

## Parenting infants: the role of mothers' perceptions of how they were parented

Charu T. Tuladhar, Ashley St. John & Amanda R. Tarullo

To cite this article: Charu T. Tuladhar, Ashley St. John & Amanda R. Tarullo (2018): Parenting infants: the role of mothers' perceptions of how they were parented, *Early Child Development and Care*

To link to this article: <https://doi.org/10.1080/03004430.2018.1538133>



Published online: 30 Oct 2018.



Submit your article to this journal [↗](#)




View Crossmark data [↗](#)

---



# Parenting infants: the role of mothers' perceptions of how they were parented

Charu T. Tuladhar , Ashley St. John and Amanda R. Tarullo

Department of Psychological and Brain Sciences, Boston University, Boston, MA, USA

## ABSTRACT

This study investigated women's perceptions of caring and control in their fathers versus their mothers in relation to specific ways in which they interacted with their infants during freeplay. Participants were 73 mothers and their 6 month-old infants. Results revealed that women's perceptions about their mothers compared to their fathers in the same domain of parenting can have differing relations with various aspects of their own parenting, such as infant-directed speech and positive engagement with their infants. Specific parenting behaviours related differentially to women's perceptions about their parents. These associations were independent of global predictors of early parenting such as women's depressive status. Findings could have implications for targeting prevention and intervention efforts to mothers at risk for less positive parenting. How controlling or caring they remember their parents to be could serve as a protective factor or convey additional risk depending on the gender of their parents.

## ARTICLE HISTORY

Received 7 August 2018  
Accepted 15 October 2018

## KEYWORDS

Early maternal behaviours;  
parental bonding instrument;  
perception of parents;  
mother–infant interaction

## Introduction

When parents interact with their infants, there are marked individual differences in parents' behaviours, such as positive behaviours towards the infants and synchronizing those behaviours with the infants' behaviours, and coordinating their attention to objects with their infants. These early parenting behaviours are closely tied to infant development across multiple domains, including stress regulation (Jahromi, Putnum, & Stifter, 2004), language development (Saint-Georges et al., 2013) and cognitive, executive and social functioning (Bigelow et al., 2010; Jahromi et al., 2004; Mundy & Sigman, 2006; Saint-Georges et al., 2013). Given the important role of early parenting in infant development, it is critical to investigate potential predictors so as to target prevention and intervention efforts to dyads who may be at risk for poorer early parenting.

Emerging literature suggests that a potential determinant of positive parenting is adults' perceptions of childhood experiences with their parents: in particular, recollections of how caring and/or controlling their parents were (Feldman, Gordon, & Zagoory-Sharon, 2011; Madden et al., 2015). We are yet to fully understand the nuances of the relation between adults' perceptions of how caring and controlling their parents were and their own early parenting behaviours. One important question that needs addressing is whether the nature of this relation is influenced by the gender of adults' parents. Perceiving a mother versus a father as caring or controlling may not influence parenting in the same way because an adult may have gender-specific expectations of the appropriate level of care and control to be exercised by a parent (Dufur, Howell, Downey, Ainsworth, & Lapray, 2010). It is also unclear how adults' perceptions of their parents relate to specific parenting behaviours (e.g.

infant-directed speech, joint attention) as compared to global measures of positive parenting (e.g. rating of overall maternal sensitivity to infant cues). Given that specific parenting behaviours have implications for different aspects of infant development, it is important to assess how perceptions of parents relate to these specific behaviours. So far, very little has been done to address these issues.

### ***Intergenerational transmission of early parenting***

The idea that adults' perceptions of their parents is a possible determinant of their early parenting stems from the fact that early parenting is influenced by how adults were parented during their childhoods. Longitudinal studies have shown intergenerational transmission of observed harsh parenting, such as the use of anger and aggression (Conger, Neppl, Kim & Scaramella, 2003), as well as positive parenting, such as warmth, sensitivity and cognitive stimulation (Belsky, Sligo, Jaffee, Woodward, & Silva, 2005). Subsequent research has not only confirmed these findings of intergenerational transmission of harsh and positive parenting, but has also pointed out a few developmental moderators such as, warmth of co-parents of second-generation parents and, mediators such as, social competence, academic attainment and antisocial tendencies of second-generation parents, that seem to be involved in the transmission (Conger, Schofield, & Neppl, 2012; Neppl, Conger, Scaramella, & Ontai, 2009; Raby et al., 2015; Shaffer, Burt, Obradović, Herbers, & Masten, 2009). Another possible mechanism in the intergenerational transmission of parenting that has not been fully explored is second-generation parents' *perceptions* of how they were parented. Before assessing this, it is important to investigate whether recollections of having had harsh or sensitive parents is related to adults' own parenting practices.

### ***Adults' perceptions of how they were parented***

How adults remember being parented by their parents could serve as a template that shapes their own parenting practices contributing to the intergenerational transmission of early parenting. The literature on intergenerational transmission of parenting is rooted in attachment theory's idea of internal working models (Bowlby, 1969). Attachment theory posits that people's perceptions about relationships, as derived from their experiences with their parents, shape their own parenting behaviours (Main, Kaplan, & Cassidy, 1985; Sroufe & Fleeson, 1986). According to this theoretical perspective, individuals' attachment with caregivers helps them develop an internal working model (IWM). This IWM serves as a template that guides their current and future relationships. IWMs influence people's thoughts, feelings and behaviours with their own children. In line with this theory, robust literature using the Adult Attachment Interview (AAI) has found that adults' mental representations of their childhood relationships are associated with their own parenting behaviours including sensitivity, monitoring, withdrawal and intrusiveness (Adam, Gunnar, & Tanaka, 2004; Haltigan, Leerkes, Supple, & Calkins, 2014; Leerkes et al., 2015). The AAI is a measure of current mental representation of childhood experiences based on the way individuals describe their parents, such as the extent to which their narratives are coherent and informative (George, Kaplan, & Main, 1985; Main et al., 1985). The AAI yields a global adult attachment style classification – secure, preoccupied, or dismissive. AAI classification focuses on narrative style, such as coherency of speech and thought processes about early relationship issues rather than content (George et al., 1985; Main et al., 1985), and is a powerful predictor of attachment in the next generation (Adam et al., 2004; Haltigan et al., 2014; Leerkes et al., 2015). Less is known about how perceptions of one's own parents in specific domains such as, care or control could also shape the way in which individuals interact with their own children. Given that there is the intergenerational transmission of observed positive and harsh parenting, studying how adults' perceptions of their parents in the care and control domains influence the way they interact with their children could be of particular importance.

