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Parental Experience-Based Change: Positive and Negative Changes in Monitoring, Expectations, Nurturing, and Discipline

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Parental Experience-Based Change: Positive and Negative Changes in
Monitoring, Expectations, Nurturing, and Discipline

Joseph S. Rand

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

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Parental Experience-Based Change: Positive and Negative Changes in Monitoring, Expectations, Nurturing, and Discipline

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Master of Science

This study sought to create a measure of parent's perceptions of parental experience-based change (PEBC), or parents' perceptions of the changes they make to their parenting of secondborn children as a result of experiences with firstborn children. The measure assessed PEBC in the domains of monitoring, expectations, nurturing and discipline. Participants were 401 mothers or fathers of 2 or 3 adolescent children. Factor analyses revealed an 8 factor solution that assessed increasing and decreasing in each of the 4 domains. Criterion validity was evaluated using regression analyses to examine the relationships between each factor and parenting outcomes thought to be related to PEBC, namely efficacy, relationship positivity and negativity, demandingness, responsiveness and granting of autonomy. Reliability of the measure was also evaluated. Overall, results supported the validity and reliability of the measure of PEBC and future research can implement the measure in study of parenting and sibling influence.

Keywords: adolescents, birth order, family systems, parenting, siblings

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PARENTAL EXPERIENCE-BASED CHANGE

TABLE OF CONTENTS

TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
Introduction.....	1
Sibling Influence.....	1
Parental Experience-Based Change.....	2
Psychometric Development.....	4
Method.....	5
Participants.....	5
Measures.....	7
Analytic Strategy.....	9
Results.....	11
Factor Structure.....	11
Validity.....	11
Reliability.....	12
Discussion.....	13
Construct Validity.....	13
Criterion Validity.....	14
Reliability.....	18
Limitations and Future Directions.....	19
References.....	21
Appendix A.....	26
Appendix B.....	32

PARENTAL EXPERIENCE-BASED CHANGE

LIST OF TABLES

Table 1. Factor loadings, eigenvalues and percent of variance of items.	26
Table 2. Factor loadings, eigenvalues and percent of variance of items.	27
Table 3. Correlations Between Factors of CFA.....	29
Table 4. Results of multiple regression analysis.....	30
Table 5. Results of multiple regression analysis.....	31

PARENTAL EXPERIENCE-BASED CHANGE

LIST OF FIGURES

Figure 1. Standardized Factor Structure of PEBC..... 28

PARENTAL EXPERIENCE-BASED CHANGE

Parental Experience-Based Change: Positive and Negative Changes in Monitoring, Expectations, Nurturing, and Discipline

Sibling scholars have noted that siblings influence one another's development in a myriad of ways (e.g., Bank, Burraston, & Snyder, 2004; Dunn, 1998; Updegraff, McHale, & Crouter, 2000). Siblings can learn directly from one-another through interaction patterns and indirectly through the greater family system. One commonly acknowledged indirect pathway is by the changing of parental expectations and behaviors due to gained parenting experience, yet, to date little empirical evidence or support exists for this notion. The purpose of this study is to create a measure of parents' perceptions of how they change their parenting of subsequent children based on their experiences with firstborn siblings.

Sibling Influence

Sibling researchers have identified two primary paths for sibling influence: direct and indirect. Siblings can influence one another directly through daily interaction patterns that facilitate social learning (Bank, Burraston, & Snyder, 2004; Brody, 1998; Stormshak, Bellanti, & Bierman, 1996). For example, younger siblings often model the behavior of more experienced older siblings (McGue, Sharma, & Benson, 1996; Patterson, 1986). Indirect sibling influence is the result of sibling's interactions with the greater family system. Family systems theory provides a framework for understanding the mechanisms of indirect sibling influence by recognizing that each family relationship is influenced by the other and that interactions with one member of the family will inevitably influence interaction with other members (Minuchin, 1985). For example, during the transition to adolescence, conflict between parents and adolescents tends to increase (Laursen, Coy, & Collins, 1998). This increased conflict between the parent-adolescent dyad has been linked with parents' increased conflict with secondborn children who are not experiencing a transition to adolescence (Shanahan, McHale, Osgood, &

PARENTAL EXPERIENCE-BASED CHANGE

Crouter, 2007). The increased parental conflict with both offspring at the same time may be a product of the strain on the system that is produced by the transition of the adolescent. In this way, the sibling that is going through the transition is indirectly influencing the experience of his or her younger siblings.

Parental Experience-Based Change

Indirect sibling influence may also occur when parents change their expectations and parenting practices for a laterborn offspring as a result of experiences with earlierborn offspring. Some empirical support does exist for this idea. For example, Whiteman, McHale, and Crouter, (2003) compared parents' experiences with first and secondborn offspring at the same age and found that parents exhibited greater knowledge regarding secondborns' everyday activities and had less conflict with secondborn siblings. Other work suggests that parents alter expectations based on experiences with firstborn offspring. For example, East (1998) suggested that having a daughter who became pregnant during adolescence lowers positive expectations for subsequent daughters. Whiteman and Buchanan (2002) found that the quality of mothers' experience with an adolescent child influences her beliefs about the period of adolescence and can alter her expectations for subsequent adolescent children. More negative experiences with the older sibling were associated with more negative expectations for the younger sibling.

Previous work suggests that parenting changes occur from one child to the next in the domains of monitoring (Whiteman, McHale & Crouter, 2003), expectations (East 1998; Whiteman & Buchanan, 2002), warmth, and conflict/discipline (Shanahan et al., 2007). From this research, two patterns emerge in the changes that occur in parental expectations and parenting practices. One is that learning from experience occurs and improves expectations, relationship quality and practices with subsequent offspring (Shanahan et al., 2007; Whiteman,

PARENTAL EXPERIENCE-BASED CHANGE

McHale, and Crouter, 2003). The other is colored by more negative changes such as lowering expectations and feeling that parenting has little impact on their child's future (East, 1998). In other words, are parents learning from experience from their older offspring and applying what they learn to later offspring, or are they "giving up" on parenting practices as a result of experiences with older offspring? Previous work refers to the concept of parents changing based on experience as learning from experience, but it is here referred to as parental experience-based change (PEBC) in order to recognize that both positive and negative changes may occur.

