratic function was determined to best model this change. Specifically, a convex shape is hypothesized. Because RCI is standardized, it does not require additional mean-centering.

Multiple regression was used to determine whether consistency was associated with children's problem behaviors by regressing Time 2 problem behavior scores on each of positive and negative parenting RCI-squared. The lower order RCI term for each of positive and negative parenting RCI-squared was included in the respective regressions. Children's sex was added as a potential confounding variable, and Time 1 problem behaviors were added to account for temporal change in problem behaviors. A significant positive partial correlation for either RCI-squared term would indicate a convex shape, such that scores deviating from the lowest point of the respective lower-order RCI are associated with increased problem behaviors. Significant simple slopes of RCI at points away from the mean in each direction would demonstrate that inconsistency is associated with increased problem behaviors.

Hypotheses 3a and 3b

The final analyses used multiple regression to examine how consistency of positive and negative parenting were associated with children's problem behaviors. As before, positive and negative parenting were examined separately. Time 2 problem behaviors were regressed on each of Time 1 positive parenting (controlling for Time 1 negative parenting) and Time 1 negative

parenting (controlling for Time 1 positive parenting). Models also controlled for Time 1 problem behaviors, as well as children's sex, for the same rationale as regressions above (hypothesis 2). Additionally, these models included an interaction variable between Time 1 and Time 2 parenting in order to assess how consistency of positive and negative parenting may influence child outcomes.

For each significant interaction, the simple slopes of Time 1 parenting were tested at high and low levels (+/- 1 *SD* above the mean) of Time 2 parenting. In regard to the models of positive parenting, a significant negative simple slope of Time 1 parenting at high Time 2 parenting would indicate that higher levels Time 1 positive parenting approaching levels of Time 2 would be associated with decreased problem behavior. In other words, parents high in positive parenting at both time points would have children with the fewest problem behaviors. A negative simple slope for Time 1 positive parenting would likely be seen at all levels of Time 2 positive parenting, as positive parenting is associated generally with fewer problem behaviors. The prediction here is that the magnitude of the negative simple slope will be greater for parents high on Time 2 positive parenting, as they would be demonstrating not only the highest mean levels of positive parenting, but also consistent parenting over time. Conversely, significant Time 1 negative parenting simple slopes would be expected to be positive for all levels of Time 2 negative parenting, as higher levels of negative parenting are expected to be associated with increases in problem behaviors. However, the highest simple slope magnitude is expected to be for mothers at low Time 2 negative parenting. This is because, while higher levels of negative parenting are associated generally with more problem behaviors, the more negative parenting a low Time 2 mother uses at Time 1, the more inconsistent their negative parenting behaviors are over time.

Results

Hypotheses 1a and 1b

Confirmatory factor analysis run in MPlus statistical software (Muthén & Muthén, 2012) yielded acceptable fit for a model which simultaneously loaded maternal sensitivity, positive regard, engagement, and stimulation of cognitive development to a positive parenting factor, and loaded maternal intrusiveness and negative regard to a negative parenting factor, at each time point. Sensitivity was assigned to cross-load on the negative parenting factor, as a chi square difference test showed that cross-loading sensitivity significantly improved model fit, χ^2_{Diff} = 45.50, df = 2, p = 0.000. While the chi-square test suggests the model did not fit the data perfectly, χ^2 = 60.93, df = 40, p = 0.018, the combination of other fit statistics, RMSEA = 0.056 [90% CI (0.024, 0.083)]; CFI = 0.971; SRMR = 0.058, in addition to moderate to strong factor loadings (see Table 6), support retaining the two-factor model. Additionally, each factor had adequate reliability (T1 positive parenting ρ = 0.97; T2 positive parenting ρ = 0.90; T1 negative parenting ρ = 0.88; T2 negative parenting ρ = 0.84), as well as factor congruence between time points (positive parenting factor r_c = 0.99; negative parenting factor r_c = 0.99). This factor structure was used to calculate a positive parenting and negative parenting factor score for each mother at each time point. These factor scores, which were calculated with weighted indicators versus using a simple average of indicators, were used in place of parenting raw scores for all analyses.