### ***Adults' perceptions of their parents as caring and controlling***

A combination of the degree of parental caring and control factor into positive or harsh parenting behaviours. Baumrind (1967, 2012) made a distinction between two domains of parenting – *nurturance* (care) and *control*. Parental care refers to the expression of warmth to children through verbal approval, sensory stimulation, tender expression and touch. This domain of parenting is parallel to positive parenting variables assessed in the intergenerational literature, such as warm-sensitive-stimulating parenting (see Belsky et al., 2005). Conversely, parental control can be *coercive* or *confrontive* as distinguished by Baumrind (2012). Coercive control is usually domineering, arbitrary and used for status distinction whereas confrontive control is negotiable, reasoned and used for behaviour regulation. Coercive control can be detrimental to children and has been associated with emotional, cognitive and personality disturbances, as well as poor academic performance (Baumrind, 2012; Boudreault-Bouchard et al., 2013; Pinquart, 2015). Harsh parenting measures such as hostility and angry coercion that were used in the intergenerational studies would fall under this category of coercive control (see Conger et al., 2012). However, confrontive control is not detrimental and is associated with competence and good mental health outcomes in children (Baumrind, 2012). Given that levels and types of parental care and control factor into positive and harsh parenting, adults' perceptions of their parents as caring and/or controlling may play a role in their own positive or harsh parenting practices.

Emerging evidence suggests that adults' recollections of the extent to which their parents were caring and controlling may be related to their interaction with their own infants. Studies have found that individuals who perceived their parents as highly caring engaged in positive early parenting (Feldman et al., 2011; Madden et al., 2015) whereas those who perceived their mothers as highly controlling engaged in less positive parenting. Nevertheless, we are far from unravelling the nuances of these relations.

### ***Adult's perceptions of their mothers versus their fathers***

A key question that remains is, does adults' perception of the level of care and control in their mothers versus their fathers influence their specific parenting behaviours in the same way? Madden et al. (2015) reported that adults' perceptions of their mothers, and not their fathers, were associated with the current parenting of their toddlers when parenting was measured using global assessment scale. This finding illustrates the importance of assessing the association between individuals' current parenting behaviours and their perceptions of the level of caring and control in their mothers and fathers separately. It is possible that adults' perceptions of their mothers and fathers relate differentially to their current parenting behaviours due to sex differences in parenting based on socio-culturally determined gender stereotypic roles, as well as an evolutionary influence (Dufur et al., 2010). Individuals could have different standards of caring and controlling behaviours for mothers and fathers such that what individuals perceive as caring and controlling in mothers could be different from what they perceive as caring and controlling in fathers. Moreover, adults' perceptions of the appropriate level of caring and control could also differ depending on the sex of their parents. Thus, it is important to disentangle whether adults' perceptions of care and control in their mothers versus their fathers relate to their specific early parenting behaviours in the same way.

### ***Perceptions of parents and specific parenting behaviours***

Another question that remains unanswered is, how are adults' perceptions of their parents related to specific parenting behaviours instead of global parenting measures? Specific ways in which mothers interact with their infants are related to different domains of infant development. Mothers engaging in *infant-directed speech* (using 'motherese' or positive vocalization) has been linked with promotion of stress regulation (Jahromi et al., 2004), affect, attention and language (Saint-Georges et al., 2013)

and formation of secure attachment (Bigelow et al., 2010) in infants. Likewise, *maternal facilitated joint attention*, (coordinating their attention to objects with their infants) helps infants develop language, cognitive skills and executive function (Mundy & Sigman, 2006). Maternal behaviours may be of particular importance during infancy when infants are developing joint attention (Mundy & Newell, 2007) and attachment with caregivers (Schaffer & Emerson, 1964). How mothers interact with their infants at this point could influence infants' social and cognitive development. Depending on which specific maternal parenting behaviours are associated with mothers' perceptions of their parents as caring and controlling, these perceptions could have variable impacts on infant development. This makes it important to take a bottom-up approach in studying women's perceptions of their parents as precursors of specific aspects of early maternal behaviours.

### **Global predictors of maternal parenting behaviours**

Socioeconomic status (SES) and maternal depression are known global predictors of early parenting behaviours (Feldman, 2007; Fox, Platz, & Bentley, 1995; Hoff, Laursen, & Tardiff, 2002). SES and maternal depression not only directly impact parenting, but could also do so by influencing parents' perceptions of their own parents. Thus, it is important to disentangle whether women's perceptions of their parents are related to their current parenting practices independently from or by virtue of these global predictors. We know that maternal depression predicts less positive parenting behaviours such as hostility, intrusiveness, low responsivity and less frequent infant-directed speech and joint attention (Feldman, 2007). As maternal depression is related to these less positive parenting behaviours, it hinders mothers from coordinating positive engagement with their infants. Likewise, low income and educational levels of mothers are also associated with less positive parenting behaviours such as, more controlling, restrictive and disapproving behaviours (Fox et al., 2010; Hoff et al., 2002).

It is possible that depression and/or low SES in mothers influence their perceptions of their parents in a way that leads them to engage in such less positive parenting behaviours. For example, Rogosch, Cicchetti, and Toth (2004) found that depressed mothers have more negative representations of their childhood relationships compared to the non-depressed group. Likewise, mothers with low SES tend to have a more insecure/dismissive attachment representations of their childhood relationships (Van Ijzendoorn & Bakermans-Kranenburg, 2010). It is clear from these studies that both maternal depression and SES are associated with maternal parenting behaviours as well as with mothers' representations of their childhood relationships. Thus, it is important to assess the relation between mothers' perceptions of their parents, and their SES and depressive status in predicting maternal parenting behaviours.

