

Social-Cognitive Conceptualization of Attachment Working Models: Availability and Accessibility Effects

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Attachment working models were conceptualized from the perspective of current social-cognitive theory. In Studies 1 and 2, most people reported experience with multiple styles of relating; at the same time, the general attachment style they endorsed was related to (a) the percentage of their significant relationships fitting different attachment-style descriptions, (b) the ease with which they could generate exemplar relationships matching these descriptions, and (c) their interpersonal expectations in these relationships. In Study 3, priming different types of attachment experiences affected participants' attraction to potential dating partners who displayed particular attachment orientations. These findings suggest that most people possess relational schemas corresponding to a range of attachment orientations and that the relative availability and accessibility of this knowledge determine their thinking about relationships.

In the years since Hazan and Shaver's (1987) seminal work applying attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969, 1973, 1980) to the study of romantic relationships, research in the area has involved comparing adults of different "attachment styles" in terms of their relationship experiences (e.g., Feeney & Noller, 1990; Levy & Davis, 1988; Simpson, 1990). This research has indicated that securely attached individuals fare better than individuals with avoidant or anxious-ambivalent attachment styles on several relationship variables, including satisfaction, commitment, trust, and the frequency of positive and negative emotions experienced in relationships. Some studies have revealed behavioral tendencies that may underlie these different relationship outcomes, such as the predisposition to be attracted to certain types of people (e.g., Frazier, Byer, Fischer, Wright, & DeBord, 1996).

A number of writers have expressed uneasiness about the conceptualization of attachment style as an individual-differences variable (see, e.g., commentaries on Hazan & Shaver, 1994). Measurement of this variable has been difficult, with measures showing disappointing test-retest reliability and a lack of concurrence between various self-report and interview

approaches (Baldwin & Fehr, 1995). Moreover, it seems that people may report different attachment orientations in different relationships, suggesting that attachment orientations should be considered relationship variables rather than person variables (e.g., Kobak, 1994; Lewis, 1994).

In response to these and other concerns, the focus in the literature seems to be shifting toward an examination of the cognitive processes mediating differences in relationship behavior and outcomes (e.g., Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993; Collins & Read, 1994; Main, Kaplan, & Cassidy, 1985; Shaver, Collins, & Clark, 1996). Attachment theory has always emphasized people's beliefs and expectations about relationships (e.g., Bowlby, 1969). Recent developments in social-cognitive theory and methods have provided the necessary tools for exploring mental models: Returning to the theory's social-cognitive roots and examining relationship cognition in light of current theory might facilitate the resolution of some ongoing controversies. Toward that end, in the current studies we sought to apply some basic principles from the social-cognitive literature, specifically the notions of availability and accessibility, to the issue of attachment orientation.

Working Models

Bowlby (1969, 1973, 1980) held that attachment behavior is guided by mental models or internal working models that individuals develop of themselves and their attachment figures based on their experiences in infancy and childhood. Depending on the nature of these experiences, individuals come to see themselves as worthy or unworthy of love and support and others as dependable or undependable. Bowlby held that these models serve as guides in subsequent interactions with the attachment figures and other individuals.

Recently, researchers in the close relationships field have attempted to assess mental models as they apply to adults' functioning in romantic relationships. For example, some have measured general beliefs and attitudes about relationships and have found securely attached individuals to have more positive be-

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liefs about themselves and others (e.g., Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). These and other researchers also have tried to identify the specific content of working models, beyond the question of valence. Collins and Read (1990), for example, uncovered three dimensions underlying attachment experiences: comfort with closeness, ability to depend on others, and anxiety over being unloved or abandoned.

Bretherton (1985, 1990) argued that the critical content of working models involves interpersonal expectations, rather than abstracted views of self and others. In her formulation, which drew on current theory and research in social cognition, she conceptualized expectations as scripts for typical interaction patterns between self and the attachment figure (e.g., "When I hurt myself, my mommy always comes to comfort and help me"; Bretherton, 1990, p. 247). She also advocated studying the organization of social knowledge, whereby memories of specific interactions are combined to form higher order expectations about specific relationships and their typical interpersonal patterns.

