

Attachment Anxiety and Loneliness Affect Physical Perceptions of Ambiguous Figures

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Abstract

The purpose of this study was to examine how attachment anxiety and feelings of loneliness interact to influence perceptions of an ambiguous point-light walker. During prescreening, participants completed the Experiences in Close Relationships-Revised Questionnaire (Fraley et al., 2000). Subsequently, 143 participants were instructed to write about a time in their lives when they felt lonely (threat condition) or to write about what it is like to walk around their university campus (non-threat condition; Hicks et al., 2010). Participants were then exposed to many trials depicting a point-light walker in which they had to identify its direction of rotation. Analyses revealed that individuals high (vs. low) in attachment anxiety were more likely to view the figure as walking toward them; however, when participants were primed with loneliness, this perceptual difference was not observed. Explanations for these results are discussed as well as important theoretical implications for the literature on attachment.

Introduction

The notion that motivational drives can alter one's physical perceptions of the world was first explored as part of the "New Look" approach to perception in the 1940s and 1950s (e.g., Bruner & Goodman, 1947). One of the earliest studies in this domain found that the more valuable a coin was the more children overestimated its size; this effect was particularly strong for poor compared to wealthy children (Bruner & Goodman, 1947). Although this study and a few others purported to demonstrate that perception is psychological, this particular aspect of the New Look perspective soon waned when faced with methodological challenges and strong critics. However, in recent years, there has been resurgence in the idea that inner states, such as one's drives, emotions, and desires, impact one's representation of the physical environment (see Balcetis & Lassiter, 2010).

Of particular interest to the current project, researchers have identified several top-down influences that impact spatial layout perceptions related to distance. For example, fear can influence people's perceptions of the height of a cliff (e.g., Stefanucci & Proffitt, 2009); collective identity can influence people's estimations of the distance between an in-group and an out-group location (Xiao & Van Bavel, 2012); and desirability can affect people's estimations of physical closeness to locations and objects (Alter & Balcetis, 2011; Balcetis & Dunning, 2010). Considering that attachment theory describes people's motivations, beliefs, and behaviours within romantic relationships and much of its theoretical framework surrounds ideas of proximity and distance, we hypothesized that attachment orientation is likely to exert influence on perceptions of distance within a social context.

One of the most important components of attachment theory is the varying ability of individuals to regulate interpersonal closeness and distance (e.g., Mikulincer & Shaver, 2007). Individuals with an anxious attachment orientation are likely to have had an attachment figure in their lives who was responsive to

their needs at certain times but not at others (Mikulincer, Shaver, Bar-On, & Ein-Dor, 2010). Due to this unpredictable responsiveness, highly anxious individuals seem to develop a complex view of others that researchers refer to as relational ambivalence (Mikulincer et al., 2010). On the one hand, individuals high in attachment anxiety possess positive attitudes toward relationships and relationship partners, and have extreme desires to be close to significant others (e.g., Hazan & Shaver, 1987). On the other hand, they also possess intense fears of rejection and are hypersensitive to cues of interpersonal threat (e.g., Mikulincer & Horesh, 1999). Attachment theory outlines that to cope with the threat or actual presence of rejection, highly anxious individuals intensify their proximity-seeking behaviours in an attempt to reaffirm closeness (Cassidy & Berlin, 1994).

Similar to anxious individuals, people high in attachment avoidance are likely to have had rejecting experiences associated with their attachment figures. However, instead of maintaining positive attitudes toward relationships and partners, highly avoidant individuals preserve the belief that attachment figures cannot be counted on for comfort or support (e.g., Baldwin, Fehr, Keedian, Seidel, & Thompson, 1993). Believing that proximity-seeking is a hopeless endeavor, avoidant people inhibit these behaviours and "aim at maximizing physical and psychological distance from the attachment figure" (Dewitte & De Houwer, 2008, p. 676).

The Present Study

Given that people high in attachment anxiety are driven by proximity goals, we predicted that these individuals would report closer perceptions of physical distance than individuals low in attachment anxiety. In addition, we thought that this relation would be modified by threat. Although people high in attachment anxiety desire closeness, they also simultaneously fear rejection. Past research shows that imagining a relationship threat (i.e., a break up) actually increases the positive association between anxious attachment and feelings of ambivalence toward closeness (Mikulincer et al., 2010). When primed with the potential threat of rejection, we predicted that highly anxious individuals' increased ambivalence toward closeness would result in this group no longer being more likely than low anxious individuals to see proximity in the ambiguous situation provided in the current study. In fact, we thought it plausible that under conditions of threat, individuals high in attachment anxiety would report greater perceptions of physical distance than individuals low in attachment anxiety.