### **Current study**

The present study differentiated the key domains of perceived care and control in investigating how mothers' perceptions of their fathers versus their mothers differed in relation to their own specific early parenting behaviours, namely infant-directed speech, joint attention, and positive engagement synchrony with their 6-months-old infants. Based on the previous literature we hypothesized that women who perceived their mothers as highly caring would engage more and those who perceived their mothers as highly controlling would engage less in infant-directed speech, joint attention and positive engagement with their infants. Because there is mixed evidence regarding adults' perceptions of the level of care and control in their fathers and their parenting behaviours, we aimed to further explore this relation in our study. Additionally, we aimed to obtain a more nuanced understanding of the relation of mothers' perceptions of their parents and their own behaviour with their infants by examining perceptions with respect to specific observed maternal behaviours rather than global measures. Further, we aimed to assess whether mothers' perceptions of their

parents as caring and controlling were uniquely associated with their own parenting behaviours above and beyond maternal depressive symptoms and SES.

## Methods

### Participants

Participants were 73 mothers ( $M$  age = 33.55 years,  $SD$  = 3.79) and their healthy, singleton 6-month-old infants ( $M$  age = 6.64 months,  $SD$  = 0.44, 37 female) recruited from the greater Boston area using public birth records and a departmental database. They were a subset of a sample from a larger study. Participants were African American (6.9% mothers and 4.1% infants), Asian American (9.7% mothers and 2.7% infants), Caucasian American (79.2% mothers and 68.5% infants), Hispanic American (1.4% mothers and 1.4% infants), and multiracial (2.8% mothers and 23.3% infants). Most mothers (87.2%) had at least college degree. 16% of the mothers were above the threshold for clinical depression.

### Procedure

Our study was approved by the Institutional Review Board of Boston University. The dyads were visited at their homes during the day at the mothers' convenience and at a time when the infants were well rested. Following informed consent, mothers engaged with their infants in a freeplay session. Then, mothers filled out questionnaires to assess whether they had depressive symptomatology, and their perceptions of their mothers' parenting styles. Demographic information was collected including household income, education level and occupation. Six months after the visit, the dyads were invited to participate in a follow-up laboratory assessment as part of a larger study. Mothers ( $N$  = 73) completed a questionnaire that assessed their perceptions of their fathers' parenting styles. Questionnaires on mothers' perceptions of their mothers' and fathers' parenting were administered at different time points to eliminate comparison effects.

## Measures

### Parental bonding instrument

The PBI is a 25-item retrospective self-report measure that assesses adults' perceptions of their own parents' parenting styles on two dimensions: care and overprotection (Parker, Tupling, & Brown, 1979). It is a widely-used scale that has been shown to have good internal consistency, test-retest reliability and, construct and convergent validity independent of mood effects (Parker, 1983).

Mothers rated the extent to which the 25 statements characterized their own mothers' and fathers' parenting styles on a 4-point scale (1 = *very unlikely* and 4 = *very likely*). Twelve of the items assessed perceptions of mothers' parents' level of caring ( $\alpha$  = .91; for level of caring in mothers,  $\alpha$  = .95; for level of caring in fathers) and 13 of the items assessed perceptions of mothers' parents' overprotection ( $\alpha$  = .89; for level of overprotection in mothers,  $\alpha$  = .91; for level of overprotection in fathers). Examples of care items are, 'spoke to me in a warm and friendly voice' and 'was affectionate to me.' Examples of overprotection items are, 'did not want me to grow up' and 'tried to control everything that I did.' Total scores on the two dimensions for both mother and father parenting styles were calculated. The possible range of scores for the subscales care and overprotection range from 12 to 48 and 13 to 52, respectively. As the PBI is designed to yield high and low categories of these two subscales, the subscales were dichotomized into high and low groups using standard cut-off points (Parker, 1983). The cut-off point for the perception of caring in mothers was 27 and that for overprotection was 13.5. The cut-off point for the perception of caring in fathers was 24 and that for overprotection was 12.5.

### ***Socioeconomic status (SES)***

Mothers reported on family income, maternal and paternal occupation, and the highest level of maternal and paternal education. An income to needs ratio was calculated using total household size, household income and federal poverty guidelines (for instance, an income-to-needs ratio of 2 indicates the household income is twice the federal poverty line for that household size). Highest education level was coded from 1 to 5. Elementary, middle and junior high school were scored as 1. High school and General Educational Development (GED) certificate were scored as 2. Vocational school and community college were scored as 3. College (4-year degree) was scored as 4 and graduate school was scored as 5. Maternal and paternal occupational prestige was coded using the Job Zone coding scheme from the Occupational Information Network (O\*NET, <http://www.onetonline.org/help/online/zones>), which ranks U. S. Census-based occupational categories on a 5-point scale based on the education, experience, and training required (1 = *requiring the least preparation* and 5 = *requiring the most extensive preparation*). To create the SES composite variable, all the 5 variables were standardized. Z-scores of the maternal and paternal level of education were then averaged to obtain a total parental education level. Z-scores of maternal and paternal occupational prestige were also averaged to obtain total parental occupational prestige score. The final composite SES scores were calculated by averaging the standardized scores of income to needs ratio, total parental education level and total parental occupational prestige.

### ***Centre for epidemiologic studies – depression scale (CES-D)***

The CES-D is a 20-item ( $\alpha = .85$ ) self-report questionnaire designed to measure depressive symptoms in the general population (Radloff, 1977). Mothers indicated how often within the last week they experienced the symptoms on a 4-point scale (0 = *rarely or none of the time* to 3 = *mostly or all of the time*). The total possible scores ranged from 0 to 60. To distinguish between mothers who experienced depressive symptomatology at a clinical level and those who did not, mothers were categorized into being above (16 and greater) or below (less than 16) the clinical cut off for depressive symptomatology using the standard clinical cut-off score. This scale has internal, concurrent, and predictive validity in clinical as well as general populations (Radloff, 1977).