Bivariate correlation analyses revealed one significant correlation between continuous demographic variables and Time 2 parenting. Specifically, Time 2 positive parenting and Time 1 income to poverty ratio were significantly positively correlated, Pearson's r = 0.16, p = 0.048, suggesting that mothers with higher income to poverty ratio exhibit more positive parenting

Table 6

Parenting Factor Loadings Times 1 and 2

Indicator	Time 1			Time 2		
	Standardized estimate	*S.E.*	2-tailed *p*	Standardized estimate	*S.E.*	2-tailed *p*
			Positive Parenting Factor			
Sensitivity	0.684	0.067	0.00	0.709	0.090	0.00
Stimulates cognitive development	0.609	0.057	0.00	0.602	0.060	0.00
Supportive engagement	0.733	0.049	0.00	0.745	0.057	0.00
Positive regard	0.720	0.043	0.00	0.606	0.050	0.00
			Negative Parenting Factor			
Intrusion	0.844	0.047	0.00	0.812	0.076	0.00
Negative regard	0.699	0.063	0.00	0.675	0.080	0.00
Sensitivity	-0.364	0.074	0.00	-0.363	0.100	0.00

behaviors when their children are older. A paired-sample *t*-test did not show a significant difference between mean values of Time 1 and Time 2 income to poverty ratio, $t = 0.90$, $df = 144$, $p = 0.371$, 95% CI [-0.07, 0.18]. However, these two measures were weakly to moderately correlated, $r = 0.30$, $p = 0.000$, which suggests that while the sample's average income to poverty ratio did not change, there may have been changes within some families. Analysis of variance (ANOVA) revealed a significant relationship between Time 2 positive parenting and mothers' relationship status, $F = 4.57$, $p = 0.004$, $\eta^2 = 0.09$. Regressing Time 2 positive parenting on relationship status dummy codes revealed significant relationships between parenting and both the reference group (single at both Times 1 and 2), $b_i = -0.23$, $p = 0.026$, and mothers who were not-single at both time points, $r_{partial} = 0.29$, $p = 0.000$. This suggests that mothers who were not-single at both time points used significantly more positive parenting than mothers who were single at both time points. This, combined with the results above, led to the decision to control for both Time 1 income to poverty ratio and relationship status across time points in both models of parenting consistency (controls were included in negative parenting model for the purpose of interpretability between models, despite these variables not significantly correlating with Time 2 negative parenting).

While controlling for significant covariates and confounds, regressing Time 2 positive parenting on Time 1 positive parenting revealed a strong significant positive relationship between the two variables, $r_{partial} = 0.53$, $p = 0.000$. The overall model explained a large portion of the variance in Time 2 parenting, $R^2 = 0.392$, *S.E.* = 0.716, $f^2 = 0.643$. Time 1 negative parenting was also positively associated with Time 2 positive parenting, $r_{partial} = 0.22$, $p = 0.010$, such that greater early negative parenting was associated with greater later positive parenting. Of the income and relationship status confounds controlled for, Time 2 positive parenting was

only significantly related to mothers who were not single at either time point (compared to mothers who were single at both time points), such that not-single mothers were more likely to use positive parenting, $r_{partial} = 0.17$, $p = 0.048$. No interaction between Time 1 positive parenting and the Time 1 negative parenting covariate was detected. Table 7 summarizes the final regression output.

Table 7

Regression: Time 2 Positive Parenting on Time 1 Positive Parenting

Variable	Partial Correlation	*S.E.*	*p*	VIF
Time 1 positive parenting	0.53	0.09	0.000	2.030
Time 1 negative parenting	0.22	0.09	0.010	1.939
Time 1 Single/Time 2 not-single[a]	0.05	0.22	0.544	1.082
Time 1 Not-single/Time 2 single[a]	0.01	0.19	0.877	1.091
Time 2 Not-single/Time 2 not-single[a]	0.17	0.14	0.048	1.246
Time 1 Income to poverty	0.15	0.10	0.068	1.024

[a] Dummy variables; reference group = Time 1 single/Time 2 single.

While controlling for significant covariates and confounds, regressing Time 2 negative parenting on Time 1 negative parenting also revealed a significant positive relationship of moderate strength between the two variables, $r_{partial} = 0.41$, $p = 0.000$. The overall model explained a medium portion of the variance in Time 2 parenting, $R^2 = 0.203$, *S.E.* = 0.803, $f^2 = 0.255$. Time 1 positive parenting was also positively associated with Time 2 negative parenting, $r_{partial} = 0.23$, $p = 0.007$, such that greater early positive parenting was associated with greater later negative parenting. Neither relationship status nor income controls were significantly associated with Time 2 negative parenting, nor was an interaction between Time 1 negative and the Time 1 positive parenting covariate detected. Table 8 summarizes the final regression output.