Despite these studies, little is actually known about PEBC. To date, researchers have not measured parents' perceptions of changing behavior but rather have inferred that parents are changing based on experience because two children in the family are treated differently. A larger body of work shows that parents treat offspring differently for a variety of reasons that may have naught to do with changing based on experience (Brody, Stoneman & McCoy, 1992; Jensen, Whiteman, Fingerman, & Birditt, 2013; McHale, Updegraff, Jackson-Newsom, Tucker, & Crouter, 2000). Therefore, it is important to measure parents' perceptions of the changes they make from one child to the next in order to identify whether or not PEBC is occurring, and if it is, to more fully understand the process.

This study set out to create a new measure of parents' perceptions of the changes they make as a result of experiences with firstborn children in the domains of parental monitoring, expectations, nurturing and discipline, and whether those changes are positive or negative. After measuring parental perceptions of PEBC, validity was established using the domains of PEBC to predict parenting style, parent-child relationship quality and perceived parental efficacy.

PARENTAL EXPERIENCE-BASED CHANGE

Psychometric Development

APA's Standards for Educational and Psychological Testing (1985) states that test developers must provide evidence for validity and reliability. The APA identifies the three main types of validity as content, criterion, and construct validity. These types of validity, along with reliability were applied to the measure of PEBC established in the current study.

Content validity. Content validity refers to the extent to which elements (items, response categories and stem) of a measure are representative of and relevant to the given construct (Haynes, Kubany, & Richard, 1995). A commonly used method of establishing content validity is to submit the measure to expert judges for their review (Anastasi, 1988). The measure of PEBC was submitted to 4 judges who are experts in the field of parenting and sibling research. The responses from the experts were used to adjust the PEBC items.

Criterion validity. Criterion validity is established if the measurement correlates with the measurement of an outcome believed to be associated with the construct in question (Anastasi, 1988). Criterion validity can refer to concurrent validity or predictive validity. Concurrent validity reflects the relationship between the measure and an outcome assessed at the same time whereas predictive validity compares the measure to an outcome that has been measured at a later time. Concurrent validity of PEBC was assessed in the current study by using PEBC to predict parenting style, parent-child relationship and parenting efficacy. Predictive validity was not established at this time due to the data only being collected in one phase.

Construct validity. Construct validity is the extent to which the measure actually measures what it is designed to measure (Cronbach & Meehl, 1955). In order to establish construct validity, the measure must have a clear conception grounded in theory of the construct

PARENTAL EXPERIENCE-BASED CHANGE

of interest (Clark & Watson, 1995). Factor analysis is a way to assess whether items fit into the theory from which they were established (Cronbach, 1970). In the current study, exploratory factor analysis using oblique rotation and confirmatory factor analysis were used to establish construct validity for the measure of PEBC.

Reliability. Reliability refers to the overall consistency of a measure and determines how much variability in test results are due to measurement errors and how much are due to true variability in test scores (Anastasi, 1988). Internal reliability indicates the extent to which responses are consistent across all test items (Cortina, 1993). Cronbach's alpha is a common method of assessing internal reliability and was used in the current study.

Another method that was used to estimate reliability in the current study was the split-half method. The split-half method involves dividing the items in half after the measure is disseminated to participants and correlating the scores of the two halves. The correlation of the two halves is used to estimate reliability of the measure (Cortina, 1993).

Method

Participants

Participants were recruited using Amazon Mechanical Turk (MTurk), a web based labor market tool developed to crowd source tasks. MTurk presents several advantages when used for social science research, such as an integrated system for participant compensation, a large participant pool and a streamlined recruitment process. This allows data to be gathered relatively quickly and inexpensively. Research has found that MTurk participants are more demographically diverse than a typical convenience sample, and the data obtained are as reliable as those obtained using conventional methods (Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, Ipeirotis, 2010). Also, the quality of the data collected using MTurk has been found to

PARENTAL EXPERIENCE-BASED CHANGE

be higher than other forms of online sampling (Weinberg, Freese, & McElhattan, 2014). MTurk has a built in feedback system that assigns workers a rating based on the quality of past task completion. For this research, I accepted data from participants with a feedback score of no lower than a 95% in order to help to ensure data quality. While past work indicates that data quality is not influenced by compensation amount, evidence does suggest that survey compensation amount does influence response rate, with higher amounts yielding greater participation in a shorter amount of time (Buhrmester et al., 2011). For this study participants were compensated \$0.65 for completing the online survey.

Participants lived in the United States and were mothers or fathers with between 2 and 3 non-disabled, biological children who resided with them. Participants indicated their age, race, education, income and employment status. Participants also specified the ages and gender of their children. Consistent with previous studies on PEBC, the focus was on adolescent siblings. Adolescence is a time when turbulence usually manifests between parents and children and this may present the greatest opportunity for parents to change expectations and practices. Age of the oldest child was between 12 and 18 years and the age spacing between first and secondborns was no longer than 4 years. Age spacing of the siblings was determined based on extant sibling research (Shanahan et al., 2007; Whiteman et al., 2003). The sample included 401 participants.

The majority of participants were females (62.9%), married (72.3%) and employed full-time (61.4%). The majority of participants were college educated with 47.6% having completed a four-year degree and 14.5% indicated post-baccalaureate education. Average household income was between \$75,000 and \$100,000 per year. The sample was 76.6% White, 4.5% Asian, 8.5% Black, 8.7% non-white Hispanic, .8% Native American, .5% Pacific Islander and .5% other.

PARENTAL EXPERIENCE-BASED CHANGE

Age of participants ranged from 26 to 64 ($M = 39.91$, $SD = 6.36$). Age of older sibling ranged from 12 to 18 ($M = 14.5$, $SD = 2.0$) and younger siblings from 8 to 17 ($M = 11.84$, $SD = 2.26$) with a mean age difference of 2.67 ($SD = .96$). Gender dyad composition was evenly split 49% mixed gender and 51% same gender sibling pairs. Older siblings were 57.1% males, 42.9% females and younger siblings were 49.9% males, 50.1% females. Average sibship size was 2.4 ($SD = .49$).