Bretherton's (1990) focus on scripts is closely related to a recent increase in theorizing on interpersonal cognition in the close relationships, psychodynamic, and interpersonal literatures (e.g., Horowitz, 1988; Mitchell, 1988; Planalp, 1985; Saffran, 1990; see Baldwin, 1992, for a review). In a study of relational schemas, or cognitive representations of typical interaction patterns, Baldwin et al. (1993) explored differences between individuals in their interpersonal expectations vis-à-vis a romantic partner. Participants were presented with descriptions of hypothetical situations involving trust, dependency, and closeness (e.g., "You reach out to hug or kiss your partner"), which are domains that have been identified as central to attachment experiences (e.g., Collins & Read, 1990; Feeney & Noller, 1990; Simpson, 1990). They then were asked to rate the likelihood that their partner would respond in various positive or negative ways (e.g., "he/she accepts you" and "he/she rejects you"). The results indicated that individuals reporting different attachment styles held different interpersonal expectations: Participants with avoidant attachment styles expected somewhat more negative outcomes than did participants with secure attachment styles in response to trusting their partner, and participants with anxious-ambivalent attachment styles expected more negative partner reactions than did participants with secure attachment styles in response to trust and overtures for closeness. In a second study, Baldwin et al. used a lexical-decision task to examine spreading activation between elements of relational schemas. Reaction times revealed the automatic associations held by individuals reporting different attachment styles: For example, when participants with avoidant attachment styles were given the context of trusting a romantic partner, they showed particularly quick reactions to the negative-outcome word *hurt*.

As Baldwin et al.'s (1993) study illustrated, the application of current social-cognitive theory to the conceptualization of working models has considerable heuristic potential. Working models should produce the kinds of information-processing effects that by now are standard in the social-cognitive literature. For example, attachment-related cognitive structures should lead people to be attentive to certain forms of interaction, to recall certain forms of interaction particularly well, and

so on (see Baldwin, 1992). Hypotheses such as these have the potential to take research in novel directions, leading to a clearer understanding of situational and temporal variability as well as other thorny theoretical issues (Baldwin & Fehr, 1995). Moreover, methodology from the social-cognitive literature can be imported for addressing questions about such topics as automatic versus controlled processing, recall biases, and schema-triggered affect. In the present studies, we focused on two such issues: the availability and the accessibility of attachment-relevant knowledge.

Availability and Accessibility

The *availability* of social knowledge refers to whether a certain exemplar, construct, or schema is present in memory for potential use in processing information (e.g., Higgins & King, 1981). A person who has an avoidant attachment style, for example, may never have experienced a relationship in which he or she could trust the other person without fear of being hurt. Thus, for this person, a positive mental model would not be available in stored knowledge. Interpersonal cognition is much more complex than this simple example suggests, of course. In some sense, people probably have available to them an enormous range of models, gleaned secondhand from observation or the media. More important is the availability of episodic memories, often thought to be the underpinnings of people's influential knowledge structures. Someone with a view of people as being untrustworthy, for example, probably has a number of specific memories of specific people acting in an untrustworthy fashion. Indeed, in some theoretical views (e.g., Smith & Zarate, 1992), general expectations are seen to emerge entirely from the massed influence of such specific memories, even in the absence of any abstracted generic structure.

Given that most people have had a variety of interpersonal experiences, it seems likely that they have available multiple mental models representing different ways of relating to others. In the infant attachment literature, for example, it is well recognized that infants often show different responses in the strange situation paradigm depending on whether their father or mother is present (e.g., Fox, Kimmerly, & Schafer, 1991; Lamb, 1977; Main & Westen, 1981), reflecting at least two different mental models of relationships. One issue we examined, therefore, was whether people's relationships tend to be characterized by a single, uniform style of relating or whether most people report a range of experiences. We expected that the latter would be true and further postulated that an individual's overall attachment style would reflect the relative preponderance of secure, anxious-ambivalent, and avoidant experiences.