Table 8

Regression: Time 2 Negative Parenting on Time 1 Negative Parenting

Variable	Partial Correlation	*S.E.*	*p*	VIF
Time 1 negative parenting	0.41	0.10	0.000	1.939
Time 1 positive parenting	0.23	0.10	0.007	2.030
Time 1 Single/Time 2 not-single[a]	0.02	0.25	0.825	1.082
Time 1 Not-single/Time 2 single[a]	0.03	0.22	0.753	1.091
Time 2 Not-single/Time 2 not-single[a]	-0.12	0.16	0.175	1.246
Time 1 Income to poverty	-0.07	0.11	0.395	1.024

[a] Dummy variables; reference group = Time 1 single/Time 2 single

Hypothesis 2

Bivariate correlation analysis revealed significant associations between Time 2 problem behaviors and two potential confounding variables. Child's sex was negatively associated, such that females were less likely to exhibit Time 2 problem behaviors, $r = -0.17$, $p = 0.041$. Time 1 problem behaviors were positively associated with Time 2 problem behaviors, such that increases in problem behaviors at Time 1 predicted more Time 2 problem behaviors, $r = 0.56$, $p = 0.000$. Therefore, each of these variables were controlled for in subsequent analyses that included Time 2 problem behaviors as the dependent variable. Positive and negative parenting RCI were strongly negatively correlated, such that higher inconsistency in one dimension predicted inconsistency in the other, but in the opposite direction, $r = -0.80$, $p = 0.000$. Therefore, each lower-order dimension was included in both the positive parenting RCI-squared and the negative parenting RCI-square models, as any effect of one valence's inconsistency could be due to inconsistency in the other dimension.

Regressing Time 2 problem behaviors on positive parenting RCI-squared did not yield a significant association, $r_{partial} = -0.04$, $p = 0.672$. The overall model explained a large portion of

the variance, $R^2 = 0.350$, *S.E.* = 0.236, $f^2 = 0.538$. However, this is likely due to in large part to the relationship between Times 1 and 2 problem behaviors. Additionally, neither lower-order RCI terms were significant (positive parenting RCI $r_{partial} = 0.07$, $p = 0.415$; negative parenting RCI $r_{partial} = 0.13$, $p = 0.106$). Time 2 problem behaviors were significantly associated with child's sex, such that females exhibited fewer problem behaviors than males, $r_{partial} = -0.16$, $p = 0.050$, as well as significantly associated with Time 1 problem behaviors, such that previous problem behaviors predicted later behaviors, $r_{partial} = 0.57$, $p = 0.000$. Table 9 summarizes the regression output.

Table 9

Regression: Time 2 Problem Behaviors on Positive Parenting RCI-Squared

Variable	Partial Correlation	*S.E.*	*p*	VIF
Positive parenting RCI-squared	-0.04	0.00	0.672	1.014
Positive parenting RCI	0.07	0.01	0.415	2.721
Negative parenting RCI	0.13	0.02	0.106	2.708
Time 1 problem behaviors	0.57	0.07	0.000	1.029
Child's sex[a]	-0.16	0.04	0.050	1.003

[a] Dichotomous variable (0 = male, 1 = female).

Regressing Time 2 problem behaviors on negative parenting RCI-squared did not yield a significant association, $r_{partial} = 0.02$, $p = 0.852$. The overall model explained a large portion of the variance, $R^2 = 0.350$, *S.E.* = 0.236, $f^2 = 0.538$, again, likely due to the relationship between Times 1 and 2 problem behaviors. Additionally, neither lower-order RCI terms were significant (negative parenting RCI $r_{partial} = 0.13$, $p = 0.107$; positive parenting RCI $r_{partial} = 0.07$, $p = 0.425$). Time 2 problem behaviors were again positively associated with Time 1 problem behaviors, such that previous problem behaviors predicted later problem behaviors, $r_{partial} = 0.57$,

$p = 0.00$. Child's sex was marginally significantly associated with Time 2 problem behaviors, with females trending towards fewer problem behaviors than males, $r_{partial} = -0.16$, $p = 0.053$. Table 10 summarizes the regression output.

