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Transference of attachment patterns: How important relationships influence feelings toward novel people

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Abstract

This study was designed to examine how working models of attachment are transferred to novel relationships. Two targets were created that resembled either participants' romantic partner or their parent. A third control target did not share overlapping features with participants' significant others. Both global and specific working models of attachment influenced how participants perceived new people. The target manipulation also had a main effect on feelings toward the targets: Priming the representation of one's partner evoked fears of rejection (attachment-related anxiety) and reduced defensiveness (attachment-related avoidance). Furthermore, relative to the control target, participants had a more positive overall attitude toward targets that resembled a partner but did not feel more positively toward targets that resembled a parent.

Over the course of their lives, people develop relationships with a variety of significant others. Although these relational partners can be quite different from one another in their personalities and social roles, people nonetheless tend to experience these relationships in similar ways (e.g., Robins, Caspi, & Moffitt, 2002). How is it that a person can have parallel experiences across such seemingly distinct kinds of relationships? According to adult attachment theory (Bowlby, 1973; Collins & Read, 1994), people exhibit both coherence and continuity in their interactions because *working models*, or mental representations of relationships, influence people's ongoing social experiences. These working models are thought to have their origins in past experiences with significant others. During new social encounters, the working models that people hold are used to guide the way in which novel relationship partners are perceived. Transference processes influence emotional, motivational, and behavioral reactions to strangers (Andersen & Glassman, 1996). In other words, components of working models are transferred over time and across relationships.

Although the influence of working models on relational coherence is highlighted in attachment theory, little research has directly investigated the processes through which working models are transferred from one relational context to the next. For instance, it is unknown whether some kinds of working models are more dominant than others and are thus more readily activated as new relationships develop. The empirical investigation of these processes is crucial for several reasons. First, the notion that attachment patterns are relatively stable across time and context is one of the foundational assumptions in attachment theory (Collins & Read, 1990; Fraley, 2002; Scharfe & Bartholomew, 1994). Nonetheless, a paucity of research has examined the basic social-cognitive mechanisms that are assumed to give rise to stability. Second, the

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attachment literature has emphasized how people can hold different kinds of working models (e.g., parental, romantic), but it is unclear if and how representations in one domain might be applied to another and whether they are applied in more global (i.e., decontextualized) ways or in more specific ways. Addressing these matters should enable us to test some core assumptions in adult attachment theory and clarify existing conceptual ambiguities about how representations of significant others are utilized in the development of new relationships.

The objective of this research is to build on previous work on the transference of social representations (e.g., Andersen & Baum, 1994; Brumbaugh & Fraley, 2006) by examining how attachment-related feelings, defenses, and expectations experienced with specific people (i.e., parents and partners) are applied to novel targets—those designed ideographically to resemble one's parent or romantic partner. A key objective of this study was to determine how people use their existing models of attachment to relate to new individuals and how specific models of important relationships may vary in their operation and application. To accomplish this, we asked participants in dating relationships to describe the personal attributes of their romantic partner and the parent to whom they felt the closest. We also assessed participants' degree of security in each relationship, as well as their general sense of attachment security. One to 2 weeks later, the same participants took part in an ostensibly unrelated study. In this session, each participant learned about three targets by reading personal ads from a simulated online friendship matching service. We idiographically constructed one of the targets to resemble the participant's partner and another target to resemble the participant's parent. The third target was a control that was not designed to resemble anyone of personal significance to the participant. Participants then reported their attachment-related thoughts and feelings with respect to each of the three targets.

Previous work on the transference of attachment patterns has shown that, when people are presented with novel targets that partially resemble a past romantic partner, they tend to use their attachment representations of that specific past partner to a greater degree when interpreting the new targets compared to control conditions (Brumbaugh & Fraley, 2006). We designed the current study to extend this initial research by focusing not only on representations of romantic partners but also on parents as well. Bowlby (1977) emphasized the role of parents in social and emotional development, and early childhood experiences are theorized to have an important impact on future relational experiences, extending into adolescence and adulthood (e.g., Belsky, Steinberg, & Draper, 1991; Waters, Weinfield, & Hamilton, 2000). Because the family of origin is assumed to play some role in how children carry on their later relationships, it is useful to examine the impact of parental attachment representations on new attachment experiences within the transference paradigm. Although early parental influence is enduring, as empirical research has pointed out, it is somewhat modest and is mediated through ongoing relational experiences (Fraley & Brumbaugh, 2004; Roisman, Collins, Sroufe, & Egeland, 2005). Such findings raise questions about the relative contribution of parental and romantic representations in shaping new relationship experiences. In the current study, we chose to focus on working models of current, as opposed to past romantic partners. Brumbaugh and Fraley (2006) requested that people report on their most significant romantic relationship to date, but a current partner representation may be more active and thus more readily applied to new individuals. Ultimately, we were most interested in examining how different models of relationships operate in new relationships and how the outcomes associated with these models may vary.

Multiple models of attachment

Bowlby (1973) originally thought that different models of attachment can have independent effects on one's attachment behavior, yet researchers have done little to assess the differences in behavioral outcomes that stem from relationship-specific models. Various attachment researchers have demonstrated the existence of multiple working models at

different levels of specificity (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; Collins & Read, 1994). Global working models are conceptualized as elaborated, chronically accessible models that represent an average of experiences across past relationships. As people develop and become familiar with a variety of significant others, they construct more differentiated and specific working models, allowing for more flexibility in the accessibility of different attachment representations depending on the interpersonal situation (Baldwin et al., 1996).

Although research on the development and structure of attachment representations has made important contributions to our understanding of working model organization, most research that acknowledges the variability of working models has focused on associations between general and more specific models of attachment. Thus, the independent effects of specific working models in how perceptions and relational dynamics are governed are still not well articulated, though preliminary work on specific models has highlighted their predictive value. For instance, research has demonstrated that specific models better predict psychological well-being and relationship outcomes relative to more general models (Cozzarelli, Hoekstra, & Bylsma, 2000; Klohnen, Weller, Luo, & Choe, 2005). Given the evidence that multiple models exist, it is important to learn more about the ways in which they operate during such experiences as new relationship formation, among others.