If a person has multiple models available for processing information, there are a number of factors that can determine which model will be used at any given time. One important factor is *accessibility*, or the ease with which a given category is used to code a novel stimulus (e.g., Bruner, 1957; Higgins & King, 1981). There are many determinants of accessibility that could be studied for their relevance to attachment behavior (e.g., context and motivational effects). Importantly, accessibility and availability are closely related: The more articulated a social knowledge structure is, with multiple exemplars that can resonate with novel experiences, the more accessible it will be

for interpreting a new interaction. Thus, as Bowlby (1969, 1973, 1980) suggested, a person's general attachment style presumably arises from a chronically accessible mental model for perceiving relationships (Baldwin et al., 1993; Shaver et al., 1996).

The notion of accessibility implies more than the chronic tendency to process information in a certain way, however. Accessibility also can vary on a moment-to-moment basis, which might explain some of the variability in people's self-reported attachment orientations (Baldwin & Fehr, 1995). People's motivational states or recent experiences, for example, can increase the temporary accessibility of related structures. The source of temporary accessibility that has received the most attention in the social-cognitive literature is recent activation, or priming. Just as people who are primed with the construct of hostility tend to be more sensitive to the hostility-relevant aspects of a target person's behavior (e.g., Herr, 1986; Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1980), we hypothesized that priming people with certain kinds of relationships would influence the way they perceived and responded to subsequent interpersonal information. If so, this would provide additional evidence that the mental models underlying attachment styles function in a manner similar to other kinds of social knowledge structures.

Overview of Present Studies

We conducted three studies. In the first two studies, we explored the availability and the accessibility of mental models in an adult attachment context by asking participants to describe their attachment experiences in a number of important relationships. We hypothesized that participants would show evidence of possessing multiple models of relationships, rather than possessing knowledge corresponding to only one generic attachment style. We further hypothesized that the most dominant, or frequent, relational experience would be reflected in the participants' choice of style on a standard attachment scale. Whereas in Study 1 we asked participants to report on their attachment orientations in their most significant relationships, in Study 2 we reversed the focus and compared individuals in terms of the ease with which they could bring to mind different types of attachment experiences. Finally, in Study 3 we explored the hypothesis that if people have multiple models of attachment experiences, it should be possible to selectively prime one of these models and demonstrate its effects on information processing. Participants visualized one of their secure, avoidant, or anxious-ambivalent relationships and later rated the attractiveness of potential dating partners who displayed particular attachment orientations. In all studies, participants were introductory psychology students at the University of Winnipeg, Winnipeg, Manitoba, Canada, who received course credit for their participation. The median age of the participants in each study was 19 years.

Study 1

The main purpose of the first study was to assess the availability and the accessibility of different kinds of attachment-relevant experiences in the lives and memories of participants with self-described secure, avoidant, and anxious-ambivalent

attachment styles. First, we asked participants to list their 10 most impactful relationships (both romantic and nonromantic) and then to indicate which attachment-style description (from Hazan & Shaver, 1987) best characterized their feelings in each relationship. Next, participants estimated the percentage of their relationships in which they felt secure, anxious-ambivalent, and avoidant. On both of these measures, we predicted that participants' reported general attachment style would correspond to the relative availability and accessibility of different types of attachment experiences. That is, we expected that although most people would report experiences corresponding to all three attachment patterns, their relationships would disproportionately reflect the pattern that they endorsed as their general attachment style.

A second purpose of this study was to extend earlier research on relational expectations underlying different attachment styles (Baldwin et al., 1993) by asking participants what they would anticipate from others in the domains of trust, dependency, and closeness. Rather than assessing only anticipated reactions from a romantic partner as in previous research, we examined patterns of expectancies across participants' 10 most significant relationships. In addition, participants were asked to consider the relationships in which they felt the most secure, avoidant, and anxious-ambivalent and to report the interaction patterns they typically experienced in those relationships.

Method

Participants ($N = 178$; 117 women and 61 men) completed a multi-section questionnaire. The introduction stated that they would be asked about their views on relationships in general, along with their feelings about particular relationships. The following measures were included in the order listed.¹

Attachment-style questionnaire. Participants chose which of Hazan and Shaver's (1987) three attachment-style descriptions (i.e., secure, avoidant, or anxious-ambivalent) best characterized the way they generally felt in their close relationships.