Table 10

Regression: Time 2 Problem Behaviors on Negative Parenting RCI-Squared

Variable	Partial Correlation	*S.E.*	*p*	VIF
Negative parenting RCI-squared	0.02	0.00	0.852	1.027
Negative parenting RCI	0.13	0.02	0.107	2.718
Positive parenting RCI	0.07	0.01	0.425	2.716
Time 1 problem behaviors	0.57	0.07	0.000	1.037
Child's sex[a]	-0.16	0.04	0.053	1.006

[a] Dichotomous variable (0 = male, 1 = female).

Hypotheses 3a and 3b

Regressing Time 2 problem behaviors on the Time 1 x Time 2 positive parenting interaction term did not reveal a significant interaction, $r_{partial} = -0.05$, $p = 0.543$. The overall model explained a large portion of the variance, $R^2 = 0.355$, *S.E.* = 0.327, $f^2 = 0.550$. Neither lower-order positive parenting terms were significant, nor was the Time 1 negative parenting covariate. Time 2 problem behaviors were significantly positively associated with Time 1 problem behaviors, such that previous problem behaviors predicted later problem behaviors, $r_{partial} = 0.55$, $p = 0.000$. No interaction between Time 1 positive parenting and Time 1 negative parenting was detected. Table 11 summarizes the regression output.

Regressing Time 2 problem behaviors on the Time 1 x Time 2 negative parenting interaction term did not reveal a significant interaction, $r_{partial} = -0.05$, $p = 0.515$. The overall model explained a large portion of the variance, $R^2 = 0.376$, *S.E.* = 0.232, $f^2 = 0.603$. Neither of

Table 11

Regression: Time 2 Problem Behaviors on Time 1 x Time 2 Positive Parenting Interaction

Variable	Partial Correlation	*S.E.*	*p*	VIF
Positive parenting interaction	-0.05	0.02	0.543	1.183
Time 1 positive parenting	0.00	0.04	0.974	2.913
Time 2 positive parenting	-0.14	0.03	0.101	1.750
Time 1 negative parenting	0.00	0.03	0.962	2.026
Time 1 problem behaviors	0.55	0.07	0.000	1.035
Child's sex[a]	-0.14	0.04	0.095	1.025

[a] Dichotomous variable (0 = male, 1 = female).

the lower-order terms Time 1 negative parenting nor Time 1 positive parenting covariates were significant, $r_{partial} = -0.11$, $p = 0.193$, $r_{partial} = -0.13$, $p = 0.113$, respectively. However, the lower-order Time 2 negative parenting term was significantly positively associated with Time 2 problem behaviors, such that higher levels of negative parenting were related to increased concurrent problem behaviors, $r_{partial} = 0.23$, $p = 0.006$. Similar to above, Time 2 problem behaviors were significantly positively associated with Time 1 problem behaviors, such that previous problem behaviors predicted later problem behaviors, $r_{partial} = 0.56$, $p = 0.000$. No interaction between Time 1 negative parenting and Time 1 positive parenting was detected. Table 12 summarizes the regression output.

Discussion

Previous research has demonstrated that positive parenting is more consistent than negative parenting, and that parenting consistency is associated with children's developmental outcomes, ranging from body mass index, to attachment style, to behavioral outcomes. Importantly, the existing research on consistency limits many of these findings to specific age

Table 12

Regression: Time 2 Problem Behaviors on Time 1 x Time 2 Negative Parenting Interaction

Variable	Partial Correlation	*S.E.*	*p*	VIF
Negative parenting interaction	-0.05	0.03	0.515	1.17
Time 1 negative parenting	-0.11	0.03	0.193	2.219
Time 2 negative parenting	0.23	0.03	0.006	1.416
Time 1 positive parenting	-0.13	0.03	0.113	1.910
Time 1 problem behaviors	0.56	0.07	0.000	1.026
Child's sex[a]	-0.13	0.04	0.113	1.028

[a] Dichotomous variable (0 = male, 1 = female).

groups, typically middle/late childhood to adolescence. Previous studies have also often relied on self-report measures of consistency. Additionally, studies have not always included longitudinal data, which is important in establishing consistency over time. The current study sought to elucidate the associations between parenting consistency and behavioral outcomes in a younger sample (specifically, toddler-aged children). Mother-child dyads engaged in an interaction task designed to demonstrate observable, naturally occurring parenting behaviors. These interactions were repeated after one year for the purpose of determining consistency in parenting behaviors across toddlerhood.