The current experiment allowed us to examine some of the ways in which working models of attachment may promote continuity across diverse kinds of relationships. In accord with Collins and Read's (1994) framework, working model application can be predicted by the model's strength, which is gained from experience with the significant other on whom it is based. Application also depends on the situation (e.g., whether the model is relevant) and the specificity of the model, with more specific models being preferred. In our study, the experimental targets are modeled on individuals with whom the participants have much experience, the targets share features with significant others, and the targets are based on specific significant others. Based on Collins' theory (Collins & Read, 1994) and past work underscoring the importance of specific attachment representations (e.g., Cozzarelli et al., 2000; Klohnen et al., 2005), we predict that relationship-specific models should be preferred over global models of attachment when the respective experimental targets are being evaluated.

Contemporary social-cognitive theories regarding accessibility are also relevant to the predictions of our study. Constructs that come to mind easily and have a high activation potential are described as being chronically accessible (Higgins, King, & Mavin, 1982). Chronic accessibility, along with transient accessibility provided from environmental cues such as the perceived similarity between past and new interpersonal situations, plays a role in the activation of significant other representations (Andersen & Chen, 2002). According to an accessibility perspective, the amount of experience one has, combined with the amount of time one spends with a significant other should influence the transference of working models. For instance, in our sample of mainly young adults, romantic partners may be seen frequently, resulting in higher accessibility of those representations. At the same time, as young adults are severing childhood ties with their parents after leaving the family home, parental working models should be decreasing somewhat in accessibility. Thus, due to this simultaneous increase in the importance of romantic partners and the distancing between parents and young adults, we predict that partner-specific effects will be more pronounced than parent-specific effects.

According to Anderson's framework, models of particular significant others can be primed by reminders of those relationships and will thus be applied to a new person if that new person shares a sufficient resemblance to the significant other (e.g., Andersen & Cole, 1990). In accord with Anderson's work, one hypothesis that we examined in this research is that working models of specific individuals shape people's responses to different kinds of novel social contexts in a contingent way. For instance, it is possible that when similarity exists between a new relationship target and

an existing representation of a specific individual (e.g., a partner or parent), the working model corresponding to that particular individual is activated, leading people to transfer relational dynamics from an existing relationship to a new one. In the event that no similarity between the representations and targets exist, we predict that relationship-specific models will remain inactive to a large extent and global models of attachment may take precedence.

We were also interested in whether representations in one class of relationships (e.g., parents) may have crossover effects to other domains (e.g., romantic partners) and in how various working models may be used differently in person perception. The salience of one's working models, as well as attachment-related thoughts and feelings, can often vary toward different relational partners (Andersen, Glassman, Chen, & Cole, 1995; Baldwin et al., 1996; Pierce & Lydon, 2001). Because different relationships serve different functions, the nature of various working models, as well as the outcomes and behaviors associated with them, likely differ as well. Accordingly, attachment orientations toward parental and romantic relationships show only modest correlations with one another (Bartholomew & Shaver, 1998; Klohnen et al., 2005; Simpson, Rholes, Orina, & Grich, 2002). Parental and romantic representations have also been demonstrated to have unique predictive power in terms of such factors as psychological adjustment (Crowell, Fraley, & Shaver, 1999). Because relationship-specific models vary considerably, the way in which different working models contribute to experiences in relationships is an intriguing question. We had no specific predictions but were curious if people might use parental representations to some extent to interpret a target even when that target was designed to resemble a person's romantic partner or vice versa. For instance, due to processes such as chronic accessibility, a relationship-specific representation may have the potential to be applied to new people even when they do not resemble the source of the representation, or even necessarily the type of relationship. If this type of "lateral transference" exists, then it may be the case that some specific working models take precedence over others in relationship development. For example, it may be the case that representations of romantic partners are more influential than representations of parents in shaping the interpretation of all new people. This would imply that parental representations established early in life may not be as influential in one's social dynamics in adulthood as they were in childhood, as suggested by Ainsworth (1990). Another possibility is that representations of parents are particularly powerful in shaping the interpretation of new people in any social context given the well-established and entrenched nature of such representations.

Based on past research (Brumbaugh & Fraley, 2006) we also predicted that people would feel more anxious and less avoidant toward the experimental targets regardless of feelings toward the significant others on which those targets were based. In the Brumbaugh and Fraley (2006) study on transference from past romantic partners, increased anxiety toward experimental targets may have stemmed from reminders of prior partners evoking fears of abandonment. At the same time, participants may also have felt more familiar with the experimental target and thus more comfortable opening up to and depending on (i.e., thoughts and feelings characteristic of low avoidance) the experimental partner target. Following this, we predicted that exposure to targets based on parents would show a similar effect.

To summarize, this study aimed to test four hypotheses explicitly. First, we expected specificity in working model application such that parental models would be applied primarily when targets resembled one's parent, and romantic representations would be applied primarily when the targets resembled a romantic partner. Second, we hypothesized that the effects of partner representations would be stronger than those of parents. Third, we hypothesized that relationship-specific working models would take precedence over global models when participants were evaluating the corresponding experimental targets. Fourth, we predicted that exposure to targets resembling romantic partners would increase anxiety and decrease avoidant reactions to the experimental targets regardless of attachment orientation with those specific people in real life.

Finally, we wanted to explore any crossover effects of relationship-specific models to other relational domains (e.g., the influence of partner representations of perceptions of parent-like people) and wanted to replicate the basic Andersen false memory effect in which people misremember seeing features of the experimental targets that are actually features of their significant others and not of the targets (e.g., Andersen & Cole, 1990).