Listing of participants' 10 most impactful relationships. Participants were asked to think of the 10 relationships that had had the greatest impact, positive or negative, on their lives to that point. They listed the names or the initials of each person and indicated the nature of the relationship (e.g., mother, dating partner).

Rating the 10 impactful relationships. For each of the 10 relationships, participants first indicated which of the three attachment-style descriptions best characterized their feelings for that person (descriptions were worded to refer to a single person; e.g., "I find it relatively easy to get close to this person"). Next, for each relationship, participants' expectations in the domains of dependency, closeness, and trust were assessed. Specifically, using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), participants indicated their degree of agreement with the following six statements taken from Baldwin et al.'s (1993) study: (a) "If I were to depend on this person, he/she would support me"; (b) "If I were to depend on this person, he/she would leave me"; (c) "If I were to try to get closer to this person, he/she would accept me"; (d) "If I were to try to get closer to this person, he/she would reject me"; (e) "If I were to trust this person, he/she would

¹ Participants also responded to a number of additional items, primarily regarding their comfort and satisfaction in different types of relationships. These data are not directly relevant to questions of availability and accessibility and therefore are not presented here.

care for me"; and (f) "If I were to trust this person, he/she would hurt me." Finally, participants were asked to rate these six statements and the attachment prototypes with reference to their mother, father, and current partner (if they were in a romantic relationship) if they had not already done so.

Relationships that best exemplified each style. In this section of the questionnaire, rather than being restricted to their most impactful relationships, participants were asked to think about all of their relationship experiences and to select the single relationship that was the best exemplar of each attachment description (i.e., the relationship in which they felt the most secure, the most avoidant, and the most anxious-ambivalent). These three relationships were then rated on the trust, closeness, and dependency items.

Percentage of relationships corresponding to each attachment style. Next, participants were asked to estimate the percentage of their romantic relationships that corresponded to the secure, avoidant, and anxious-ambivalent attachment-style descriptions (with the three figures adding to 100%). They repeated this estimation procedure for their nonromantic relationships and finally for all their relationships, romantic and nonromantic, considered together.

Background information. Finally, participants indicated their gender, age, dating status, length of current relationship (if any), and the gender of any romantic partners reported on the questionnaire.

Results

The frequencies of the three general attachment styles were consistent with those obtained in previous research (e.g., Feeney & Noller, 1990; Hazan & Shaver, 1987): 112 secure (64%), 45 avoidant (26%), and 17 anxious-ambivalent (10%).

Percentage of impactful relationships matching each attachment-style description. First, percentages were calculated for each participant by dividing the number of relationships he or she characterized as secure, avoidant, and anxious-ambivalent by the total number of relationships he or she reported (12 participants reported fewer than the 10 requested relationships). The overall mean percentages for the different types of relationships were 66% secure, 24% avoidant, and 10% anxious-ambivalent; these percentages were very similar to the distribution of general self-reported attachment styles. Importantly, however, this correspondence was not due to a perfect overlap between general style and specific relationship ratings. As predicted, most people reported a range of experiences: 88% of participants listed relationships corresponding to at least two of the three attachment-style descriptions, and nearly half (47%) of the sample generated names for all three attachment-style descriptions. Thus, even when reporting on only 10 (or fewer) relationships, most people had experienced multiple attachment orientations.

Next, we conducted a 3×3 (General Attachment Style \times Relationship Type) analysis of variance (ANOVA), with repeated measures on the relationship type variable. Because of dependencies in the data, that is, each participant's percentages added up to 100%, the raw frequency scores were used in this analysis (these did not necessarily add up to 10 because some participants reported fewer than 10 relationships). A main effect was obtained for relationship type, $F(2, 342) = 140.32, p < .001$. This effect is best interpreted in light of the significant General Attachment Style \times Relationship Type interaction, $F(4, 342) = 5.94, p < .001$. Simple effects tests (LSD; two-tailed) showed that, comparing between groups, each type of

relationship was reported most often by people whose general attachment style matched that pattern (see Table 1). That is, as predicted, participants with secure attachment styles were the most likely to report secure relationships, participants with avoidant attachment styles were the most likely to report avoidant relationships, and participants with anxious-ambivalent attachment styles were the most likely to report anxious-ambivalent relationships.