The specific hypotheses tested here were: 1) Positive parenting behaviors would be moderately-to-strongly consistent across time, and negative parenting behaviors would show negligible-to-weak consistency across time. This pattern would be largely consistent with studies that have looked at parenting across multiple time points. 2) Inconsistent parenting, generally, would be associated with poorer child behavioral outcomes. While this relationship makes intuitive sense when extrapolating from previous research, the direct relationship between

these constructs has not been thoroughly examined, particularly when considering young children. 3) The interaction between parenting valence and consistency would have a unique relationship with children's behavioral outcomes, such that consistently high levels of positive parenting and consistently low levels of negative parenting would each be associated with the fewest child problem behaviors. Hypothesis 1 was generally supported; hypothesis 2 was not supported; and, while hypothesis 3's moderation model was not supported, aspects of the results do corroborate the study's predictions. These results, and explanations for each, are discussed below.

In regard to hypothesis 1, as anticipated, positive parenting was found to have strong consistency across time. Additionally, mothers involved in a relationship (i.e., not-single) used more positive parenting than single mothers. While not specifically predicted, this latter finding is also in line with findings that single-parent status is a risk factor for lower positive parenting, as discussed above. The initial correlation analysis also found higher income-to-poverty to be associated with slightly more positive parenting. These findings highlight the relationship between greater resources and more positive parenting. However, the associations of relationship status and income were also relatively small compared to the general consistency of positive parenting, further bolstering the argument that positive parenting is employed consistently. This is encouraging when considering interventions to improve positive parenting, as a raised magnitude of positive parenting could remain stable, leading to downstream positive outcomes for children. Indeed, Sandler et al. (2011) have found that positive parenting programs can lead to maintained elevated positive parenting up to 20 years later.

Negative parenting was more consistent than predicted. Based on previous research, negative parenting was predicted to show negligible-to-weak consistency, yet the current study

found moderate consistency from Time 1 to Time 2. However, this consistency was still a weaker relationship than positive parenting's consistency, which is in line with the general prediction that positive parenting would be more consistent than negative parenting. As noted above, findings on negative parenting are mixed. Given the current study's results, it is difficult to fully reconcile the competing theories of negative parenting consistency discussed above. Likely, mothers' negative parenting consistency is some combination of these theories, simultaneously being a reflection of a stable trait (Atzaba-Poria et al., 2014), while also being more volatile and influenced by mood than positive parenting (Dallaire & Weinraub, 2005).

Negative parenting's consistency may also have been inflated due to the average income level of this study's participants and the potential added stress this had on mothers. Increased stress is associated with increased negative parenting (Mackler et al., 2015). Participants in Dallaire and Weinraub (2005) had income-to-poverty ratios more than three times the current study's, on average. The current sample may have been facing more stress related to low income, which in turn may have been especially difficult to manage for mothers with temperaments related to negative parenting (e.g., high negative affectivity). This could give the appearance of moderate consistency in negative parenting, when in actuality an interaction of temperament and income-related stress were driving this effect; specifically, widespread income-related stress across the sample may have increased the salience of temperament in regard to negative parenting behavior, thus conflating mothers' temperamental consistency with parenting consistency. The relative homogeneity of income-to-poverty ratio in this sample makes any such relationship between poverty and negative parenting difficult to detect.

How the interaction between parenting valence (positive versus negative) and consistency is related to children's problem behaviors is the crux of hypotheses 2 and 3. Each hypothesis

employed different methods to address this central question. Children's problem behavior scores were most strongly associated with their previous levels. Hypothesis 2 used the reliable change index (RCI) to measure within-mother change in parenting across time (a "change score" approach), whereas hypothesis 3 examined whether Time 2 parenting moderated Time 1 parenting's relationship with problem behaviors. Contrary to predictions, the RCI model did not yield significant effects, nor did the interaction term in the moderation model. However, after controlling for Time 1 negative parenting in a regression model, Time 2 negative parenting did explain some concurrent problem behaviors. Negative parenting is expected to be associated with increases in problem behaviors. The finding that in-the-moment negative parenting is associated in this way suggests that consistently low negative parenting would yield fewer problem behaviors over time. That negative (and positive) parenting's consistency as measured here was not associated with problem behaviors may be indicative of methodological issues discussed below. However, it is important to first consider theoretical explanations for these results.