Given that people high in attachment avoidance are motivated to maintain independence and interpersonal distance regardless of threat, we simply predicted that these individuals would perceive greater distance in comparison to individuals low in attachment avoidance.

To measure perceptions of physical distance, we used an ambiguous point-light walker task. Point-light walkers are moving human-like figures that are presented on a two-dimensional plane. Because presenting a three-

dimensional object on a two-dimensional plane results in a lack of depth cues, the point-light walker's direction of motion (i.e., walking toward or away from the viewer) is ambiguous and, thus, perception is influenced by personal bias (e.g., Vanrie, Dekeyser, & Verfaillie, 2004).

It is important to note that, in general, people demonstrate a facing-the-viewer (FTV) bias with depth-ambiguous point-light walkers. Therefore, we specifically predicted that individuals high in attachment anxiety would demonstrate a stronger FTV bias than individuals low in attachment anxiety. Furthermore, we predicted that this relationship would be moderated by interpersonal threat, such that highly anxious participants in the non-threat condition would show a stronger FTV bias than participants low in attachment anxiety but, in the threat condition, would report a weaker FTV bias. In addition, we hypothesized that individuals high in attachment avoidance would demonstrate a weaker FTV bias than individuals low in attachment avoidance.

Method

Participants

$N = 143$ (85 women) undergraduate students

Manipulation

Participants were either instructed to write about a time when they felt lonely (**threat condition**) or to write about walking around their university campus (**non-threat condition**; Hicks, Schlegel, & King, 2010).

Measures

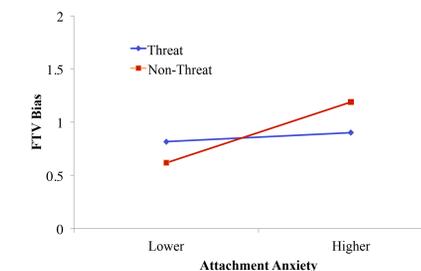
Attachment Style: Experiences in Close Relationships Questionnaire-Revised (Fraley, Waller, & Brennan, 2000). This 36-item scale measures the anxiety (Cronbach $\alpha = .93$) and avoidance (Cronbach $\alpha = .92$) dimensions on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores are indicative of greater attachment anxiety/avoidance.

Point-Light Walkers: Figures were made of 15 white dots, located at each major joint in the body, connected by white lines. They were displayed at a variety of angles rotating on a black background for 0.5 seconds with a 2 second interval between each presentation (at least 200 trials). Participants were asked to indicate if the figure was turning clockwise or counter-clockwise. Thus, we were able to determine if they saw the figure walking away from or toward them without directly asking this question. Higher scores represent a greater FTV bias.



Results

As hypothesized, there was a main effect of attachment anxiety, $\beta = .37$, $t(135) = 2.88$, $p = .005$, such that individuals higher in attachment anxiety demonstrated a stronger FTV bias than individuals lower in attachment anxiety. Also as predicted, this main effect was qualified by a significant interaction between attachment anxiety and condition, $\beta = -.27$, $t(135) = -2.07$, $p = .04$. As displayed below, at lower levels of attachment anxiety, there was no difference in the FTV bias between participants in the threat and the non-threat condition. However, at higher levels of attachment anxiety, participants in the threat condition were trending toward a weaker FTV bias than participants in the non-threat condition, $\beta = -.19$, $t(139) = -1.67$, $p = .098$. However, contrary to our predictions, attachment avoidance did not predict the FTV bias.



Discussion

Extensive research has demonstrated that people's attachment orientation within romantic relationships can influence their perceptions of the social world; however, to our knowledge, the current project is the first to investigate the possibility that attachment dimensions can also influence people's perceptions of the physical world. Not only do people possess varying abilities and motivations to regulate interpersonal proximity and distance, they may also possess different perceptions of spatial layout within the physical environment. Furthermore, these physical perceptions of distance may not only be predicted by attachment style but also by the interaction between attachment and interpersonal threat. Indeed, in this first study we demonstrated that higher levels of attachment anxiety were associated with an increase in the tendency to view ambiguous, moving figures as approaching; however, when primed with thoughts of loneliness, this approach bias diminished. We are currently replicating and extending this novel finding using a diverse set of research paradigms. Moreover, we are exploring the possibility that, contrary to our expectations, attachment avoidance was not associated with perceptions of physical distance in the current study because of a minimum perceptual threshold inherent in the point-light walker task.