Measures

Parental experience based change. PEBC was measured using a 40 item measure that was developed for this study. The measure assessed positive and negative changes in parental monitoring, expectations, nurturing, and discipline. Ten items assessing parental monitoring (Kerr & Stattin, 2000) and 12 items assessing nurturing (Schwarz, Barton-Henry & Pruzinsky, 1985) were adapted from items from existing measures of parental monitoring and nurturing. These items were adapted in order to ask directly about perceptions of change in parental monitoring and nurturing from the older offspring to younger. Eight items assessing expectations and 10 items assessing discipline were generated from ideas gleaned from reviewing the literature on parental expectations and discipline. Responses were based on a 5-point scale with 1 (*strongly disagree*) and 5 (*strongly agree*). Items are listed in the appendix.

Parenting style. Parenting style was measured using an adaptation of Darling's (1993) Parenting Style Inventory (PSI). The original scale was meant to assess the child's perception of their parents' parenting style without explicitly asking about parenting practices. The measure assessed responsiveness, demandingness and autonomy granting. Each of the 3 subscales contains 5 items for a total of 15 items. The PSI is widely used, having been cited 3,294 times according to google scholar.

PARENTAL EXPERIENCE-BASED CHANGE

The measure used in this study was adapted to allow items to be answered by parents. Items include “I like my child to tell me his/her troubles,” “I tell my child that my ideas are correct and that he/she shouldn’t question them.” and “I point out ways my child could do better.” Response categories were on a 4 point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Parents reported on their first and secondborn children. Cronbach’s alphas were: responsiveness = .91, demandingness = .86, autonomy-granting = .82.

Parenting efficacy. The 7 item Parenting Sense of Competence (PSOC-efficacy; Johnston & Mash, 1989) was used to assess parents’ perceived efficacy. Responses were based on a 6-point scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). Items include “Being a parent is manageable, and any problems are easily solved,” and “If anyone can find the answer to what is troubling my child, I am the one.” Cronbach’s alpha was .86.

Parent-child relationship quality. The 4-item measure was adapted from the Americans’ Changing Lives Survey (ACL; Umberson, 1992) and used to assess positive and negative qualities of the parent-child relationship. Two items were used to assess positive qualities and 2 were used to assess negative qualities. Items include “How much do you love and care for your child” and “how much do you criticize your child.” Responses were based on a 5-point scale (*1 = not at all, 2 = a little, 3 = somewhat, 4 = quite a bit, 5 = a great deal*). Parents were also asked to rate their overall relationship quality with each child on a scale from 1 (*excellent*) to 5 (*poor*). The measure has been shown to have acceptable reliability (e.g. .72 for mothers and .70 for fathers; Umberson 1992) and has been cited 392 times according to Google Scholar. Parents reported on their relationship with their first and second-born children. Cronbach’s alpha was .78.

PARENTAL EXPERIENCE-BASED CHANGE

Parent perceptions of child achievement. Parents were asked to rate how successful they perceived their child to be as compared with others of the same age in the domains of career/education and relationships (romantic relationships and family life). Responses were rated on a 5 point scale (*1 = less successful, 2 = somewhat less successful, 3 = about the same as other people of his/her age, 4 = somewhat more successful, and 5 = more successful than other people of his/her age*). Parents reported on their first and secondborn children.

These items were adapted from open ended questions used by Ryff and colleagues (1994) and have been used in research on parent-child relations (Birditt, Fingerman, & Zarit, 2010; Fingerman, Cheng, Birditt, & Zarit, 2012). Citation count according to Google Scholar is 224. Cronbach's alpha was .72.

Analytic Strategy

The first objective was to test the factor structure of the measure of PEBC. The sample ($n = 401$) was split in half at random with one half ($n = 199$) being subjected to exploratory factor analysis (EFA) and the other half ($n = 202$) used for confirmatory factor analysis (CFA). EFA was implemented in order to uncover a preliminary factor structure in the proposed measure of PEBC. EFA with an oblique rotation was conducted using SPSS 23. An oblique rotation is appropriate because dimensions of PEBC are not expected to be mutually exclusive. First, analysis was conducted without determined factors. Parallel analysis and assessment of eigenvalues was used to interpret the initial output. Items with low communality ($< .30$), items that did not load highly on a single factor or items that cross loaded on multiple factors were considered for removal. The analysis was then constrained to a solution with the number of factors suggested in order to test the measure.

PARENTAL EXPERIENCE-BASED CHANGE

Next, based on the results of the EFA, a confirmatory factor analysis was conducted using structural equation modeling with Mplus 7 software (Muthén & Muthén, 2011). Model fit was assessed by evaluating the chi-square (significant outcomes should be noted, but allowed to continue), a comparative fit index (CFI) score above .90, a Tucker Lewis Index (TLI) above .90, and a root mean square error of approximation (RMSEA) score below .06 (Little, 2013). After achieving acceptable model fit, the factor analysis was performed and factor loadings were assessed. Factor loadings were deemed acceptable if $\beta \geq .40$ (Little, 2013).

Finally, validity and reliability were evaluated using the total sample ($n = 401$). Criterion validity was evaluated by using the resulting factors of PEBC to predict parenting outcomes in reference to the secondborn sibling that are believed to be influenced by PEBC, namely, autonomy granting, demandingness, responsiveness, positive parent-child relationship, negative parent-child relationship, and parenting efficacy. Separate Ordinary Least Squares regression (OLS) models were tested for each dependent variable. Each model controlled for parent's perception of older child achievement, parent and sibling age, sibling age difference, parent and sibling gender and parent education. Models also controlled for parenting of firstborns for autonomy granting, demandingness, responsiveness, positive parent-child relationships and negative parent-child relationships, whichever corresponded with the dependent variable for the secondborn sibling. For example, the model with younger child autonomy granting as the dependent variable controlled for parents' granting of autonomy for the older child. This was done in order to find out whether PEBC variables predicted parenting for secondborns as compared to firstborn siblings. Reliability was examined using coefficient alpha using SPSS 23 software and also by using the split-half method also in SPSS 23.