### ***Maternal parenting and mother–infant synchrony behaviours***

To assess maternal parenting behaviours and quality of interaction between mothers and their infants, mothers engaged with their infants in a 6-minute freeplay with five age-appropriate toys for the infants. The mothers were instructed to play as they normally would. The session was videotaped and later coded for mothers' and infants' behaviours using the software Observer XT – Noldus 11.0 (Wageningen, the Netherlands). Feldman and colleagues' well validated micro-coding scheme for parent–infant interactions (Feldman et al., 2011; Feldman & Eidelman, 2004) were used. Coders assessed mother and infant gaze, affect, vocalization, and interaction with toys every 30th of a second, frame by frame. Coders were trained to a kappa of .80 and one minute of each video was double-coded for reliability. Interrater reliability kappa ranged from .84 to .97. We calculated the following variables indexing maternal parenting behaviours for each participant: *Infant-directed speech*, *joint attention* and *positive engagement synchrony*. Infant-directed speech is the proportion of time mothers engaged in infant-directed speech also known as 'motherese' (Feldman & Eidelman, 2004). Joint attention is the ability of individuals to coordinate their attention with a social partner with respect to objects or events (Tomasello, 1995). Alternating gaze between an individual and the object the individual is attending to is an indicator of joint attention. To generate the maternal joint attention variable, the frequency of mothers' gaze shifts between the infant and the toy the infant was looking at was calculated by using state lag sequential analysis in the Observer XT – Noldus 11.0 software. *Positive engagement synchrony* (Feldman, 2007) is an index of temporal synchrony between infant behaviour and mother behaviour. It was defined as the proportion of time during the interaction that both mother and infant were simultaneously exhibiting any positive

behaviours. Infant positive engagement behaviours included gaze to mother, infant-directed speech, and positive affect. Maternal positive engagement behaviours included gaze to infant, infant-directed speech, and positive affect. Thus, mother using infant-directed speech when the infant smiled at the mother or mother gazing at the infant when the infant is making infant-directed speech towards the mother would be examples of positive engagement synchrony. All the variables described above were corrected for the time when mothers' and/or infants' behaviours could not be coded either because their faces or actions were out of the camera view or because their voices were inaudible.

## **Analysis plan**

All the variables were checked for normality before proceeding with the preliminary analyses.

### **Preliminary analyses**

The relation of women's perceptions of their parents' level of caring and overprotection to SES and their depressive status was analysed. First, independent samples *t*-tests were performed to compare SES between women in the high and low groups of perceived mother's level of caring, mother's level of overprotection, father's level of caring and father's level of overprotection. Second, *chi*-squared tests were conducted to test whether women being above or below the clinical cutoff for depressive symptoms was associated with their perceptions of their mothers and fathers as high or low in caring and overprotection.

### **Main analyses**

First, to assess the relation between women's perceptions of their parents, and their own parenting behaviours, independent sample *t*-tests were run comparing women's own parenting behaviours, infant-directed speech, joint attention and positive engagement synchrony, based on their perceptions of their own mothers and fathers (high vs. low control and high vs. low caring). Using Levene's Test for Equality of Variances, we determined whether to assume or not assume equal variances between the groups for each *t*-test. Where appropriate, we used the *t*-value and degrees of freedom corrected for equal variance not assumed. Second, when current parenting behaviours were associated with women's perceptions of their fathers, we next assessed whether those relations were significantly different from the association between current parenting behaviours and women's perceptions of their mothers and vice-versa. For this, we ran biserial correlation analyses between respective current parenting behaviours and women's perception of their parents. Then we ran the test of the difference between two dependent correlations with one variable in common (Lee & Preacher, 2013). Third, when current parenting behaviours were associated with perceptions of women's parents, we assessed the relation between women's current parenting and global predictors. Using independent samples *t*-tests, we compared current parenting behaviours between mothers who were above and below the clinical cutoff for depression symptomatology. Next, Pearson correlations assessed the relation between SES and current maternal parenting behaviours. Based on the results of the first and third analyses, we assessed whether mothers' perceptions of their parents predicted their own parenting behaviours independent of SES and maternal depressive status. To arrive at the best regression model that predicted parenting behaviours, stepwise regressions were run using the Statistical Package for Social Sciences (SPSS) Version 20.

## **Results**

### **Preliminary analyses**

Positive engagement synchrony was log transformed and then winsorized to within 3 standard deviations of the mean after which the variable was normally distributed. Three outliers for positive



**Table 1.** Descriptive statistics for all the variables.

A			
Variables	<i>n</i>	High (%)	Low (%)
PBI (Women perceiving high or low care and overprotection in their parents)			
Maternal care	73	68.5	31.5
Maternal overprotection	73	31.5	68.5
Paternal care	73	60.3	39.7
Paternal overprotection	73	42.5	57.5
CES-D (Women above and below the clinical cut off for depressive symptomatology)	73	22.9	77.1
B			
Variables	<i>n</i>	<i>M</i> ( <i>SD</i> )	
SES			
Income to needs ratio	72	6.08 (3.78)	
Women's occupational prestige (ranging from 1 to 5; 1 requiring less to no prep and 5 requiring extensive preparation)			
	57	4.02 (.89)	
Women's education level (ranging from 1 to 5; 4 college 5 grad school)			
	73	4.47 (0.80)	
Maternal Behaviours (in proportions)			
Infant Directed Speech	72	0.22 (0.19)	
Positive Engagement Synchrony	70	0.05 (0.06)	
Joint Attention (frequency)	72	59.87 (33.96)	

engagement synchrony were winsorized. Table 1 shows the descriptive statistics of all the variables. We next examined the relations of maternal depressive status and SES to women's perceptions of their parents. Table 2 shows the correlations between all the dependent variables, SES and maternal depression. *T*-test revealed that women who perceived their mothers to be high on caring came from higher SES families ( $M = 0.19$ ,  $SD = 0.71$ ) compared to those who perceived their mothers as low on caring, ( $M = -0.21$ ,  $SD = 0.91$ ),  $t(73) = -2.06$ ,  $p = .043$ ,  $d = -0.50$ ). SES was unrelated to women's perceptions of their mothers on overprotection and women's perceptions of their fathers on caring and overprotection. *Chi*-squared tests revealed that maternal depressive status was unrelated to women's perceptions of their mothers or fathers on caring or overprotection.