Method

Participants

One hundred seventeen college undergraduates participated in a two-part study in exchange for introductory psychology course credit at a large public Midwestern university in the United States. We ran Session 1 in groups of up to seven people and Session 2 in groups of up to three. The mean age of the sample was 18.92 years ($SD = 1.14$). Eighty percent of the sample identified as White, 8% as Hispanic, 5% as Asian, 4% as Black, and 3% as another ethnicity. The study required that participants were involved in a romantic relationship and had at least one living parent at the time of the study. Because no appropriate sampling frame was available to us, we used a convenience sample of undergraduate students enrolled in introductory psychology courses in lieu of a probability sample. We felt it was suitable to use a college-aged sample because our participation requirements dictated that participants had romantic experience, and indeed, we found that a substantial proportion of participants were involved in relationships lasting more than 1 year in length. The median romantic relationship length for participants was 14.43 months ($SD = 11.69$), with a range of 1–53 months. Each participant participated in two ostensibly independent experimental sessions that were spaced from 10 to 16 days apart. We performed a postexperimental manipulation check at the close of Session 2 to determine if participants were aware of the sessions' connection to one another. We excluded participants who had suspicions of the sessions' relatedness from the analyses ($n = 20$), leaving 97 participants (28 men and 69 women) for the analyses reported below.[1]

Session 1: Reporting on a parent and romantic partner

Participants began Session 1 by completing a global measure of attachment that assessed their general feelings in emotionally close relationships. The attachment questionnaires administered throughout the study were based on items from the Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998). The global measure of attachment was the unaltered ECR. An example item from the ECR is, "I don't feel comfortable opening up to romantic partners." Participants rated each questionnaire item on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. The reliability of all ECR measures used throughout the study was adequate, as indicated by Cronbach's alphas, which ranged from .85 to .89. Items on the ECR are designed to tap the two dimensions underlying adult attachment patterns: attachment-related anxiety (i.e., the degree to which one is sensitive to signs of rejection and attachment-related concerns) and attachment-related avoidance (i.e., the degree to which one uses proximity-seeking strategies to regulate attachment-related feelings). Individuals high in anxiety often worry about abandonment and feel neglected in their

1. Although a relatively high number of our sample reported suspicions about the targets, findings and characteristics for those who were and were not suspicious did not differ substantially. We found that participants who had suspicions felt less avoidance toward the partner target ($M = 2.50$, $SD = .76$) than those who were not suspicious, ($M = 3.25$, $SD = 1.17$), $t(115) = -2.74$, $p < .05$, $d = -.76$. Suspicious participants also had a more positive attitude toward the partner target ($M = 5.88$, $SD = .68$) compared to those who did not have suspicions, ($M = 5.14$, $SD = 1.13$), $t(115) = 2.81$, $p < .05$, $d = .79$. These results replicate the trend or our basic findings but are more exaggerated in the suspicious group. Suspicious participants did not show any evidence of false memory effects for any of the targets probably because of their increased awareness of our manipulation. No other disparities were found. Despite the lack of major differences in the psychological features of and results between suspicious and unsuspicious participants, we felt it best not to include the suspicious participants since their awareness undermines our intention to study processes for which people are unaware.

relationships, whereas those low in anxiety do not usually suffer from such concerns. Highly avoidant people tend to withdraw from emotional closeness, while people low in avoidance are not hesitant to rely on others for support and comfort (Fraley & Shaver, 2000). Individual differences in these two dimensions are thought to reflect variation in the working models that people hold. For instance, people who are low on both dimensions are assumed to have secure working models. In this article, we use the term *attachment security* to refer to both the low ends of the anxiety and avoidance dimensions, and individual differences in attachment organization more generally.

Participants next reported on the parent with whom they felt closest and on their current romantic partner. We counterbalanced the order in which participants reported on their parent and romantic partner. Seventy-five percent of participants nominated their mother (as opposed to their father) for the parent to whom they felt most close. For each significant other, participants completed a relationship-specific ECR designed to assess anxiety and avoidance with those particular significant others. For instance, the partner-specific ECR was adapted from the global ECR to include such items as "I need a lot of reassurance that I am loved" to "I need a lot of reassurance that I am loved *by my partner*." Participants then wrote 14 sentences to describe both their parent and partner. We instructed participants to try and think of descriptions that were unique to the particular significant other and to avoid generic statements such as, "he or she is a good person." We told them that the descriptions could be positive or negative and could describe any aspect of the person, as long as it was something that set him or her apart from others. After writing the 14 sentences, they went back and ranked the sentences from 1 to 14 in terms of their relevance for describing each person.

Participants also reported on features of their current romantic relationship, such as the length and the importance of the relationship. Lastly, participants categorized the descriptiveness of 30 trait adjectives by choosing 10 as good descriptors, 10 as poor descriptors, and 10 as irrelevant (neither descriptive nor nondescriptive) of each their parent and romantic partner. We partially debriefed participants about the nature of the experiment at the close of Session 1.

Session 2: Learning about novel targets

Six to 10 days after Session 1, participants returned to the second session of the experiment, which was held in a different room and conducted by a different experimenter in order to minimize the apparent connection between the two sessions. We informed participants that the university was considering the implementation of a friend-meeting service for students and employees who were new to the area and that we were testing an early version of the service. We asked participants to read three online "friend" ads for people living in the Champaign-Urbana area. Although we led participants to believe that the ads were written by real people in the community, two of the ads were in fact constructed by the experimenters to resemble either the participant's parent or romantic partner. We achieved this resemblance by including the moderately descriptive information provided by the participants in Session 1—the sentences ranked 6 to 10—as elements in the target ad. We chose these descriptor rank orders in accord with the Andersen transference paradigm (e.g., Andersen & Cole, 1990). The purpose of presenting the moderately descriptive sentences is to reduce the risk of participants consciously noticing the resemblance of the experimental targets to people from their lives. We also paraphrased the sentences so that participants were less likely to perceive consciously the similarity between the descriptions they provided in Session 1 and the information they were reading in Session 2. These two ads also included four of the trait adjectives marked as irrelevant of the significant other, and other peripheral information such as location (Champaign or Urbana, IL) and occupation (student or employee). The third ad was a control ad based on information from another participant's partner or parent. We described parent-based ads as having employee status and partner-based ads as being of student status. The gender of the individuals portrayed in the ads corresponded to the gender of the

significant others described by the respective participant in Session 1 of the experiment. We counterbalanced the presentation of the three ads across participants.