It is also informative to examine the means within the columns of Table 1. A comparison of these means revealed that participants of all three styles reported having significantly more secure relationships than either avoidant or anxious-ambivalent relationships. (Any column effects mentioned are significant at $p < .05$ or better.) In addition, participants with secure and avoidant attachment styles reported having significantly more relationships in which they were avoidant than anxious-ambivalent, whereas participants with anxious-ambivalent attachment styles did not differ significantly in the reported frequency of these two types of relationships. Thus, in an absolute sense, even though most participants reported having a range of relationship experiences, it was most common for participants of all styles to report relationships in which they felt secure. However, comparisons between groups showed that people of different styles were relatively more likely to report relationships matching their general style.

Percentage of different kinds of relationships corresponding to each attachment-style description. The preponderance of secure experiences in the 10 significant relationships, even for participants with insecure attachment styles, might have been due to some peculiarity of the question asked. For example, unlike much adult attachment research, this study did not focus explicitly on romantic relationships. However, in a subsequent section of the questionnaire, participants were asked to estimate separately the percentage of their romantic and nonromantic relationships in which they felt secure, avoidant, and anxious-ambivalent. Because these estimates were not independent

Table 1
Descriptive Statistics for Participants' 10 Significant Relationships Representing Each Attachment Style

| Relationship type | General attachment style | | |
|--------------------|--------------------------|--------------------------|------------------------------------|
| | Secure ($n = 112$) | Avoidant ($n = 45$) | Anxious-ambivalent ($n = 17$) |
| Secure | | | |
| <i>M</i> | 6.80 _a | 5.44 _b | 5.82 _{a,b} |
| <i>SD</i> | 2.18 | 2.22 | 2.35 |
| % | 70 | 57 | 60 |
| Avoidant | | | |
| <i>M</i> | 2.20 _a | 2.93 _b | 1.77 _a |
| <i>SD</i> | 1.71 | 1.16 | 1.29 |
| % | 22 | 30 | 21 |
| Anxious-ambivalent | | | |
| <i>M</i> | 0.79 _a | 1.20 _b | 1.82 _b |
| <i>SD</i> | 1.17 | 1.16 | 1.29 |
| % | 8 | 12 | 19 |

Note. Within rows, means with different subscripts differ significantly ($p < .05$).

(again, the percentages always added up to 100%), the omnibus ANOVA was deemed inappropriate; therefore, *t* tests, comparable to the effects tests in the previous analysis, were used to compare the means.

Looking first at the ratings for nonromantic relationships, the pattern of means was quite similar to the percentages observed in participants' 10 most impactful relationships (Table 1), in that each type of relationship was reported most often by participants with the corresponding style (see Table 2 for significant comparisons). Inspection of the means within the columns of Table 2 revealed that all three general attachment style groups reported significantly higher percentages of secure relationships than either avoidant or anxious-ambivalent relationships. These findings are generally consistent with the pattern for participants' 10 significant relationships.

Turning to romantic relationships, the results were slightly different and somewhat more robust. Once again, between-groups comparisons (see Table 2) showed that each type of relationship was reported significantly more often by individuals with the corresponding style. Within-group comparisons (i.e., within-column means) showed a somewhat novel pattern, however. Participants with secure attachment styles still reported a significantly greater percentage of romantic relationships in which they were secure than relationships in which they were avoidant, which was in turn greater than the percentage in which they were anxious-ambivalent. On this measure, however, participants with avoidant attachment styles did not differ

significantly in their percentages of secure versus avoidant romantic relationships, although both of these percentages were significantly greater than the percentage of anxious-ambivalent relationships. Similarly, participants with anxious-ambivalent attachment styles did not differ in their percentages of secure versus anxious-ambivalent relationships, but both of these percentages were significantly greater than that for avoidant relationships. Thus, when the focus was restricted to romantic relationships, the correspondence between attachment experiences and general self-reported style increased somewhat: Individuals with insecure styles reported roughly as many relationships matching their style as relationships matching the secure description. However, it is important to keep in mind that, on average, participants with insecure styles reported experiencing their predominant pattern in fewer than half of their romantic relationships.