### Women's perceptions of their parents and their own parenting behaviours

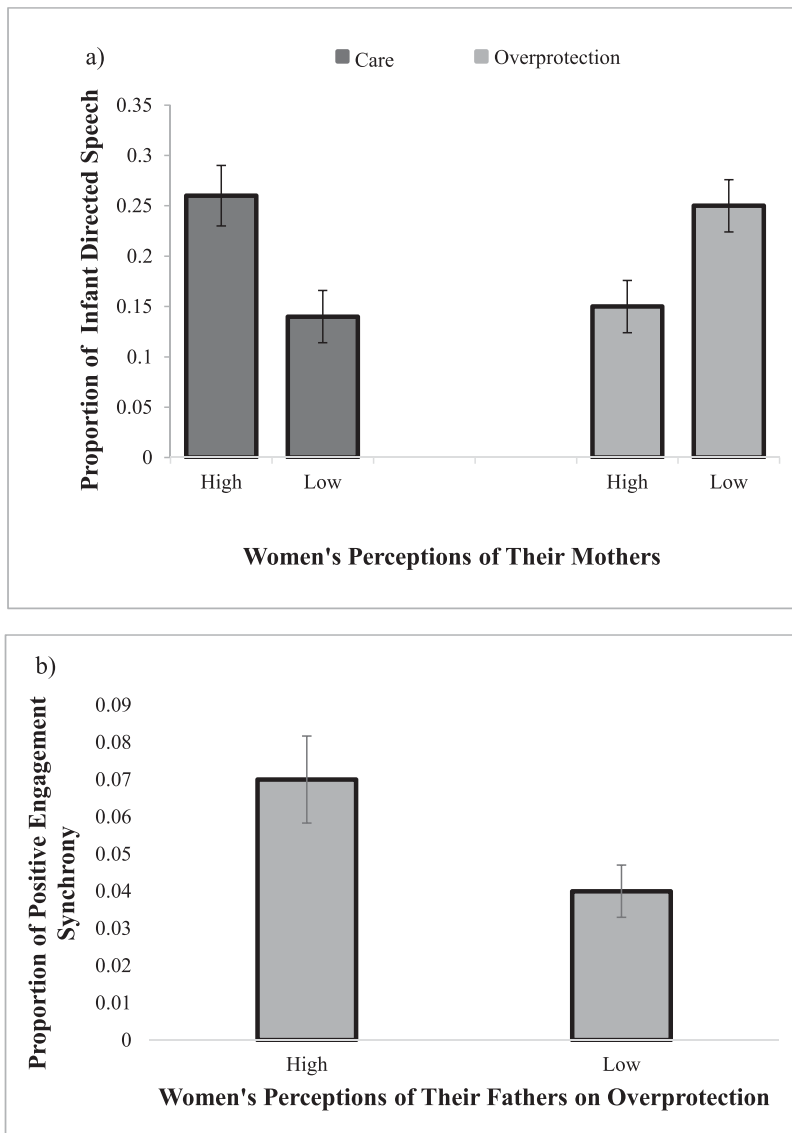
Greater use of infant-directed speech was observed in women who perceived their mothers as high on caring ( $M = 0.26$ ,  $SD = 0.21$ ) compared to those who perceived their mothers as low on caring ( $M = 0.14$ ,  $SD = 0.12$ ),  $t(66.11) = -3.06$ ,  $p = .003$ ,  $d = -0.73$ . Greater infant-directed speech was also used by women who perceived their mothers as low on overprotection ( $M = 0.25$ ,  $SD = 0.22$ ) compared to those who perceived their mothers as high on overprotection ( $M = 0.15$ ,  $SD = 0.13$ ),  $t(65.143) = 2.58$ ,  $p = .012$ ,  $d = -0.61$ . Both these relations are shown in Figure 1(a). Women who perceived their fathers as high on overprotection had higher positive engagement synchrony ( $M = 0.07$ ,  $SD = 0.06$ ) than those who perceived their fathers as low on overprotection ( $M = 0.04$ ,  $SD = 0.05$ ),  $t(49.8) = -2.21$ ,  $p = 0.03$ ,  $d = -0.55$ . Figure 1(b) presents this result a bar diagram. Women who perceived their fathers as high on overprotection also showed a strong trend of engaging in more joint

**Table 2.** Correlations of SES, CES-D, and maternal behaviours.

Measure	1	2	3	4	5
1. SES	–				
2. CES-D	–.24**	–			
3. Infant-directed speech	.03	–.12	–		
4. Joint attention	.19*	.10	.05	–	
5. Positive engagement synchrony	.004	.08	.04	.04	–

\* $p < .01$ .

\*\* $p < .001$ .



**Figure 1.** Relation between women's perceptions of (a) care and overprotection in their mothers and their own use of infant-directed speech and, (b) overprotection in their fathers and proportion of positive engagement synchrony with their infants.

attention ( $M = 69.47$ ,  $SD = 39.77$ ) than those who perceived their fathers as low on overprotection ( $M = 53.02$ ,  $SD = 27.62$ ),  $t(48.37) = -1.95$ ,  $p = .057$ ,  $d = -0.49$ .

Additionally, the test of the difference between two dependent correlations with one variable in common revealed that the associations of infant-directed speech with women's perceptions of their mothers versus their fathers as controlling, were significantly different from each other,  $Z = 1.78$ ,  $p = .07$ . However, the associations of infant-directed speech with women's perceptions of their mothers versus their fathers as caring were not significantly different,  $Z = 3.542$ ,  $p < .01$ . Likewise, the associations of positive engagement synchrony with women's perceptions of their mothers versus their fathers as controlling were not significantly different,  $Z = 0.69$ ,  $p = .491$ .

In order to later determine whether women's perceived parenting styles of their parents predicted their own use of infant-directed speech and positive engagement synchrony independently from or

together with the global predictors (i.e. SES and maternal depressive status), the relation of these two variables with SES and maternal depressive status were also examined.

### **Global predictors and maternal parenting behaviours**

Mothers who were below the clinical cut off for depression symptomatology used more infant-directed speech ( $M = 0.24$ ,  $SD = 0.21$ ) than those who were above the clinical cut off,  $M = 0.14$ ,  $SD = 0.10$ ,  $t(53.78) = 2.61$ ,  $p = 0.012$ ,  $d = 0.64$ . Positive engagement synchrony was unrelated to maternal depressive status. SES was not related to infant-directed speech or positive engagement synchrony.