Participants viewed each ad for 1 min, after which we told them to imagine what it might be like to be in a friendship with the person in the ad. Then, they completed an ECR pertaining to how they believed they would feel and relate in a friendship with each target. Participants also answered questions about their general opinions and feelings toward each target. For example, participants rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale how much they would enjoy spending time with the target person and how much they would like to have a friendship with the person.

In accord with the Andersen paradigm (e.g., Andersen & Baum, 1994), we also gave surprise recognition memory tests for the details of each target after participants learned about all three targets. This test included 15 statements, 4 of which were actually presented in each respective ad, 8 of which were not presented but were provided by participants as descriptors in Session 1 (the critical false-positive items used to assess the basic transference effect), and 3 of which were statements that included the irrelevant filler information not presented in the ads. Participants rated each statement on a 1 (*not at all certain*) to 4 (*very certain*) scale how confident they were that they had seen the statements in the respective ads. They completed the memory tests in the order in which the ads were originally presented to them. Finally, we gave a manipulation check of suspicion that assessed whether participants noticed anything unusual about the study, and in particular anything unusual about the people described, followed by a full debriefing about the nature of the study.

Results

Relationship-specific transference of attachment representations

Before reviewing our findings, it is useful to introduce some terminology. The term *partner target* refers to the target that we idiographically constructed to resemble the participant's romantic partner. Similarly, we use the term *parent target* to refer to the target designed to resemble the participant's parent. The term *control target* is used to refer to the target that resembled another participant's parent or partner and not that of the participant in question.

If selectivity exists in how people apply representations of their significant others, then a stronger association should exist between attachment-related anxiety and avoidance experienced with the significant others and anxiety and avoidance experienced with the experimental targets relative to that experienced with the control target. In other words, parental representations should be applied to the strongest degree in the parental target condition and representations of partners should be applied primarily in the partner target condition. Table 1 shows the correlations between all the ECR measures.

The application of partner representations. Overall, correlations between partner anxiety and anxiety experienced with the partner target, parent target, and control target were positive. Although the correlations were all positive, these correlations were not significant ($p > .05$) with the control target (see Table 1). This suggests that people apply their working models of significant others to some extent across different relational targets. Nonetheless, we also found evidence of specificity in the way that participants applied these representations. People who were highly anxious with their romantic partners felt more anxiety with the partner target ($r = .61$) than with the control target ($r = .13$), $z(94) = 3.70$, $p < .001$.

People who were highly avoidant with their partners were more likely to feel avoidant with the partner target ($r = .28$) than they were with the parent target ($r = .14$) and the control target ($r = .09$). The association between avoidance with one's partner and avoidance with the partner target was slightly stronger in the partner condition than in the control condition, $z(94) = 2.59$, $p < .10$.

The application of parental representations. The correlations between anxiety with one's parent and anxiety experienced with the two experimental targets were positive (see Table 1), suggesting that participants applied

Table 1. *Descriptive statistics and correlations pertaining to global and specific attachment representations*

Attachment dimension	1	2	3	4	5	6	7	8	9	10	11	12
1. Global anxiety	—	—	—	—	—	—	—	—	—	—	—	—
2. Relationship-specific partner anxiety	.78	—	—	—	—	—	—	—	—	—	—	—
3. Relationship-specific parent anxiety	.48	.36	—	—	—	—	—	—	—	—	—	—
4. Experimental partner target anxiety	.74	.61	.27	—	—	—	—	—	—	—	—	—
5. Experimental parent target anxiety	.42	.27	.24	.39	—	—	—	—	—	—	—	—
6. Control target anxiety	.34	.13	.29	.39	.31	—	—	—	—	—	—	—
7. Global avoidance	.23	.37	.44	.04	.11	.01	—	—	—	—	—	—
8. Relationship-specific partner avoidance	.27	.34	.46	.12	.05	.26	.63	—	—	—	—	—
9. Relationship-specific parent avoidance	.32	.27	.34	.24	.27	.17	.37	.29	—	—	—	—
10. Experimental partner target avoidance	.21	.20	.12	.24	.03	−.12	.25	.28	.16	—	—	—
11. Experimental parent target avoidance	.17	.17	.08	.18	.16	.01	.17	.14	.17	.15	—	—
12. Control target avoidance	−.05	−.10	.03	−.12	−.14	.04	.13	.09	.07	.03	−.04	—
M	3.48	3.18	2.43	3.42	2.91	3.06	2.89	1.96	2.64	3.25	3.53	3.64
SD	1.06	1.06	.91	1.02	.97	.91	.89	.79	1.19	1.17	1.26	1.15

Note. All correlations ≥ .21 are significant at $p < .05$. $N = 97$.

parental representations in a somewhat general way to novel individuals. These correlations were not significantly different from one another, implying that parental anxiety was not transferred in a selective manner but rather in a broad, trait-like manner.

We also examined how avoidance with one's parent overlapped with avoidant reactions to the targets. Participants' avoidance with their parent was positively associated with avoidance experienced in the three conditions (parental target, $r = .17$; partner target, $r = .16$; control target, $r = .07$), though not significantly in any condition. Although each of the correlations was positive, parental avoidance was not significantly more correlated with avoidance experienced with the parental target relative to the control target, $z(94) = .68$, $p > .05$.

In summary, our results suggest people apply their existing attachment representations in a fairly general way when trying to make sense of novel relational targets. For example, people who were highly anxious with their parents or their partners were more likely to report attachment-related anxiety when reading about others. In addition, our results indicate that, although representations of romantic partners can be selectively activated and applied, this was not the case with parental representations. In other words, parental representations were *only* applied in a general way to new interpersonal situations. Thus, our hypothesis that participants would apply parental representations to targets primarily when those targets were modeled after parents and that they would apply representations of partners primarily to targets resembling partners was only partially supported.