Orientations in specific significant relationships. One might wonder if questions about romantic and nonromantic relationships are still too general; perhaps more consistency would be observed if only specific significant relationships—perhaps those with mother, father, or current romantic partner—were examined separately. We tested this issue by calculating the percentage of participants who did versus did not report the same orientation in different relationships. For example, infant attachment research has shown that children often show different attachment orientations toward each of their parents. In the current study of undergraduates, we observed much the same effect: 34% of the sample reported different orientations toward mother and father (30% for women and 41% for men). There was also a notable lack of overlap when parental relationships were compared with current romantic orientations. Of the 108 participants in an ongoing relationship, their orientation in that relationship was different from their orientation with their mother in 37% of the cases (38% for women and 33% for men) and was different from their orientation with their father in 46% of the cases (44% for women and 50% for men).

More to the point, perhaps, is whether people's general self-reported style corresponded closely with one of the specific relationships. It did not overlap consistently with the parental relationships, as 41% (36% of women and 50% of men) reported an orientation different from their overall style with their mother, and 46% (43% of women and 51% of men) reported a different orientation with their father. There was slightly better overlap with the current romantic relationship, which perhaps should not be surprising given that the orientation prototypes were worded in the context of such relationships. Still, 32% (34% of women and 23% of men) reported that their orientation in their current relationship was different from their general style.

Thus, the variability in attachment orientations was observed even when theoretically highly relevant relationships were examined. We noted no clear pattern to this instability.² It did not appear to be the case, for example, that when people were anxious in one relationship they were avoidant in another. Nor were there clear and consistent gender differences, although given that there were only 30 men in the sample who were in-

Table 2
Descriptive Statistics for Romantic and Nonromantic Relationships Representing Each Attachment Style

| Relationship type | General attachment style | | |
|---------------------------|-----------------------------|------------------------------|--|
| | Secure (<i>n</i> = 108) | Avoidant (<i>n</i> = 44) | Anxious-ambivalent (<i>n</i> = 17) |
| Nonromantic relationships | | | |
| Secure | | | |
| <i>M</i> | 74.78 _a | 66.48 _b | 68.59 _{a,b} |
| <i>SD</i> | 20.64 | 22.02 | 19.16 |
| Avoidant | | | |
| <i>M</i> | 16.94 _a | 21.66 _a | 15.47 _a |
| <i>SD</i> | 15.36 | 16.78 | 12.55 |
| Anxious-ambivalent | | | |
| <i>M</i> | 8.29 _a | 11.86 _{a,b} | 15.94 _b |
| <i>SD</i> | 9.54 | 11.59 | 11.87 |
| Romantic relationships | | | |
| Secure | | | |
| <i>M</i> | 62.12 _a | 39.50 _b | 41.18 _b |
| <i>SD</i> | 25.74 | 27.27 | 18.02 |
| Avoidant | | | |
| <i>M</i> | 24.84 _a | 41.86 _b | 21.12 _a |
| <i>SD</i> | 23.52 | 26.30 | 12.50 |
| Anxious-ambivalent | | | |
| <i>M</i> | 13.15 _a | 18.64 _a | 37.71 _b |
| <i>SD</i> | 13.42 | 20.30 | 20.08 |

Note. Within rows, means with different subscripts differ significantly ($p < .05$).

² The data are available on request from Mark W. Baldwin.