### **Predictors of infant directed speech**

To determine significant predictors of infant-directed speech, it was regressed on women's perceptions of their mothers' level of caring, level of overprotection and their depressive status in a stepwise regression analysis. Only the aforesaid predictors were included in the model because these were the only variables that had a significant relation with infant-directed speech. The model revealed a main effect of women's perceptions of their mothers' level of caring (as shown in Table 3). Women who thought their mothers were highly caring used more infant-directed speech with their own infants. The model accounted for 10% of the variance in use of infant-directed speech,  $F(1, 67) = 7.39$ ,  $p = .008$ . Women's perceptions of their mothers' level of overprotection and their depressive status did not have significant main effects in the model.

## **Discussion**

This study investigated women's perceptions of how caring and controlling each of their parents were in relation to their interactions with their six-month-old infants during freeplay. Specifically, we assessed (a) whether women's perceptions of caring and control in their fathers versus mothers related differentially to their early parenting behaviours, (b) how these perceptions related to specific parenting behaviours rather than global parenting measures and, (c) whether these relations stood independently from or by virtue of known global predictors of early parenting behaviours. In line with previous literature and our hypothesis, we found that women's perceptions of their mothers as highly caring related to positive parenting whereas, women's perceptions of their mothers as highly controlling related less positive parenting. To our surprise, we found that women's perceptions of their fathers as highly controlling related to positive parenting. This suggested that women's perceptions of having highly controlling parents are related to less positive parenting only when the perception of high control is about their mothers. Thus, women's perceptions of each of their parents on caring and overprotection differed in how they related to various aspects of parenting behaviours. Furthermore, one of these associations was independent of women's depressive status.

Based on past research (e.g. Feldman et al., 2011; Madden et al., 2015), we hypothesized that women's perceptions of their mothers as highly caring would relate to specific aspects of positive parenting namely, more infant-directed speech, joint attention and positive engagement with their infants whereas women's perceptions of their mothers as highly controlling would relate to

**Table 3.** A Stepwise regression model with women's perceptions of their mothers' level of caring and overprotection and their depressive status as predictors of infant-directed speech.

Predictors	Model 1		
	<i>B</i>	<i>SE B</i>	$\beta$
Women' perceptions of caring in their mothers	0.13	0.05	0.315
$R^2$	0.10		
<i>F</i>	7.39***		

\*\*\* $p < .01$ .

less positive parenting including less infant directed speech, joint attention and positive engagement with their infants. Our study partially supported the hypotheses as women's perceptions of their mothers as caring and controlling related to infant directed speech. We found that women who thought that their mothers were highly caring used more infant directed speech and women who thought that their mothers were highly controlling used less infant directed speech. Women's perceptions of their mothers as highly caring or controlling did not have a significant relation with their engagement in joint attention nor synchronous positive behaviour with their infants.

The main goal of our study was to explore whether the above pattern of results was also true for women who remembered their fathers as highly caring and/or controlling. Surprisingly, we found that women who thought that their fathers were highly controlling engaged more in positive engagement synchrony. We also found a strong trend of women who thought that their fathers were highly controlling engaging in more joint attention. Women's perceptions of their fathers as highly caring did not have a significant relation with any of their current parenting behaviours.

First, our findings indicate that the perceptions about women's mothers' and fathers' parenting in the same construct, control, relate to different aspects of how they interact with their own infants. It is striking that women remembering their mothers as highly controlling related to less optimal parenting (i.e. infant-directed speech) whereas, women remembering their fathers as more controlling related to positive parenting (i.e. positive engagement synchrony). Furthermore, women perceiving their mothers as controlling and using less infant-directed speech was significantly different from the relation between women perceiving their fathers as controlling and their use of infant-directed speech. It is possible that exertion of control by fathers is more acceptable than that by mothers leading to this differential outcome in parenting. Baumrind (2012) discussed that whether controlling parenting has a positive or negative influence on a child depends on the child's perception of the controlling behaviour as coercive or normative. Our participants' interpretations of whether control by their mothers and fathers is normative or coercive parenting could have influenced whether their own parenting behaviours were positive or less positive. Based on gender stereotypic differences in mothering and fathering roles that are believed to be socio-culturally or biologically determined (Dufur et al., 2010), it is possible that control by fathers is perceived to be normative and thus good parenting by women. This could have led to better a parenting outcome in the mothers of our study who perceived their fathers to be highly controlling. It is possible that control by mothers is not perceived to be normative by women. This could help explain why in our sample, women who thought that mothers were highly controlling showed less positive parenting. Further research is necessary to establish this idea, as the PBI used in this study was not designed to differentiate whether women's perceptions of control practiced by their parents was normative or coercive.

Second, the study shows that there was a variation in the way women's perceptions of their parents related or did not related to specific aspects of maternal parenting. Specifically, women's perceptions of care in their mothers influenced infant-directed speech only and women's perceptions of control in their fathers related to positive engagement synchrony and showed a strong trend with joint attention. Previous literature has demonstrated the influence of adults' perceptions of their parents on their broader approach to parenting (e.g. Madden et al., 2015) which has implications for infant development more globally. Our study extends this literature and highlights the importance of assessing the influence of adults' perceptions of their parents on their specific parenting behaviours that may have implications for specific domains of infant development. For example, because how women remember their mothers' parenting influences their use of infant-directed speech, this could have implications for infant development in specific domains that are associated with infant-directed speech (e.g. attachment formation, language, emotion and executive function). Likewise, mothers' recollections of how controlling their fathers were could have implications for specific domains of infant development that are associated with positive engagement synchrony (e.g. social development).

Findings of this study also established that women's perceptions of how they were parented is an important predictor of early parenting behaviours as their influences persist independently from and

even in the presence of global predictors of parenting behaviours, such as maternal depressive status. Women's perceptions of their parents did not relate to maternal depressive status. Only women's perceptions of their mothers' as highly on caring uniquely predicted greater use of infant-directed speech; women's perceptions of their own mothers as highly controlling and maternal depressive status did not provide additional predictive value when all three were included in the same model.