The effects of parental versus partner representations

To examine whether effects of partner representations were any stronger than the effects stemming from parental representations, we compared the correlations between attachment with the significant other and attachment felt toward the corresponding experimental target (e.g., the correlation between partner anxiety and partner target anxiety vs. the correlation between parental anxiety and parental target anxiety). We found that partner anxiety correlated more highly with anxiety toward the partner target ($r = .61$) than parental anxiety correlated with anxiety toward the parental target ($r = .24$), $z(94) = 4.02$, $p < .001$. The correlation between partner avoidance and avoidance toward the partner target was no different from the correlation between parental avoidance and avoidance felt toward the parental target. Thus, the effects of partner representations were stronger than those of parental representations, but only for attachment anxiety. This pattern of results lends partial support to our hypothesis that the effects stemming from representations of partners would exceed those of parental representations.

Transference of global attachment representations

Next, we examined how people's global attachment representations (i.e., how people *generally* feel in their close relationships, as assessed via the standard ECR) influenced their reactions to the novel targets. We found that individuals who tended to be highly anxious in their close relationships experienced more attachment-related anxiety toward the various targets (see Table 1). People who were highly anxious globally felt more anxiety with the partner target ($r = .74$) than with the control target ($r = .34$), $z(94) = 5.03$, $p < .001$. People who were highly anxious in general did not necessarily feel more anxiety with the parent target ($r = .42$) than with the control target ($r = .34$), $z(94) = .73$, $p > .05$.

In regard to global avoidance, people who generally experienced higher degrees of avoidance in their relationships felt more avoidant toward the parental target ($r = .17$), the partner target ($r = .25$), and the control target ($r = .13$). The correlation between global avoidance and avoidance toward the targets was only significant in the partner target condition. None of these correlations were significantly different from one another.

The unique contributions of global and relationship-specific working models

In order to gain a broader perspective on how global and relationship-specific attachment

patterns independently contribute to the transference process, we performed a series of hierarchical multiple regressions. Regression models for studying main effects and interactions in a mixed design (i.e., situations in which one variable is manipulated within subjects and the other variable varies across subjects) are not well specified for situations in which the between-subjects variable is continuous rather than categorical. In these kinds of designs, Judd, Kenny, and McClelland (2001) recommend testing interactions by subtracting the two dependent variables and regressing those differences on the continuous between-subjects variables and any interactions of interest. The dependent variables in our regressions were difference scores in attachment-related feelings between the experimental and control targets (e.g., experimental parental target avoidance minus control target avoidance, and experimental partner target avoidance minus control target avoidance). In our first set of analyses, we controlled for global anxiety in order to more closely examine the relationship between relationship-specific anxiety and anxiety experienced with the partner target. We entered global anxiety in the first step of the regression, followed by partner-specific anxiety and parent-specific anxiety in the second step to predict the difference in anxiety experienced between the partner and control targets. The final step of the regression model showed that partner-specific anxiety ($\beta = .37$, $p < .05$) was the only predictor that positively contributed to feelings of anxiety toward the partner target, above and beyond variance common among the other attachment measures. Parent-specific anxiety ($\beta = -.23$, $p < .05$) did not have unique predictive value in the anticipated direction in this case. The estimated coefficients for the full model are shown in Table 2. None of the other hierarchical regressions we conducted (i.e., those predicting anxiety toward the parent target, and avoidance toward the partner and parent targets) showed that any of the global or relationship-specific predictors had independent contributions to how the targets were received. Thus, when we entered the predictors simultaneously, none of them uniquely contributed to transference of attachment. This finding suggests that in these three cases, the shared variance between the global and relationship-specific measures—the variance that is being statistically removed in a simultaneous regression analysis—was mainly responsible for the transference effect. Unfortunately, it was difficult to truly disentangle the relative effects of each, as the global and relationship-specific attachment measures are indeed associated with one another. It is possible that multicollinearity may have influenced our outcome, primarily from the high association between relationship-specific and global anxiety. Nonetheless, signs suggested that multicollinearity did not affect our results. For instance, regardless of whether we included or excluded global anxiety as a predictor, we found that our effects held and the regression coefficients did not change considerably. In other words, partner anxiety still predicted the difference in anxiety between the partner and control target and parental anxiety was still negatively related to this difference. Another sign that multicollinearity was not a large problem was the reasonable standard errors of the regression coefficients (which ranged from .10 to .14). Furthermore, the association between relationship-specific anxiety and global anxiety was under .80, which is generally agreed to be the threshold over which multicollinearity is considered a problem (Grimm & Yarnold, 1995). In sum, this pattern

Table 2. *Summary of the hierarchical regression analysis testing the unique contributions of global and relationship-specific working models on attachment-related anxiety*

	Step 1	Step 2
Variable	β	β
Global anxiety	.41*	.24
Anxiety with one's partner	—	.37*
Anxiety with one's parent	—	−.23*
R^2	.17***	.26***
ΔR^2		.10***
F		11.08***

Note. The dependent variable is the difference between anxiety experienced in the partner versus control target condition. Standardized beta coefficients are reported.
*$p < .05$. ***$p < .001$.

of results lent some support to our hypothesis that relationship-specific models would be more influential than global models, but we found evidence of this only for the effects of partner-specific attachment anxiety.

Main effects of target manipulation on attachment-related feelings

We also examined differences in how people felt toward the targets, regardless of their attachment orientations with their parent and partner. First, we assessed anxiety felt toward the targets in an analysis of variance with target condition (partner, parent, or control) as a within-subjects factor. We found a main effect of target type, $F(2, 192) = 11.29$, $p < .001$. The results of the post hoc paired samples t tests are summarized in Table 3. In short, the analyses revealed that participants felt more anxious toward the partner target than toward the control target. On the other hand, individuals felt no more or less anxious toward the parent target than they did toward the control target. Participants also felt more anxiety toward partner targets, compared to the parent targets.

Next, we examined participants' feelings of avoidance toward the targets, independent of their avoidance in their actual parental and partner relationships. We again found a main effect of target, $F(2, 192) = 2.99$, $p < .10$. Follow-up paired samples t tests showed that people felt less avoidant when the experimental target resembled their partner than when the target was a control. We found no evidence of individuals feeling different degrees of avoidance between the parental and control targets. Participants also felt slightly less avoidant with partner targets than with parental targets. Taken together, these findings suggest that people experienced a bit more anxiety with potential friends who resembled their romantic partners but were more comfortable opening up to them and depending on them (i.e., manifestations of low avoidance).