PARENTAL EXPERIENCE-BASED CHANGE

Results

Factor Structure

Principle axis factoring with an oblique rotation resulted in 8 factors with eigenvalues greater than 1. Examination of the scree plot also indicted 8 factors. One item (“I realize how important it is to be a good parent”) had communality lower than .3 and did not load onto any of the 8 factors and the item was removed from the analysis. All remaining items showed communalities above .3 and all items loaded adequately ($< .4$), there were no cross loading. Results of the EFA can be found in Table 1 and Table 2. The 8 factors corresponded with the 8 dimensions of PEBC: more discipline, less discipline, more nurturing, less nurturing, higher expectations, lower expectations, more monitoring and less monitoring.

Confirmatory factor analysis was then executed using the solution from the EFA. The model showed adequate fit (RMSEA = .05, CFI = .92, TLI .92). Standardized factor structure from the results of the CFA can be found in Figure 1 and correlations between latent factors can be found in Table 3.

Validity

Results of the OLS models testing concurrent validity are found in Table 4 and Table 5.

Efficacy. More discipline predicted a decrease in perceived efficacy, ($\beta = -.11$, $SE = .05$, $p < .05$). Higher expectations predicted greater parental efficacy ($\beta = .19$, $SE = .04$, $p < .001$) and lower expectations predicted decreased parental efficacy ($\beta = -.22$, $SE = .06$, $p < .001$). The model fit the data well ($R^2 = .23$, $F(16, 381) = 6.93$, $p < .001$).

Relationship positivity. The model predicting parent-child relationship positivity with secondborn offspring was significant ($R^2 = .36$, $F(17, 380) = 12.67$, $p < .001$). Decreases in relationship positivity were predicted by more discipline ($\beta = -.15$, $SE = .03$, $p < .01$), less

PARENTAL EXPERIENCE-BASED CHANGE

nurturing ($\beta = -.13, SE = .03, p < .05$), and lower expectations ($\beta = -.29, SE = .03, p < .001$).

Increased relationship positivity was also predicted by higher expectations ($\beta = .18, SE = .02, p < .001$), and less monitoring ($\beta = .14, SE = .03, p < .01$).

Relationship negativity. Increased relationship negativity was predicted by more discipline ($\beta = .12, SE = .04, p < .05$) and less nurturing ($\beta = .10, SE = .05, p < .05$), while decreased relationship negativity was predicted by less discipline ($\beta = -.10, SE = .04, p < .05$) and more nurturing ($\beta = -.11, SE = .04, p < .05$). The model fit the data well ($R^2 = .41, F(17, 380) = 15.58, p < .001$).

Parenting style: Responsiveness. None of the 8 factors of PEBC significantly predicted responsiveness.

Parenting style: Demandingness. Increases in demandingness was predicted by higher expectations ($\beta = .14, SE = .02, p < .001$) and lower expectations predicted a decrease in demandingness ($\beta = -.14, SE = .02, p < .01$). The model fit the data well ($R^2 = .56, F(17, 380) = 28.33, p < .001$).

Parenting style: Autonomy. Autonomy was associated positively with less discipline ($\beta = .14, SE = .02, p < .001$) and negatively with more discipline ($\beta = -.14, SE = .12, p < .001$). The model fit the data well ($R^2 = .62, F(17, 380) = 36.53, p < .001$).

Reliability

Internal consistency was assessed using Cronbach's Alpha and all 8 subscales showed acceptable reliability. Alphas were as follows: More discipline $\alpha = .83$; less discipline $\alpha = .86$; more nurturing $\alpha = .93$; less nurturing $\alpha = .91$; higher expectations $\alpha = .79$; lower expectations $\alpha = .79$; more monitoring $\alpha = .88$; less monitoring $\alpha = .84$.

PARENTAL EXPERIENCE-BASED CHANGE

Split-half reliability was also used to determine reliability and the Spearman –Brown coefficient was used to determine split-half reliability. Acceptable values for the Spearman-Brown coefficient are those above .70. Results were: More discipline = .76; less discipline = .79; more nurturing = .93; less nurturing = .90; higher expectations = .67; lower expectations = .73; more monitoring = .87; less monitoring = .82. Split-half reliability for positive expectations is compromised due to the scale only having 3 items. All other split half coefficients were satisfactory.

Discussion

The purpose of this study was to create a measure of parental experience based change and evaluate its validity and reliability. Based on previous research suggesting that PEBC occurs in the domains of parental monitoring, expectations, discipline and nurturing, a 40-item measure was developed to assess both positive and negative changes in each of those dimensions of parenting for secondborn children based on experiences with firstborn children.

Construct Validity

Based on existing research, I hypothesized that parents would perceive changes in their parenting of secondborn children as a result of experiences with firstborn children in the domains of parental monitoring, expectations, nurturing and discipline. I hypothesized that these changes would be positive and negative, characterized by increases or decreases in these domains. Results of the exploratory and confirmatory factor analyses supported these hypotheses. Some parents reported perceived changes characterized by less monitoring, lower expectations, less nurturing and more discipline. Conversely, some parents reported making changes to parenting, marked by increased monitoring, higher expectations, increased nurturing, and less discipline. Further, correlations between opposing factors were not strong. The strongest correlation

PARENTAL EXPERIENCE-BASED CHANGE

between inverse domains was .26 between more discipline and less discipline. This implies that changes in domains of PEBC are not mutually exclusive. These results suggest that the measure has sound construct validity and that it is effectively measuring parents' perceptions of PEBC.

Criterion Validity

When assessing the criterion validity of a measure, it is ideal if the measure is compared to an already established measure of a related concept. However, to date there is no established measure of PEBC. For this study, criterion validity was tested by examining associations between parenting outcomes that have been linked with PEBC in the domains of monitoring, expectations, nurturing and discipline.