Both positive and negative parenting demonstrated at least moderate consistency. Parenting during toddlerhood may be more stable than during other developmental periods. Not only is toddlerhood a relatively short period (around 2 years), it also is one in which children's experiences are limited compared to later periods. Toddlers' static day-to-day routines may not provide the necessary variability that would lead to varying transactional interactions with their parents, thus projecting relatively stable parenting during this time. Additionally, toddlers may not be as sensitive to parenting inconsistency. Either of these explanations would make significant associations difficult to detect. More challenging is that these are not mutually exclusive propositions. A toddler's relative insensitivity to variations in parenting behavior

could evoke more static parenting behaviors (whether due to engendering in the parents a belief of lack of agency, or perhaps parent behaviors not being reinforced). The more consistent parenting behaviors would in turn elicit less variability in toddlers' responses, and so on. Further complicating matters, it is also possible the effects of inconsistency do not manifest until later in development. Even subtle parenting inconsistency over time could make children's behavioral calibration to environment increasingly difficult, and the more static life of the toddler may not allow for expression of inconsistency's effects. For example, early parenting valence is related to later child brain development (Blankenship et al., 2018). Parenting consistency's impact on later developmental stages in instances such as this is an important question for future studies.

An additional consideration when examining children's behavior is related to the discussion above regarding families' low average income. Low income is often associated with a number of environmental risk factors for children's problem behaviors (e.g., exposure to violence, Kohen et al., 2008). Environmental risks such as these are related to increased stress (Urasche et al., 2015), and, like parenting behaviors, stress is related to children's behavior problems (Allwood et al., 2011). These interrelated issues may have reduced the relative impact of parenting consistency for children in the current sample. In other words, consistency during this period of development may get lost in the shuffle of the myriad competing challenges these children face. As with parenting consistency, any relationship between income and children's behavior may have been difficult to detect due to the relative homogeneity in families' income levels.

Strengths

The current study had several methodological strengths. First, studies examining parenting consistency's relationship to children's behavior have predominately looked at school-

aged children or older. This study's examination of toddlers helps round out a more holistic view of this relationship throughout development. Future studies may find these results instructive in later attempts at teasing out the subtleties of this association. Second, the present study employed observational measures of parenting. As noted above, studies on parenting consistency have often relied on self-report data. The observational measures used here help buffer against reporter biases, such as social desirability. Finally, parenting was examined across multiple time points, as opposed to a single time point with retrospective reporting. Retrospective reporting can be biased by poor memory, or anchoring reports of previous behavior to present behavior. Recording data at multiple time points can buffer against these biases.

Limitations

A potential limitation concerns the use of RCI. Reliable change index comes from clinical literature and was designed to measure within-subject change of psychopathology symptoms in clinical samples. To date, the author is not aware of any use of RCI outside of this context. The rationale for its implementation here is that the current study used the same observational measures at multiple time points, and thus it was believed a change score approach such as RCI would be an effective measure of consistency. RCI also has the advantage of considering typical error in its calculation, such that significant differences between timepoints can be considered to not be due merely to chance. The author believed that RCI's use in this context could offer a novel, effective, and elegant index that future research could build upon. It is possible, though, that RCI is not an appropriate measure of parenting change over time. The clinical samples RCI was designed to investigate presumably show high levels (at least initially) of the symptoms under examination. Furthermore, RCI is often used in the context of clinical

interventions (wherein a significant change in symptoms is the expected result). Given the respective consistencies of positive and negative parenting found here, the magnitude of the signal produced by RCI may have been too weak to detect associations with children's behavior.

Hypothesis 3 presented an additional novel approach to measuring parenting consistency, by considering the interaction between Time 1 and Time 2 parenting measures. This method, too, may not be appropriate to address the overarching question of whether consistency affects children's behavior outcomes. While one of the principal goals of the current study was to model consistency and its association to children's behaviors within the same sample, another approach may be more effective in this regard. For example, a latent change model could create a latent change score for parenting behaviors that could be used to predict problem behaviors. An advantage to this approach is that multiple independent variables can be used to predict the change, such as the covariates and confounds examined in this study, or additional variables not measured here (e.g., parent and child stress).

Conclusion

The present study examined parenting consistency, and its association with children's behavioral outcomes. While the results of these analyses generally confirmed previous research findings regarding consistency over time, limited effects were found between consistency and children's outcomes. Future researchers are encouraged to learn from the strengths and limitations of this study, and apply these lessons when attempting to elucidate this relationship further.

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