We also examined how people felt toward the targets in terms of such factors as their overall impression of the targets, how much they thought they would enjoy spending time with the targets, and the hypothetical likelihood of forming a relationship with the targets. The analysis of variance revealed that attitudes toward the targets varied, $F(2, 192) = 4.96$, $p < .001$. A follow-up paired samples t test showed that overall feelings were more positive for the partner target than for the control target. General positivity toward the parental target and the control target did not differ. We also found that individuals had a more positive impression of the target who resembled their partner than the target who resembled their parent. Furthermore, when asked which of the three targets they most wanted to meet in person, participants tended to say that they wanted to meet the partner target (44%) more than the control target (27%) and the parent target (29%), $\chi^2(2) = 5.34$, $p < .10$.

In summary, people felt most anxious and least avoidant with targets that resembled a romantic partner, providing some support for our hypothesis regarding main effects. On the other hand, people were no more anxious

Table 3. *Means and standard deviations of anxiety, avoidance, and feelings toward targets*

	Target type		
Main effect	Partner	Parent	Control
Anxiety	$3.42\ (1.02)_a$*	$2.91\ (.97)_b$*	$3.06\ (.91)_b$*
Avoidance	$3.25\ (1.17)_a$	$3.53\ (1.26)_b$	$3.64\ (1.15)_b$*
Positivity	$5.14\ (1.14)_a$*	$4.70\ (1.26)_b$*	$4.59\ (1.39)_b$*

Note. Standard deviations are in parentheses. Means within rows with different subscripts were statistically different from one another.
*$p < .05$.

or less avoidant with a person who was similar to their parent than they were with a control target. Therefore, it seems that a new social partner's heightened resemblance to a romantic partner evokes attachment-related anxiety and reduces attachment-related avoidance toward him or her. On the other hand, a new social partner's similarity to a parent does not appear to affect how perceivers react to him or her. We also replicated the Brumbaugh and Fraley's (2006) finding that people tend to have a more positive attitude toward individuals who resemble their partner, but we found no increase in positive feelings toward people who were similar to a parent, relative to a control condition.[2]

Classic false memory effect

To determine the extent to which people used significant other representations of their parents and romantic partners when interpreting the features of the novel experimental targets, we examined representation-consistent memory for the experimental parental and partner targets in comparison to the control target. We found that participants made slightly more partner representation-consistent false assumptions about the ad of the target that resembled their partner ($M = 1.66$, $SD = .50$) than they did for the control target ad ($M = 1.56$, $SD = .46$), $t(96) = 1.92$, $p < .10$, $d = .21$. Participants did not misremember more features that were in-line with their parental representations for the target designed to resemble their parent ($M = 1.61$, $SD = .43$) compared to the control target ($M = 1.56$, $SD = .46$), $t(96) = 1.05$, $p > .05$, $d = .11$. Thus, although we were able to replicate the basic transference effect with the experimental target who shared features with participants' partners, we were not able to do so when the experimental target resembled participants' parents.[3]

Crossover effects of relationship-specific representations

As reported previously, we found that working models of specific relationships are used to some extent to interpret any novel person resembling a significant other (e.g., parental anxiety was positively correlated with anxiety toward both the parental and the partner target). We were also interested in whether this pattern occurs more for certain representations than others. Anxiety with one's parent correlated .27 with anxiety toward the partner target, and partner anxiety correlated .27 with anxiety toward the parent target. Parent-specific avoidance correlated .16 with avoidance toward the partner target, and partner avoidance correlated .14 with avoidance toward the parent target. Thus, participants used both specific representations to some extent to interpret each of the experimental targets. People did not use one representation more than the other when interpreting the nonmatching experimental target. One finding of note that indicated some crossover effects of representations was that people who were highly anxious with their romantic partners also showed a marginal tendency to feel more anxious with the parent target ($r = .27$) than with the control target ($r = .13$), $z(94) = 1.19$, $p < .15$.

Transference of attachment as a function of romantic relationship variables

Our results suggest that people who are more anxious in their romantic relationships are more likely to also feel more anxious with

2. Because the majority of our participants were women who reported on their mothers, we were concerned that our findings regarding the main effects of attachment-related feelings and participants' general opinions about the targets may be a function of target sex rather than target condition. In order to determine if the sex of the targets was a confound, we isolated participants who reported on their opposite-sex parent. When this subset was reanalyzed, we found that the same trend of results held, although some of our results were attenuated, probably due to the decreased sample size of the subset ($n = 29$).

3. The absence of significant false memory in the parent condition is not necessarily surprising, given that Anderson's effect sizes of the false-positive memory effect have sometimes been quite small (Andersen, Reznik, & Manzella, 1996; Hinkley & Andersen, 1996). Anderson examined the impact of parental representations (Berenson & Andersen, 2006) in parentally abused versus nonabused samples and found that independent of abuse history, people had more false memory for the targets in the experimental parent target condition ($d = .30$).

a target person who resembles their romantic partner than a target who does not. A variety of relationship factors, such as the length of the current romantic relationship, may moderate the extent to which attachment-related transference takes place. To evaluate this possibility, we conducted regression analyses in which we entered several relationship factors (i.e., relationship length, importance of the relationship, and whether the relationship was a first love) as predictors of the difference in attachment-related feelings experienced between the partner and control targets (i.e., the difference between anxiety toward the partner target and anxiety toward the control target). Of the romantic relationship variables we examined, we found that relationship importance influenced how participants felt toward the targets. Specifically, participants transferred attachment-related anxiety to the partner target primarily when they deemed the relationship as more important. This effect was of marginal significance. The estimated coefficients for the full model are shown in Table 4. In short, people who reported that their romantic relationship was an important one felt more anxious with the partner target than with the control target ($\beta = .58$, $p < .05$). People reporting on less important partners did not exhibit this transference effect ($\beta = .21, p > .05$). No other relationship variables we chose to examine influenced the transference process.