It is important to note that mothers' perceptions of their parents may not be accurate representations of their actual childhood experiences. Perceptions are shaped by memories. Memories may be biased or susceptible to alterations by the personal characteristics of mothers such as personality, mood and attachment styles. For example, individuals who are predisposed to humour and optimism are more likely to perceive their parents as caring (Lichtenstein et al., 2003). Those who exhibit depressive symptoms tend to recall negative experiences more frequently than positive experiences (Zelenski & Larsen, 1999). Likewise, individuals who are less anxiously attached to their parents tend to perceive their parents as more caring than those who are more anxiously attached (Bartz et al., 2010). As perceptions can be influenced by many factors, they are not precise depictions of actual events. It is important to distinguish that perceptions of childhood experiences and actual childhood experiences may be separate constructs.

Hence the current study shows that mothers' perceptions of their own parents, irrespective of whether they represent actual experiences, are powerful indicators of their current parenting. We already know from intergenerational studies that the way individuals are actually parented also predicts how they parent their children. What remains unexplored is the relation between women's perceptions of how they were parented and their actual experiences in shaping their current parenting. Thus, future intergenerational studies could assess whether women's perceptions of their parents mediate or moderate the relation between how they were actually parented and the way they parent their own children. In the case that perception of own parents is a mechanism, the PBI could potentially be a screening tool to identify mothers at risk for suboptimal parenting. It would not be pragmatic to have observed data on how individuals were actually parented to use it as a screening tool.

Future research could also study how men's perceptions of their parents influence specific early parenting behaviours that they engage in. Our study only investigated women's perceptions of how they were parented as a determinant of specific early parenting behaviour. Given that there were differences in how women perceived care and control in parents of different genders, there may also be gender differences in how an individual perceives care and control exercised by parents and whether it influences specific aspects of parenting. Our sample of mothers were highly educated and thus, the generalizability of our findings from this study are limited. Future studies should include mothers with a range of educational background. Future studies could also investigate whether adults' perceptions of their parents influence their early parenting behaviours similarly across all their children. The data from our study is derived from mothers' interactions with only one child. Mothers' early parenting behaviours could differ from one child to another and this could have implications for how perceptions of one's own parents' is related to early parenting. Finally, it is also important to conduct a study of this nature cross-culturally. This is especially important because how individuals perceive the level of caring and control could differ in various cultures. These differences can have diverse influences on early parenting.

Overall these findings suggest that women's perceptions of their parents' caring and control are important predictors of early parenting behaviours. Specifically, women's perceptions of high control in their parents were related to less positive parenting only when the perception of high control was about the mother. When the perception of high control was about the father, women tended to engage in positive parenting. Furthermore, the study shows that women's perceptions about the care and control exercised by their own parents relate differentially to various aspects of their parenting behaviours, and perception of caring mothers predicts early parenting above and beyond a global predictor of early maternal parenting. Thus, for mothers at risk for less positive early parenting, whether they remember their parents as caring or controlling during their childhood could serve as a protective factor or convey additional risk depending on the gender of their parents.

## Acknowledgements

The authors acknowledge Ryan Johnson and Katie Kao for their contribution and are grateful to all the families who participated.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Notes on contributors

**Charu T. Tuladhar** holds an MA in Psychology and is a doctoral student in Developmental Science. Her research focuses on early life experiences and the development of physiological stress system in infancy.

**Ashley St. John** holds an MA in psychology and is a doctoral student in Developmental Science at Boston University. Her research interests include executive functioning in early childhood as well as the development of physiological stress systems and the brain.

**Amanda R. Tarullo** is an Assistant Professor of Psychological and Brain Sciences at Boston University and an Associate Editor of *Infant and Child Development*. Her research focuses on how early experiences shape brain and behavioral development in infants and young children.

## ORCID

Charu T. Tuladhar  <http://orcid.org/0000-0002-7451-3154>

## References

- Adam, E. K., Gunnar, M. R., & Tanaka, A. (2004). Adult attachment, parent emotion, and observed parenting behavior: Mediator and moderator models. *Child Development, 75*(1), 110–122.
- Bartz, J., Zaki, J., Ochsner, K., Bolger, N., Kolevzon, A., Ludwig, N., & Lydon, J. (2010). Effects of oxytocin on recollections of maternal care and closeness. *Proceedings of the National Academy of Sciences of the United States of America, 107*(50), 21371–5.
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs, 75*(1), 43–88.
- Baumrind, D. (2012). Differentiating between confrontive and coercive kinds of parental power-assertive disciplinary practices. *Human Development, 55*(2), 35–51. doi:10.1159/000337962
- Belsky, J., Sligo, J., Jaffee, S. R., Woodward, L., & Silva, P. A. (2005). Intergenerational transmission of warm-sensitive-stimulating parenting: A prospective study of mothers and fathers of 3-year-olds. *Child Development, 76*(2), 384–396.
- Bigelow, A. E., MacLean, K., Proctor, J., Myatt, T., Gillis, R., & Power, M. (2010). Maternal sensitivity throughout infancy: Continuity and relation to attachment security. *Infant Behavior and Development, 33*(1), 50–60. doi:10.1016/j.infbeh.2009.10.009
- Boudreault-Bouchard, A., Dion, J., Hains, J., Vandermeersch, J., Laberge, L., & Perron, M. (2013). Impact of parental emotional support and coercive control on adolescents' self-esteem and psychological distress: Results of a four-year longitudinal study. *Journal of Adolescence, 36*(4), 695–704. doi:10.1016/j.adolescence.2013.05.002
- Bowlby, J. (1969). *Attachment and loss*. New York, NY: Basic Books.
- Conger, R. D., Neppl, T., Kim, K. J., & Scaramella, K. (2003). Angry and aggressive behavior across three generations: A prospective, longitudinal study of parents and children. *Journal of Abnormal Child Psychology, 31*(2), 143–160.
- Conger, R. D., Schofield, T. J., & Neppl, T. K. (2012). Intergenerational continuity and discontinuity in harsh parenting. *Parenting: Science & Practice, 12*(2/3), 222–231. doi:10.1080/15295192.2012.683360
- Dufur, M. J., Howell, N. C., Downey, D. B., Ainsworth, J. W., & Lapray, A. J. (2010). Sex differences in parenting behaviors in single-mother and single-father households. *Journal of Marriage and Family, 72*(5), 1092–1106. doi:10.1111/j.1741-3737.2010.00752.x
- Feldman, R. (2007). Parent-Infant synchrony and the construction of shared timing; physiological precursors, developmental outcomes, and risk conditions. *Journal of Child Psychology and Psychiatry, 48*(3-4), 329–354. doi:10.1111/j.1469-7610.2006.01701.x
- Feldman, R., & Eidelman, A. I. (2004). Parent-infant synchrony and the social-emotional development of triplets. *Developmental Psychology, 40*, 1133–1147.