Table 3
Interpersonal Expectations in Relationships Representing Each Attachment Style (N = 147)

| Domain and valence | Relationship type | | |
|--------------------|-------------------|-------------------|--------------------|
| | Secure | Avoidant | Anxious-ambivalent |
| Dependency | | | |
| Positive | 6.64 | 4.44 | 4.43 |
| Negative | 1.33 | 2.96 | 3.34 |
| <i>d</i> | 5.31 _a | 1.48 _b | 1.09 _b |
| Closeness | | | |
| Positive | 6.53 | 4.97 | 4.35 |
| Negative | 1.37 | 2.74 | 3.28 |
| <i>d</i> | 5.16 _a | 2.23 _b | 1.07 _c |
| Trust | | | |
| Positive | 6.59 | 4.70 | 4.65 |
| Negative | 1.46 | 2.87 | 2.87 |
| <i>d</i> | 5.13 _a | 1.83 _b | 1.78 _b |

Note. Within rows, means with different subscripts differ significantly ($p < .05$).

involved in a romantic relationship, percentage estimates for men should not be considered authoritative until the findings are replicated. The only finding that appeared fairly robust was that few people (3% overall, 3% of women, 4% of men) reported an anxious-ambivalent orientation with their mother. Apparently, very few people saw their mother as "reluctant to get as close as I would like."

Interpersonal expectancies related to dependency, closeness, and trust. Previous research (Baldwin et al., 1993) has indicated that people's general attachment style is related to their interpersonal expectancies in close relationships. In the current study, participants' expectancies in the domains of dependency, closeness, and trust were assessed in two contexts: (a) for each of the relationships in which their experiences most closely corresponded to each of the three attachment-style descriptions, in order to examine the relation between expectations and relationship-specific attachment, and (b) across all 10 significant relationships listed, in order to investigate the relation between participants' average relationship expectancies and their general style.

The first question, then, involved the three relationships in which participants' experiences most closely matched the three styles. We conducted a 3 (relationship type) \times 3 (domain: trust vs. dependency vs. closeness) \times 2 (valence: positive vs. negative outcome) ANOVA, with repeated measures on each variable. Significant effects were obtained for valence, Domain \times Valence, relationship type, Relationship Type \times Valence, and Relationship Type \times Domain (all F s $>$ 3.00, p s $<$.05). In essence, these effects showed that participants generally expected positive outcomes in their relationships, and this was particularly the case for secure relationships. More importantly, the anticipated three-way interaction was significant, $F(4, 584) = 10.63$, $p <$.001. Means for this interaction appear in Table 3. To help elucidate this effect, difference scores were calculated in each domain by subtracting the rating of the negative outcome from the rating of the positive outcome. Comparisons of these difference scores within domains revealed that participants expected

significantly more positive dependency, closeness, and trust outcomes in relationships in which they were secure than in relationships in which they felt either avoidant or anxious-ambivalent. In addition, participants expected significantly more negative closeness outcomes in relationships in which they felt anxious-ambivalent rather than avoidant. Thus, participants anticipated quite different outcomes across different relationships.

Next, we looked at differences between individuals, focusing on participants' average expectancies, collapsing across their 10 relationships. An average was calculated for each of the valence-domain outcomes (e.g., one score indicating the average expectancy that if the participant depended on people, those people would be supportive). A 3 (general attachment style) \times 3 (domain: trust vs. dependency vs. closeness) \times 2 (valence: positive vs. negative outcome) ANOVA was then conducted, with repeated measures on the domain and valence variables. Significant effects were obtained for valence, General Attachment Style \times Valence, and Domain \times Valence (all F s $>$ 4.00, p s $<$.05), indicating that participants with secure attachment styles had the most positive expectancies overall. Importantly, these effects were qualified by the anticipated General Attachment Style \times Domain \times Valence interaction, $F(4, 342) = 3.17$, $p <$.05. Means for this interaction appear in Table 4.

Comparisons of the difference scores showed that participants with secure attachment styles expected significantly more positive outcomes than both groups with insecure attachment styles in the dependency domain. In the closeness domain, participants with anxious-ambivalent attachment styles expected particularly negative outcomes, and in the trust domain, participants with avoidant attachment styles expected more negative outcomes than did participants with secure attachment styles. These findings are consistent with previous research (Baldwin et al., 1993).