Table 4. *Summary of the regression analysis for the impact of romantic relationship importance on attachment-related anxiety*

Variable	β
Anxiety with one's partner	.47***
Importance of the relationship	.10
Partner Anxiety × Relationship Importance	.17
R	.51***
F	10.8***

Note. The dependent variable is the difference between anxiety experienced in the partner versus control target condition. Because we standardized the predictor variables, the unstandardized weights were the same as the standardized weights, but the intercept term (representing the difference in anxiety experienced in the partner vs. control conditions) was .36.
***$p < .001$.

Discussion

Attachment theory emphasizes the role of working models in how people perceive and respond to their social environment. These working models are thought to exist at different levels of specificity, ranging from general views of close relationships (i.e., global working models) to representations of particular significant others (e.g., working models of partners and parents). In this study we were most interested in examining how working models of specific individuals shape the way in which new people are perceived. We found that, in accordance with our first hypothesis, the overlap in characteristics between past and new relational partners can increase the activation of specific significant other representations under certain circumstances. For example, the correlation between attachment anxiety experienced with a romantic partner and the targets was notably higher when the target resembled that partner than when the target did not. This pattern of results corresponds to the Collins and Read (1994) framework that proposes that specific models are preferred in cases in which they are applicable.

We also found differences in the ways in which partner and parental representations operated in the interpretation of new relational targets, thus providing some support to the hypothesis that partner influence would outweigh that of parents. Interestingly, we found precision in significant other working model application only for partners and not for parents. In addition, only parental anxiety was significantly associated with anxiety experienced with the experimental targets. This activation of attachment-related anxiety, but not avoidance, stemming from parental representations may be a function of features of the parental targets. For instance, experiences with parents in real life may be more likely to result in feelings that the self is inadequate somehow (feelings of anxiety) but not feelings that others are not to be trusted (avoidance). Thus, a parent-like person would be more

likely to arouse feelings of anxiety and self-doubt, rather than distrust in others. Additionally, why is it that parental representations are applied more indiscriminately, yet partner representations are applied in a more specific way? The answer could lie in the developmental origins of parental representations. Bowlby (1969) believed that early experiences with parents serve as the foundation upon which subsequent working models are built. As such, parental representations may be applied in a variety of different circumstances rather than being activated in a selective fashion when certain cues are present. Parental influence may thus have a low-grade but persistent influence on the perception of others.

Unlike working models of parents, partner representations may function more like exemplars, operating primarily under specific conditions (Macrae et al., 1998). Based on our results, working models stemming from rather limited experience with romantic partners appear to be especially activated during encounters with new people who share similarities to that partner. The relative novelty of a romantic partner, compared to a very familiar parent, may cause partner representations to operate more selectively. Unlike parental representations, which have endured for lengthy amounts of time, partner representations may have not existed long enough to be consolidated and broadly applied. Frequent and recent exposure to romantic partners may also result in heightened partner representation accessibility and specificity of application when overlap between partners and others is detected.

In addition to these potential explanations for the differences we observed in the specificity of working model application between parental and partner representations, it is also possible these variations were due to differences in the basic nature of the two types of models. For instance, research on the structure of working models has demonstrated that peer representations (e.g., partner and friend models) are more similar to one another than to parental representations (e.g., models of mother and father; Klohnen et al., 2005). These structural differences are thought to be a product of the different needs that are served by different relationship types (Furman, Simon, Shaffer, & Bouchey, 2002; La Guardia, Ryan, Couchman, & Deci, 2000; Overall, Fletcher, & Friesen, 2003). Therefore, our findings may be a function of dissimilarities in the fundamental operation of partner and parental models.

The impact of global and specific models of attachment

When we attempted to compare the contributions of attachment-related feelings with specific people to global models of attachment, we found that partner-specific anxiety had pronounced predictive power in how participants perceived the partner target after controlling for global anxiety. Thus, partner attachment seems to have some special influence on person perception, above and beyond one's general way of approaching relationships. In the other cases (i.e., global and specific avoidance as well as parent-specific anxiety), none of the predictors entered into the regression made unique contributions to the perception of the targets. We found that these regressions, in which we used difference scores between attachment toward the experimental and control targets, were the best (though not ideal) approach in attempting to disentangle the effects of global and specific attachment models.

General reactions to the targets

Although people used global models of attachment similarly across the novel targets, participants did experience the targets differently in some ways. First, we discovered that the target manipulation had a main effect on attachment-related feelings. We found that people seemed to be more worried about rejection, but, at the same time, they were more willing to get close to individuals who resembled a romantic partner. On the other hand, people experienced no more or less anxiety and avoidance with targets who resembled parents than they did with control targets. Why may individuals worry about being rejected by others who are similar to romantic partners but not experience this type of concern with others? One possible explanation is that people are more susceptible to abandonment by dating partners than by

parents. Normally, most young adults have learned over time that a parent is someone who can be relied on to be there for them, whereas romantic partners may be "here today, gone tomorrow." This is especially true with young adults who tend to have shorter term relationships that are more prone to dissolution than those of older adults (Heaton, Albrecht, & Martin, 1985). In regard to the lower level of avoidance with partner targets compared to parent targets, we speculate that this outcome may be due partially to the college experience that partly requires distancing oneself from the family of origin. As young people disengage from parents, they may instead find comfort in closeness with romantic partners, and thus, those partners may be the attachment figures who young adults trust and turn to for support most often (Fraley & Davis, 1997).

The second difference we found in overall response to the targets dealt with general feelings and interest toward them. People were most drawn to the targets resembling partners, above both the control and parental targets. Given the passionate feelings that often accompany romantic relationships, the greater interest shown toward the partner target is not very surprising. On the other hand, positive feelings toward the parental and control target were no different from one another. This pattern of results suggests that people have a soft spot for new individuals who resemble romantic partners but seem to be unmoved by similarities to parents in new people. The finding that people do not like individuals who are similar to a parent any more than a stranger who is unlike anyone they know is somewhat surprising. Nevertheless, it appears that people's attitudes toward others are unaffected by whether new acquaintances are like or unlike their parents. Another interesting point is that although people are most attracted to new individuals who resemble partners, they are also more anxious and fearful of being rejected by them. Like the general affinity people have for thrill rides, people may also be strangely attracted to individuals who elicit some degree of fear and anxiety in them.