Monitoring. Existing research suggests that parents have greater knowledge of secondborn offspring's activities as a result of their experience with firstborn children. This greater knowledge is accompanied by less conflict in parent-child relationships (Whiteman, McHale & Crouter, 2003). Having greater knowledge of activities and behaviors implies that something has changed in the parent's monitoring techniques. I attempted to measure these changes directly by asking parents if they made a greater effort to know about their child's activities, were more likely to solicit information from their child, or if they showed less concern with their younger children's activities based on their experience with older children. Results indicated that parents who reported being less concerned about monitoring their secondborn as a result of experience with their firstborn child, reported more relationship positivity with their secondborn child. While this result appears to run contrary to previous research on PEBC, the finding that less monitoring is associated with an improved relationship does fit within the monitoring literature and supports criterion validity for the measure of less monitoring. For example, when parents rely on direct solicitation to gain knowledge about their children, youths

PARENTAL EXPERIENCE-BASED CHANGE

may feel over-controlled (Kerr and Stattin, 2000) and that their privacy has been invaded (Hawk et al. 2008). Thus less solicitation may promote a more harmonious parent –adolescent relationship. Results from the current study suggest that parents may have learned from their experience with firstborn children and changed the way they monitored secondborns. They may have felt that they over-solicited information from their firstborn and placed strain on the relationship. As a result of that experience parents may have relaxed their monitoring of secondborn children resulting in a more positive relationship.

Increased monitoring was not found to significantly predict relationship outcomes as expected. One possible explanation for this could be rooted in how the measure of monitoring assesses the level of knowledge the parents possess about their child's activities. According to Kerr and Stattin (2000), solicitation is not the primary way for parents to gain knowledge about their kids. Rather, parents tend to gain the most knowledge by paying attention to child disclosures. The measure of parental monitoring as it was designed for this study is based more upon solicitation and less on paying attention to key disclosures. Future work should be directed at distinguishing parental monitoring and parental knowledge of child activities.

Discipline. Previous work suggests that changes in conflict and discipline occur from one child to the next as a result of experience with firstborn offspring (Shanahan et al., 2007) and it was expected that similar results would be produced using the measure developed for the current study. Specifically, I expected that parents who increased discipline with secondborns as a result of experience with firstborns would report having less relationship positivity and more relationship negativity with secondborns. I also expected that parents who decreased discipline of their secondborn child as a result of experience with their firstborn child would report more relationship positivity and less negativity. Results indicated that the measures for PEBC in both

PARENTAL EXPERIENCE-BASED CHANGE

positive and negative discipline have strong criterion validity. For example, parents who felt that they intentionally increased their discipline of their secondborn child as a result of experience with their firstborn child reported feeling that their parenting was less effective and that their relationship with secondborns had more negativity and less positivity. Parents who increased discipline for secondborns also reported granting less autonomy. In this case parents may have felt like their parenting was ineffective with their firstborn and made changes to increase discipline for their secondborns, resulting in less autonomy granting and a less harmonious relationship.

Parents who felt they intentionally decreased discipline of their secondborn child as a result of experience with firstborn children reported having less negativity in their relationship and granted more autonomy. Parents who decreased their discipline may have felt that they were too strict with their firstborn child and made an effort to be less strict with their secondborn. As a result, the relationship with the secondborn was marked by less negativity while granting more autonomy. Taken together, these results suggest that the measure of PEBC in discipline has criterion validity as it is predicting actual changes in parenting.

Nurturing. According to extant literature, parents reported more warmth with secondborn offspring during adolescence than they did with firstborn offspring (Shanahan et al. 2007). One possible explanation for this finding is that parents learn from experience with their firstborns how to promote harmonious relations with their secondborn children. By measuring whether parents intentionally tried to increase or decrease their warmth as a result of experience with earlier born children, I expected an increase in nurturing for the secondborn child to result in more relationship positivity and less relationship negativity and that decreased nurturing would result in decreased positivity and increased negativity. These hypotheses were partially

PARENTAL EXPERIENCE-BASED CHANGE

supported. Parents who intentionally increased their nurturing of their secondborn child as a result of experience with their firstborn child reported having less relationship negativity with their secondborn child but did not report a significant change in relationship positivity. Parents who reported showing less concern for nurturing their secondborns as a result of experience with their firstborn child reported having more relationship negativity and less relationship positivity with their secondborn child. There are several possible reasons as to why parents who reported increasing nurturing with secondborns as a result of experience with firstborns did not report higher levels of relationship positivity with secondborns. Parents who tried to increase nurturing may have done so because they felt that they did not do a good enough job nurturing their firstborn which may have affected the relationship with the firstborn. From what is known about indirect sibling influence, relationship issues may spillover and affect the relationships with secondborn children. It is possible that this spillover effect muted any change in relationship positivity. This may also have to do with the expectations of the child. If a child expects a warm and positive relationship with their parent, they may be less likely to be affected than if the parent is showing less warmth than they expect. These results, however, do support criterion validity by showing that parents felt like they changed the way they nurture their secondborn children and the changes resulted in more positive or negative relationships with secondborn children. Results align well with what was expected and support that the measure has sound criterion validity.

Expectations. Existing research suggests that parenting expectations may change for secondborn children as a result of experience with firstborn children (East, 1998; Whiteman and Buchanan, 2002). These changes were accompanied by low perceptions of parental efficacy (East, 1998) and changes in parent-adolescent relationships (Whiteman and Buchanan, 2002). I

PARENTAL EXPERIENCE-BASED CHANGE

expected that parents who raised their expectations for secondborns as a result of experience with firstborns would report feeling a higher level of efficacy and higher relationship quality with secondborns and that parents who lowered expectations would feel a lower level of efficacy and have lower relationship quality with secondborns. These hypotheses were confirmed and overall results support criterion validity. For example, parents who reported having higher expectations for their younger child based on experience with their older child reported feeling like their parenting was more effective. I also found that parents who reported raising expectations were more demanding of their secondborn child and reported more relationship positivity. This may be due to parents feeling like they did a good job with their first born and want to raise the bar of their subsequent child. Conversely, parents who reported deliberately lowering their expectations of their secondborn child as a result of experience with their firstborn child reported feeling like their parenting was less effective and that their relationship with their secondborn was less positive. They also reported that they were less demanding of their secondborn child. This supports validity in that parents reported that they changed their parenting and parenting outcomes reflected a change had been made.

