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## Childless adults with higher secure attachment state have stronger parenting motivation



Gang Cheng<sup>a,b,c</sup>, Dajun Zhang<sup>a,b,\*</sup>, Yizhuo Sun<sup>a</sup>, Yuncheng Jia<sup>a,b</sup>, Na Ta<sup>a,b</sup>

<sup>a</sup> School of Psychology, Southwest University, 400715 Chongging, China

<sup>b</sup> Center for Mental Health Education, Southwest University, 400715 Chongging, China

<sup>c</sup> School of Educational Science, Guizhou Normal University, 550001 Guiyang, China

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#### ABSTRACT

This study aimed to systematically examine the coherence in the motivation of parenting with the security attachment state of adults. A total of 228 childless participants (126 men, 102 women) first completed a selfreport questionnaire including the State Adult Attachment Measure scale and the Interest in Infants questionnaire. They were then administered three laboratory-based tasks: a) liking, which measured the specific hedonic experience to infants' neutral faces; b) representational responding (actively seeking infants' neutral faces); and c) evoked responding (actively retaining images of infants' neutral faces). The results revealed that after controlling for gender, anxiety, and avoidance, security attachment state was associated with higher levels of interest in infants, assessed via verbal measures, and associated with liking and wanting (divided into representational and evoked responding) for infants' neutral faces. Moreover, infant faces elicited pleasure but not the sense of dominance or wanting in individuals with high avoidance attachment state. These results suggest that improving security attachment state may enhance motivation for parenting and improve the quality of parental caregiving.

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### 1. Introduction

Attachment is a lifetime construct that guides thoughts, feelings, and behaviors in relationships across the life span (Bowlby, 1979). Although Bowlby focused mainly on attachment in infancy, he also proposed that the cognitive representations of early relationships serve as templates for future relationships (Bowlby, 1969). Following this view, many researchers in recent decades have investigated the links between adult attachment and parenting. Their results show that, regardless of data collection method (interview-based measures or self-report questionnaires), a secure attachment state was consistently related to more positive parenting outcomes, and insecurity to negative parenting outcomes (Jones, Cassidy, & Shaver, 2015; Van IJzendoorn, 1995).

Parents' own attachment can influence the quality of parental caregiving, which is believed to be derived by internal working models (IWMs) of relationships. IWMs are formed by early attachment experiences and serve as templates for current and future relationships (Bretherton & Munholland, 2008). If an infant received sensitive and responsive care from an attachment figure, he/she would likely form representations of the self as worthy of love and care, and the belief that the attachment figure can be relied on in times of need. These representations then continue to influence thoughts, feelings, and behaviors in their relationships with their own children (Johnson et al., 2010).

Corresponding author. E-mail address: Zhangdj@swu.edu.cn (D. Zhang).

Several studies have suggested that IWMs play a crucial role in the formation of parent-child relationships. Studies related to parenting motivation found that insecure attachment is related to less desire to have children among non-parents (Nathanson & Manohar, 2012; Rholes, Simpson, & Blakely, 1995; Rholes, Simpson, Blakely, Lanigan, & Allen, 1997; Scharf & Mayseless, 2011) and prenatal couples (Rholes, Simpson, & Friedman, 2006). Moreover, the lack of desire to have children is considered a predictor of potential problems in parentchild relationships (Rholes et al., 1997). Neurobiological studies of attachment behaviors also found differences in maternal brain and oxvtocin response to infant cues between different maternal attachment styles groups (Strathearn, Fonagy, Amico, & Montague, 2009).

The above results indicate that individuals with secure attachment styles have stronger motivation for parenting, and the variety of motivation may contribute significantly to the intergenerational transmission of attachment. However, there are some limitations in the extant literature.

First, many researchers have suggested that attachment style is likely to be influenced or shaped by major life events (especially those pertaining to close relationships) and diverse contextual factors, and these temporary fluctuations can lead to meaningful behaviors (Cozzarelli, Karafa, Collins, & Tagler, 2003; Davila & Sargent, 2003; Gillath & Shaver, 2007; Kirkpatrick & Hazan, 1994). However, these studies still considered attachment style to be relatively stable; therefore, such conclusions could explain only the relationship between the stable dispositions of attachment and the motivation of parenting. Although studies

have found that new parents and new lovers activate greater brain reactivity than romantically unattached singles when faced with infant stimuli (Weisman, Feldman, & Goldstein, 2012), no study has directly verified whether attachment state could influence the motivation for parenting.

Second, the aforementioned studies used mainly self-report methods (Nathanson & Manohar, 2012; Rholes et al., 1997; Rholes et al., 2006; Scharf & Mayseless, 2011), which are vulnerable to the common method bias and social desirability. Thus, the correlation between attachment style and parenting motivation could be overestimated. Furthermore, Lorenz (1943) argued that infantile features are highly biologically relevant stimuli for members of a species, indicating that human beings have an evolved perceptual bias to find infantile features attractive. Indeed, pictures of infants are a type of hedonic stimuli, which were consistently preferred by children and adults (Charles, Alexander, & Saenz, 2013; Fullard & Reiling, 1976; Parsons, Young, Kumari, Stein, & Kringelbach, 2011). Moreover, responses to visual tests that used images of infants as stimuli were found to be different from those of verbal tests that used texts as stimuli (Maestripieri & Pelka, 2002). Thus, there is a need to assess interest in infants with non-verbal assessments, such as through behavioral paradigms.