In terms of crossover effects of attachment representations from one domain to another, we found some evidence of this process. Anxiety experienced in both types of relationships did influence anxiety toward the opposite target (e.g., parental anxiety was associated with anxiety with the partner target and vice versa). Participants used both relationship-specific representations to a similar extent, indicating that one type is not stronger than the other in its influence on unmatched relational domains.

The relationship factors we examined (e.g., the length and importance of the relationship) did not have a notable impact on the transference process. The importance of the current romantic relationship was the only variable that had some effect on the transference of working models. Participants who rated their relationship as being very important had a slight tendency to feel more anxious with the partner target compared to the control target. When people believe that their relationship partner could be "the one," the amount of emotional investment associated with that person may be especially anxiety provoking. Perhaps these feelings of anxiety stem from the need to maintain such a crucial relationship and to not lose this special person. This finding also raises the possibility that serious partners hold a special place in the working models that people construct in the context of romantic relationships.

Limitations and caveats

There were some limitations to the design of this study. One of the limitations was that our control condition was not fully yoked. Specifically, we did not match participants so that pairs of participants saw identical targets (e.g., Participant 1 is exposed to his parent and partner target in addition to Participant 2's parent and partner target as control conditions, while Participant 2 is exposed to those same four targets). Instead, we exposed participants to two experimental targets and a third that resembled either someone else's parent *or* partner. Despite this limitation, we did equate the number of partner and parent targets serving as the control condition, so that neither parents nor partners were overrepresented as control targets. Another potential limitation of this study was that global and specific ECR

measures were not counterbalanced (i.e., participants always completed the specific measure after completing the global measure). On the other hand, this presentation order may be better as the reverse order could cause undesirable order effects. If participants were to report their global attachment subsequent to reporting on a specific relationship, they may be more biased to report their general attachment feelings based on the relationship on which they just reported. Carryover effects may be less likely with the general to specific order because feelings about close relationships should affect one's perception of any one particular relationship to a lesser degree.

To ensure that there were not a high number of chance resemblances in the profiles of experimental and control targets, we closely examined a randomly drawn subset of profiles that 32 of the participants viewed in Session 2 (i.e., we scrutinized 96 individual profiles). Of these, the experimental and control profiles of three participants had a similar statement between them. Parental and partner profiles shared a feature in two cases. The outcome of this examination of similarities between targets suggested a low rate of incidental overlap between the different types of profiles and assured us that chance resemblances did not influence our results to a large extent.

An additional limitation was that we could not conclusively disentangle whether people transfer their representations of fathers in general to male targets and representations of mothers to female targets. Thus, gender compatibility of the targets with the attachment figures may have had an impact on our results to some degree. Because we used a convenience sample, the generalizability of our findings is also uncertain. Another limitation was that when we asked a blind assistant to guess whether 39 randomly drawn profiles described either a parent or partner, she was able to guess correctly for 28 of the targets. Although our assistant guessed the majority of the targets correctly when asked to explicitly reflect on the condition, the qualities that were likely indicative of the target condition potentially could be used to describe either type of person. For example, a partner describing oneself as invested in family life, or a parent describing oneself as popular, does not seem highly out of place or context. Thus, we can assume that the types of respective descriptions provided for parents and partners did not affect our results such that the parental or youthful nature of the profiles alone influenced the participants.

A final limitation of this study was that we did not assess how frequently participants saw the significant others that they described. This could be an important factor because the frequency with which one sees his or her parent and romantic partner may influence the accessibility of working models of those relationships. If, for instance, one visits parents on a biannual basis but sees a romantic partner daily, the working model of the romantic partner may be much more accessible than that of the parent due to increased exposure to the partner. Therefore, the impact of the partner representations that we observed in our study could be due to a greater degree of contact with romantic partners and not necessarily to the greater importance of romantic relationships.

Future directions and conclusions

In conclusion, we found that working models at various levels of specificity (i.e., global and relationship-specific models) played a role in how new people were perceived. Depending on the features of the novel target in question, people used these models to lesser or greater degrees. Partner representations, parental representations, and global representations of close relationships all influenced how participants viewed new people to some extent. Overlap between the characteristics of current romantic partners and new people amplified the use of specific working models of partners. On the contrary, similarities between parents and new targets did not heighten the application of parental representations in the same way. Thus, we found that models of specific individuals, though at the same level of the proposed working model hierarchy, operated differently. It is possible that other features of important relationships affect transference processes as well. For instance, it would be useful to examine whether amount of current contact with a given significant other affects accessibility and transference of working

models. Other possibilities for the future include using the Adult Attachment Interview (AAI) to assess attachment patterns toward significant others within the transference paradigm. Because the AAI is designed to tap more unconscious attachment representations compared to questionnaire measures, the AAI may be especially useful in studying unconscious transference processes. Finally, it may be useful to examine how presenting the highly descriptive features (instead of the moderately descriptive features) of significant others to participants in Session 2 may affect transference effects. In sum, transference processes such as those that we found in this study may help explain the intricacies of continuities in attachment patterns over time and across different relationships.

Conclusions

In conclusion, our findings suggest that representations of both parents and partners can have an impact on attachment-related responses in new social encounters. These reactions could have different interpersonal outcomes outside the lab. For example, people may sometimes be led to jump to biased, unfounded conclusions about others that are rooted in people's idiosyncratic developmental histories rather than in experiences with the targets in question. Another potential outcome of this application process is the creation of continuity in relational dynamics as people experience similar feelings across various relationships. Although the transference of social representations may not be beneficial in all cases, the use of established working models may sometimes allow people to make adaptive connections between prior and present circumstances and respond accordingly.

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