Reliability

After testing each factor for internal consistency, results indicated that the measures for positive and negative monitoring, discipline, nurturing as well as negative expectations were reliable. This means that the items within each of the factors correlated well with each other and are measuring the same construct. The only factor that failed to achieve the threshold for internal consistency was the measure of positive expectations, or raising expectations for secondborns as a result of experience with firstborns. This factor had an acceptable alpha but did not have acceptable split-half reliability. This was due to the factor only containing 3 items and

PARENTAL EXPERIENCE-BASED CHANGE

when the items are split, one half only has one item and therefore cannot correlate. For that reason, the split-half score of the measure of positive expectations should be disregarded. While internal consistency of PEBC was supported by the current study, future work should focus on measuring the external reliability of PEBC. This can be done by using methods such as test-retest, which would measure the consistency of PEBC over time. This could not be done at the time of the current study but doing so would add to confidence of reliability.

Limitations and Future Directions

The current study has limitations that should be noted. First, the data were cross-sectional therefore causality cannot be inferred from the data. Whether or not parents actually change their parenting over time from one child to the next is an inherently longitudinal question that would require multiple phases of data to answer. Future research should use PEBC to collect longitudinal data.

Second, the study was based on self-report from only one parent. Like all self-report measures, it is prone to bias. It is possible that parents rated themselves more favorably than accurately. Future studies should use outcomes reported by the child.

Third, while the use of Amazon Mechanical Turk for sample collection has advantages as discussed previously, limitations are inherent. As with most internet samples, there is no way to verify the accuracy of the demographic information given. However, Rand (2011) addressed this concern by comparing the responses to 6 demographic questions given by the same subjects who completed two different studies and found a high degree of agreement (between 96% and 81% agreement). Also, the sample for the current study is consistent with other Amazon Turk samples (Burhmester et al., 2011) and consisted of females who were highly educated. Future research should focus on recruiting a more diverse sample.

PARENTAL EXPERIENCE-BASED CHANGE

Despite its limitations, the current study makes valuable contributions to the literature. First, while the current study was cross-sectional and actual parenting changes over time could not be observed, it established that parents perceived changes in their parenting of secondborns as a result of experience with firstborns. The perception that they are changing their parenting due to experience with firstborns is important in distinguishing PEBC from other processes that may influence differential treatment of siblings. Second, it adds to the literature on sibling influence by establishing a way to directly measure one of the major dimensions of sibling influence. Prior to this study, changes in parenting from one child to the next had been inferred, but never directly assessed. Having a method of measuring PEBC directly will allow sibling researchers to broaden understanding of indirect sibling influence and explore outcomes associated with PEBC. For example, future work can use the measure to assess whether or not and in what circumstances PEBC is beneficial or detrimental to child development and sibling relationships. Third, the current study contributes to parenting literature by providing empirical evidence for an idea that is widely accepted in parenting popular culture. Future research can be directed toward examining motivations for PEBC. For example, do parents change because they are disappointed with firstborn's outcomes, or do they feel that they can simply do better? Did they relax because of positive experiences or did they become discouraged because of negative experiences and give up? What are the parent level factors that influence whether or not PEBC occurs? PEBC is a concept that is often discussed in popular culture yet largely ignored by research. The current study is a step forward in bringing to light this complex family process.

PARENTAL EXPERIENCE-BASED CHANGE

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PARENTAL EXPERIENCE-BASED CHANGE

Appendix A

Table 1. Factor loadings, eigenvalues and percent of variance of items.

Items	Factor Loadings			
	More Discipline	Less Discipline	More Nurturing	Less Nurturing
I am more strict	.76	-.01	.02	-.08
More severe punishment	.69	.06	-.09	.14
More rules	.74	-.08	.08	.17
Give timeout or grounding	.58	.08	-.04	-.15
Revoke privileges for breaking rules	.91	-.02	-.01	-.04
More lenient	-.05	.74	.12	.13
Less severe punishment	.03	.81	-.05	-.16
Give fewer rules	.03	.77	-.06	.06
Less likely to give timeout or grounding	.12	.52	.10	.14
Less likely to take away privileges for breaking rules	-.05	.79	.00	-.05
Make a greater effort to talk	-.01	-.01	.84	.04
Listen more attentively	-.06	.03	.82	.05
Make a greater effort to spend time	.06	.06	.68	-.04
Pay closer attention to needs	-.03	.11	.87	.03
Make greater effort to understand problems/worries	.04	-.06	.87	-.09
Make greater effort to make feel important	-.02	-.06	.92	-.06
Less concerned with talking	-.03	.00	.07	.87
Less concerned with listening attentively	.08	-.01	-.09	.75
Less concerned with spending time	-.02	-.18	.04	.85
Less concerned with needs	-.01	.07	-.03	.78
Less concerned with understanding problems/worries	-.10	.20	-.08	.74
Less concerned about making feel important	.07	.00	.00	.73
Eigen- values	2.54	1.68	9.23	6.71
% of variance	6.52	4.31	23.66	17.21

Note: Factor loadings over .40 appear in bold.