- Feldman, R., Gordon, I., & Zagoory-Sharon, O. (2011). Maternal and paternal plasma, salivary, and urinary oxytocin and parent-infant synchrony: Considering stress and affiliation components of human bonding. *Developmental Science*, 14(4), 752–761.
- Fox, R. A., Platz, D. L., & Bentley, K. S. (1995). Maternal factors related to parenting practices, developmental expectations, and perceptions of child behavior problems. *The Journal of Genetic Psychology*, 156(4), 431–441.
- George, C., Kaplan, N., & Main, M. (1985). *Adult attachment interview*. Unpublished manuscript, Berkeley: University of California.
- Haltigan, J. D., Leerkes, E. M., Supple, A. J., & Calkins, S. D. (2014). Infant negative affect and maternal interactive behavior during the still-face procedure: The moderating role of adult attachment states of mind. *Attachment & Human Development*, 16(2), 149–173. doi:10.1080/14616734.2013.863734
- Hoff, E., Laursen, B., & Tardiff, T. (2002). Socioeconomic status and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting* (2nd ed., pp. 231–252). Mahwah, NJ: Erlbaum.
- Jahromi, L. B., Putnum, S. P., & Stifter, C. A. (2004). Maternal regulation of infant reactivity from 2 to 6 months. *Developmental Psychology*, 40(4), 477–487. doi:10.1037/0012-1649.40.4.477
- Lee, I. A., & Preacher, K. J. (2013, September). Calculation for the test of the difference between two dependent correlations with one variable in common [Computer software]. Retrieved from <http://quantpsy.org>
- Leerkes, E. M., Supple, A. J., O'Brien, M., Calkins, S. D., Haltigan, J. D., Wong, M. S., & Fortuna, K. (2015). Antecedents of maternal sensitivity during distressing tasks: Integrating attachment, social information processing, and psychobiological perspectives. *Child Development*, 86, 94–111. doi:10.1111/cdev.12288
- Lichtenstein, P., Ganiban, J., Neiderhiser, J., Pedersen, N., Hansson, K., Cederblad, M., ... Reiss, D. (2003). Remembered parental bonding in adult twins: Genetic and environmental influences. *Behavior Genetics*, 33(4), 397–408.
- Madden, V., Domoney, J., Aumayer, K., Sethna, V., Iles, J., Hubbard, I., ... Ramchandani, P. (2015). Intergenerational transmission of parenting: Findings from a UK longitudinal study. *European Journal of Public Health*, 25(6), 1030–1035. doi:10.1093/eurpub/ckv093
- Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development*, 50 (1–2, Serial No. 209), 66–104.
- Mundy, P., & Newell, L. (2007). Attention, joint attention, and social cognition. *Current Directions In Psychological Science*, 16(5), 269–274.
- Mundy, P., & Sigman, M. (2006). Joint attention, social competence and developmental psychopathology. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology* (pp. 293–332). Hoboken, NJ: Wiley.
- Neppi, T. K., Conger, R. D., Scaramella, L. V., & Ontai, L. L. (2009). Intergenerational continuity in parenting behavior: Mediating pathways and child effects. *Developmental Psychology*, 45, 1241–1256.
- Parker, G. (1983). *Parental overprotection: A risk factor in psychosocial development*. New York, NJ: Grune & Stratton.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52, 1–10.
- Pinquart, M. (2015). Associations of parenting styles and dimensions with academic achievement in children and adolescents: A meta-analysis. *Educational Psychology Review*, 1–19. doi:10.1007/s10648-015-9338
- Raby, K. L., Lawler, J. M., Shlafer, R. J., Hesemeyer, P. S., Collins, W. A., & Sroufe, L. A. (2015). The interpersonal antecedents of supportive parenting: A prospective, longitudinal study from infancy to adulthood. *Developmental Psychology*, 51(1), 115–123. doi:10.1037/a0038336
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385–340.
- Rogosch, F. A., Cicchetti, D., & Toth, S. L. (2004). Expressed emotion in multiple subsystems of the families of toddlers with depressed mothers. *Development and Psychopathology*, 16(3), 689–709.
- Saint-Georges, C., Chetouani, M., Cassel, R., Apicella, F., Mahdhaoui, A., Muratori, F., & Cohen, D. (2013). Motherese in interaction: At the cross-road of emotion and cognition? (A systematic review). *Plos ONE*, 8(10), 1. doi:10.1371/journal.pone.0078103
- Schaffer, H. R., & Emerson, P. E. (1964). Patterns of response to physical contact in early human development. *Journal of Child Psychology and Psychiatry*, 5(1), 1–13. doi:10.1111/j.1469-7610.1964.tb02126.x
- Shaffer, A., Burt, K. B., Obradović, J., Herbers, J. E., & Masten, A. S. (2009). Intergenerational continuity in parenting quality: The mediating role of social competence. *Developmental Psychology*, 45(5), 1227–1240. doi:10.1037/a0015361
- Sroufe, L. A., & Fleeson, J. (1986). Attachment and the construction of relationships. In W. Hartup & Z. Rubin (Eds.), *Relationships and development* (pp. 51–71). Hillsdale, NJ: Erlbaum.
- Tomasello, M. (1995). Joint attention as social cognition. In C. Moore & P. J. Dunham (Eds.), *Joint attention: Its origin and role in development* (pp. 103–130). Hillsdale, NJ: Erlbaum.
- Van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2010). Invariance of adult attachment across gender, age, culture, and socioeconomic status? *Journal of Social and Personal Relationships*, 27(2), 200–208. doi:10.1177/0265407509360908
- Zelenski, J., & Larsen, R. (1999). Susceptibility to affect: A comparison of three personality taxonomies. *Journal of Personality*, 67(5), 761–791.