Third, researchers have found that individuals with secure attachment styles have stronger motivations for parenting. However, whether these differences influence behavior is still unknown. Recent progress in neurobiology regarding the understanding of the subcomponents underlying the evaluation of hedonic stimuli have suggested that reward has multiple components; brain systems underlying *wanting* (the motivation to engage a set of effortful behavioral responses to obtain a desirable reward) are distinct from those underlying *liking* (the degree to which a reward is experienced as pleasurable on consumption) (Berridge & Robinson, 2003). Moreover, studies have shown that the motivational salience of infant faces is reflected not only in conscious appraisal but also through behavioral response (Charles et al., 2013; Parsons et al., 2011). To our knowledge, no study has examined whether the viewing of infant faces influences the behavior of individuals with secure attachment.

To better understand the influence of attachment to motivation for parenting, we first verified whether attachment state could predict the motivation for parenting using verbal tests. Then, following the paradigm used by Heerey and Gold (2007), we used neutral infant and adult faces to obtain behavioral measures of liking and wanting; making key presses to stimuli that one would like to see again or to avoid are operationalized as wanting. During the wanting trials, key-press performed after stimulus presentation was termed as representational responding, while that performed to prolong or reduce exposure to a perceptually available stimulus was termed evoked responding. Finally, selfreport on the hedonic value (perceived pleasantness) of each stimulus was defined as liking.

In the present study, we sought to systematically examine coherence between motivation for parenting and adult security attachment state. We preliminarily explored the following hypotheses:

- Secure attachment state in adults is positively correlated with selfreported parenting motivation.
- Secure attachment state in adults is positively correlated with liking and wanting (divided into representational and evoked responding) toward infants, tested by behavioral responses to visual presentations.
- 3: The correlation between secure attachment state and parenting motivation is lower in the visual test than the verbal test.

#### 2. Method

#### 2.1. Participants

To ensure comparability with previous studies (Nathanson & Manohar, 2012; Rholes et al., 1997; Scharf & Mayseless, 2011), we

recruited 228 participants (126 men, 102 women) at Chongqing University of Science and Technology. Participants were unmarried and childless and aged 18–28 years (M = 19.22, SD = 1.68). The majority (over 94%) of the sample was of Han ethnicity. Participation was anonymous and participants were compensated 20 yuan. This study was approved by the Ethics Committee of our university (No. 2014179).

#### 2.2. Measures

#### 2.2.1. State adult attachment measure (SAAM)

The SAAM (Gillath, Hart, Noftle, & Stockdale, 2009) is a 21-item selfreport measure for individual differences on temporary fluctuations in the sense of attachment. It contains three reliable subscales measuring state levels of attachment-related anxiety, avoidance, and security. Items are rated on a 7-point Likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with 4 (*neutral/mixed*) as the midpoint of the scale. This study used the Chinese version of the SAAM, which was translated and revised by Ma et al. (2012) and has been shown to have excellent psychometric properties. The psychometric data ranges of the three subscales were anxiety, 5–35; avoidance, 7–49; and security, 9–63.

#### 2.2.2. Interest in infants

Interest in Infants (Maestripieri & Pelka, 2002) is a 10-item measure revised by Charles et al. (2013) and demonstrated to be reliable and valid. In the present study, the Chinese version of Interest in Infants (obtained via back-translation) was employed. The questionnaire is "If you were at a party and there was a baby in the room that you did not know, what would you most likely do?". Then, ten different types of interactions are listed (e.g., "avoid the baby entirely"). Participants had to indicate the likelihood of their engaging in each of the listed activity on a 6-point scale from 1 (*not at all likely*) to 6 (*very likely*). Items indicating avoidance of the infant were reverse-coded, and the total score was calculated by summing the scores for each item, with positive scores reflecting high interest in infants.

#### 2.2.3. Computerized display

The experimental procedures using the computer to evaluate the wanting and liking components of the motivational system for participants were divided into three parts (see Fig. 1). The task was programmed using E-prime stimulus presentation software.

In the first part, participants viewed and rated 16 slides, each containing sets of three photos from the Chinese Infant Affective Face Picture System (Cheng, Zhang, Guan, & Chen, 2015) or the Chinese Affective Face Picture System (Gong, Huang, Wang, & Luo, 2011). Eight neutral infant, four neutral adult male, and four neutral adult female slides made up the set. All images were presented in grayscale and matched for size and luminosity. Each slide contained three images that were similar in facial expression intensity; the infant stimuli did not differ from the adult stimuli in intensity (t(46) = 0.75, p = .46). Participants were asked to assess the degree to which each slide was experienced as pleasant, arousing, and dominant using the Self-Assessment Manikin, an affective rating system devised by Lang, Bradley, and Cuthbert (1999). In this system, a graphic figure depicting values along each of the 3 dimensions on a continuously varying scale is used to indicate emotional reactions. Participants rated the degree to which each slide was experienced as pleasurable, arousing, and dominant using 9-point Likert scales anchored by 1 (extremely unpleasant/calm/dominated) and 9 (extremely pleasant/arousing/in control). This part was considered to require little effortful behavior, thereby serving mainly as a measure of hedonic experience (liking).

In the second part, wanting or representational responding was measured after the assessment of each slide. Before the assessment procedure, participants were informed that they would later view a slideshow containing some of the slides they had rated. If they wanted to see a slide again, they could rapidly press the "n" and "m" keys, and

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