PARENTAL EXPERIENCE-BASED CHANGE

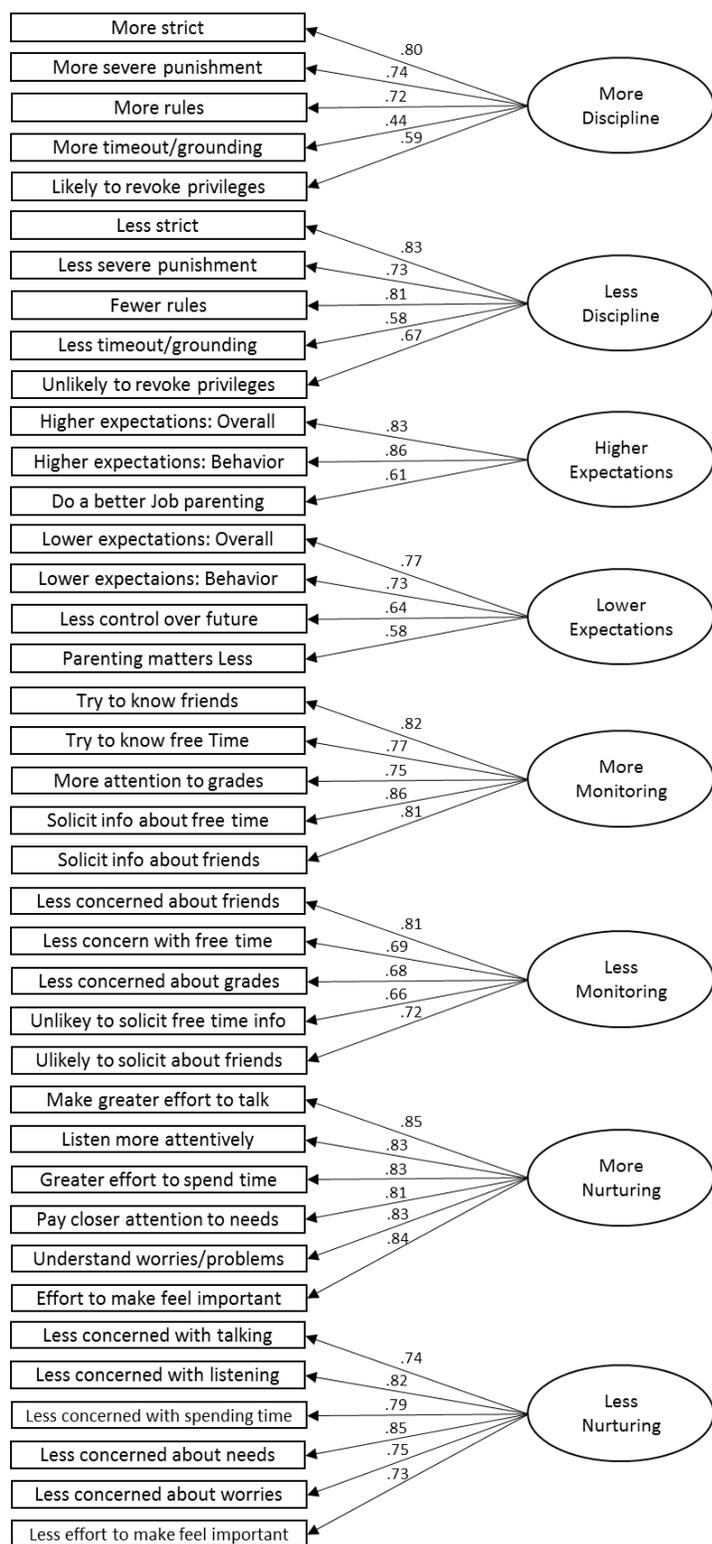
Table 2. Factor loadings, eigenvalues and percent of variance of items.

Items	Factor Loadings			
	Higher Expectations	Lower Expectations	More Monitoring	Less Monitoring
Try to have higher expectations	.76	.04	-.02	-.10
Have higher expectations	.91	-.08	.04	.08
Do a better job parenting	.41	.01	-.01	-.03
Try to have lower expectations	-.08	.74	.09	.03
Have lower expectations	-.05	.88	-.04	-.07
Feel like I have less control over future	.04	.58	-.04	.10
Feel like parenting matters less	.13	.44	-.09	.18
Make a greater effort to know who friends are	.01	-.04	.79	.01
Make greater effort to know about free time	-.11	-.14	.71	.11
Pay closer attention to grades	.27	.01	.54	.01
More likely to ask about free time	-.03	.06	.79	-.08
More likely to ask about friends	.03	.07	.82	.03
Less concerned about friends	.01	-.02	-.07	.66
Less concerned about free time	.04	.02	.07	.72
Less concerned about grades	-.05	.08	-.03	.58
Less likely to ask about free time	.03	-.01	.04	.80
Less likely to ask about friends	-.08	.01	.03	.73
Eigen- values	1.23	1.51	2.00	2.06
% of variance	3.15	3.87	5.13	5.29

Note: Factor loadings over .40 appear in bold.

PARENTAL EXPERIENCE-BASED CHANGE

Figure 1. Standardized Factor Structure of PEBC.



PARENTAL EXPERIENCE-BASED CHANGE

Table 3. Correlations Between Factors of CFA ($N = 202$).

Variables	1	2	3	4	5	6	7	8
1. More Strict	–							
2. Less Strict	.26***	–						
3. More Nurturing	.02	.12	–					
4. Less Nurturing	.26***	.35***	.00	–				
5. Higher Expectations	.26***	.32***	.33***	.18*	–			
6. Lower Expectations	.30***	.42***	-.12	.43***	.15*	–		
7. More Monitoring	.26***	.10	.45***	.00	.33***	-.08	–	
8. Less Monitoring	.15*	.27***	-.02	.42***	.18*	.30***	-.11	–

* $p < .05$. ** $p < .01$. *** $p < .001$.

PARENTAL EXPERIENCE-BASED CHANGE

Table 4. Results of multiple regression analysis.

Variable	Efficacy			Relationship Positive			Relationship Negative		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
More Discipline	-.12*	.06	-.11	-.08**	.03	-.15	.11*	.04	.12
Less Discipline	-.02	.05	-.02	.01	.03	.02	-.09*	.04	-.10
More Nurturing	.05	.05	.06	.00	.02	.01	-.09*	.04	-.11
Less Nurturing	.06	.06	.06	-.08*	.03	-.13	.10*	.05	.10
Higher Expectations	.16***	.04	.19	.08***	.02	.18	.04	.03	.05
Lower Expectations	-.22***	.06	-.21	-.17***	.03	-.29	-.03	.05	-.03
More Monitoring	.05	.05	.05	.01	.02	.03	.05	.04	.06
Less Monitoring	.02	.06	.02	.08**	.03	.14	-.01	.04	-.01
DV Measure of Older Sib				.35***	.04	.40	.60***	.04	.59
Perception of Achievement	.33***	.05	.33	.01	.03	.03	.02	.04	.02
Older Sibling Age	.05*	.02	.12	-.01	.01	-.03	.01	.02	.02
Sib Age Difference	.05	.04	.05	.02	.02	.03	.03	.03	.04
Parent Age	-.02***	.01	-.17	.00	.00	-.06	-.01	.01	-.04
Older Sibling Gender	-.01	.08	-.01	-.03	.04	-.03	.00	.06	.00
Gender Composition	.09	.08	.05	.06	.04	.07	.01	.06	.01
Parent Gender	.02	.09	.01	.01	.05	.01	.02	.07	.01
Parent Education	-.11*	.05	-.10	.00	.03	.00	.05	.04	.05
R ²		.23			.36			.41	

* $p < .05$. ** $p < .01$. *** $p < .001$.

PARENTAL EXPERIENCE-BASED CHANGE

Table 5. Results of multiple regression analysis.

Variable	Responsiveness			Demanding			Autonomy		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
More Discipline	-.02	.02	-.04	-.01	.02	-.02	-.08***	.02	-.12
Less Discipline	-.01	.02	-.02	-.01	.02	-.01	.08***	.02	.14
More Nurturing	.01	.02	.04	-.02	.02	-.05	.01	.02	.01
Less Nurturing	-.01	.02	-.02	-.03	.02	-.06	-.01	.02	-.01
Higher Expectations	.01	.01	.04	.06***	.02	.14	-.00	.02	-.00
Lower Expectations	-.01	.02	-.03	-.07**	.02	-.14	.03	.02	.05
More Monitoring	.00	.02	.01	.01	.02	.01	-.03	.02	-.05
Less Monitoring	.00	.02	.01	.00	.02	.00	-.01	.02	-.02
DV measure of Older Sib	.63***	.04	.61	.70***	.04	.68	.69***	.03	.73
Perception of Achievement	-.01	.02	-.02	-.04*	.02	-.08	-.00	.02	-.00
Older Sibling Age	-.01	.01	-.05	-.01	.01	-.03	-.01	.01	-.03
Sib Age Difference	-.01	.01	-.02	.00	.02	.00	-.04*	.01	-.07
Parent Age	.00	.00	-.04	.00	.00	-.05	.00	.00	.01
Older Sibling Gender	-.05	.03	-.08	.00	.03	.01	-.02	.03	-.02
Gender Composition	.00	.03	.01	.02	.03	.02	.04	.03	.03
Parent Gender	.00	.03	.00	.01	.03	.01	-.03	.04	-.03
Parent Education	.01	.02	.03	-.02	.02	-.04	.01	.02	.02
R ²		.43			.56			.62	

* $p < .05$. ** $p < .01$. *** $p < .001$.

PARENTAL EXPERIENCE-BASED CHANGE

Appendix B

Items for measure of parental experience based change

Responses will be on a 5 point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Monitoring

Based on my experience with my older son/daughter...

1. I make a greater effort to know about who my younger son's/daughter's friends are.
2. I make a greater effort to know what my younger son/daughter does in his/her free time.
3. I pay closer attention to what my son's/daughter's grades are in school.
4. I am more likely to ask my younger son/daughter about what he or she does in their free time.
5. I am more likely to ask my younger son/daughter about his or her friends.
6. I am less concerned about my younger son's/daughter's friends.
7. I am less concerned about what my younger son/daughter does in his or her free time.
8. I am less concerned about my younger son's/daughter's grades.
9. I am less likely to ask my younger son/daughter about what he or she does in their free time.
10. I am less likely to ask my younger son/daughter about his or her friends.

Expectations

Based on my experience with my older son/daughter...

1. I have higher expectations in general for my younger son/daughter.
2. I have higher expectations for my younger son's/daughter's behavior.
3. I feel like I can do a better job parenting my younger son/daughter.
4. I realize how important it is to be a good parent.
5. I have lower expectations in general for my younger son/daughter.
6. I have lower expectations for my younger son's/daughter's behavior.
7. I feel like I have less control over my younger son's/daughter's future.
8. I feel like my parenting matters less.

Nurturing

Based on my experience with my older son/daughter...

1. I make a greater effort to talk with my younger son/daughter.
2. I make a greater effort to listen attentively to my younger son/daughter.
3. I make a greater effort to spend time with my younger son/daughter.
4. I pay closer attention to my younger son's/daughter's needs.
5. I make a greater effort to better understand my younger son's/daughter's problems and worries.
6. I make a greater effort to make my younger son/daughter feel important.

PARENTAL EXPERIENCE-BASED CHANGE

7. I am less concerned with talking with my younger son/daughter.
8. I am less concerned with listening to my younger son/daughter.
9. I am less concerned with spending time with my younger son/daughter.
10. I am less concerned with my younger son's daughter's needs.
11. I am less concerned with understanding my younger son's/daughter's problems and worries.
12. I am less concerned with trying to make my younger son/daughter feel important.

Discipline

Based on my experience with my older son/daughter...

1. I am more strict with my younger son/daughter.
2. My younger son/daughter has more severe punishment for breaking rules.
3. I give my younger son/daughter more rules.
4. I am more likely to use timeout or grounding with my younger son/daughter.
5. I am more likely to take away privileges from my younger son/daughter for breaking rules.
6. I am more lenient with my younger son/daughter.
7. My younger son/daughter has less severe punishment for breaking rules.
8. I give my younger son/daughter fewer rules.
9. I am less likely to use timeout or grounding with my younger son or daughter.
10. I am less likely to take away privileges from my younger son/daughter for breaking rules.

Open ended questions

1. How do you think your parenting has changed over time?
2. If you believe your parenting expectations have changed, what facilitated that change?