Finally, a more direct test of our hypothesis involved an examination of interpersonal expectancies as a function of both person-specific and relationship-specific variables, considered

Table 4
Interpersonal Expectations Across 10 Significant Relationships

| Domain and valence | General attachment style | | |
|--------------------|--------------------------|--------------------------|------------------------------------|
| | Secure ($n = 112$) | Avoidant ($n = 45$) | Anxious-ambivalent ($n = 17$) |
| Dependency | | | |
| Positive | 5.64 | 5.34 | 5.14 |
| Negative | 1.99 | 2.28 | 2.29 |
| <i>d</i> | 3.65 _a | 3.06 _b | 2.85 _b |
| Closeness | | | |
| Positive | 5.77 | 5.58 | 5.14 |
| Negative | 1.92 | 2.15 | 2.30 |
| <i>d</i> | 3.85 _a | 3.43 _a | 2.84 _b |
| Trust | | | |
| Positive | 5.78 | 5.53 | 5.43 |
| Negative | 1.95 | 2.27 | 2.03 |
| <i>d</i> | 3.83 _a | 3.26 _b | 3.40 _{a,b} |

Note. Within rows, means with different subscripts differ significantly ($p <$.05).

concurrently. That is, are people's expectancies mostly a function of their general outlook or of the specific relationships they are describing? Average expectancies in the dependency, closeness, and trust domains were computed again, but this time they were calculated separately for those relationships characterized as secure, avoidant, and anxious-ambivalent, thus controlling for the number of relationships of each kind that people reported.³ Only participants reporting at least one relationship of each type were included in this analysis ($n = 78$).

We analyzed these ratings in a 3 (general attachment style) \times 3 (relationship type) \times 3 (domain: trust vs. dependency vs. closeness) \times 2 (valence: positive vs. negative outcome) ANOVA. Positive outcomes ($M = 5.02$) generally were rated more likely than negative outcomes ($M = 2.06$), $F(1, 75) = 232.92$, $p < .001$. As in the previous analysis, this effect varied somewhat as a function of general attachment style and domain, but the interaction between valence, domain, and general attachment style was only marginally significant, $F(4, 150) = 2.08$, $p = .09$ (see Table 5 for difference scores representing positivity on the valence dimension).

Table 5
Positivity of Expectations in the 10 Significant Relationships as a Function of General Attachment Style, Relationship Type, and Domain

| Domain and relationship type | General attachment style | | |
|------------------------------|--------------------------|-----------------------|---------------------------------|
| | Secure ($n = 42$) | Avoidant ($n = 23$) | Anxious-ambivalent ($n = 13$) |
| Dependency | | | |
| Secure | | | |
| <i>M</i> | 4.51 | 4.50 | 4.20 |
| <i>SD</i> | 1.51 | 1.65 | 1.43 |
| Avoidant | | | |
| <i>M</i> | 0.95 | 0.88 | 2.42 |
| <i>SD</i> | 2.68 | 2.85 | 2.27 |
| Anxious-ambivalent | | | |
| <i>M</i> | 1.02 | 1.11 | 2.11 |
| <i>SD</i> | 3.18 | 3.30 | 2.29 |
| Closeness | | | |
| Secure | | | |
| <i>M</i> | 4.75 | 4.75 | 3.73 |
| <i>SD</i> | 1.11 | 1.00 | 2.24 |
| Avoidant | | | |
| <i>M</i> | 1.86 | 1.66 | 2.99 |
| <i>SD</i> | 2.70 | 1.99 | 1.65 |
| Anxious-ambivalent | | | |
| <i>M</i> | 0.87 | 0.72 | 0.93 |
| <i>SD</i> | 2.93 | 3.19 | 1.73 |
| Trust | | | |
| Secure | | | |
| <i>M</i> | 4.71 | 4.70 | 4.56 |
| <i>SD</i> | 1.48 | 1.06 | 1.25 |
| Avoidant | | | |
| <i>M</i> | 1.21 | 1.05 | 2.08 |
| <i>SD</i> | 2.83 | 2.40 | 2.38 |
| Anxious-ambivalent | | | |
| <i>M</i> | 1.04 | 0.81 | 2.99 |
| <i>SD</i> | 3.37 | 3.44 | 1.31 |

Note. Means represent difference scores between ratings of positive and negative outcomes.

However, effects comparing the different types of relationships were quite robust: People expected much more positive outcomes in their secure relationships than in their avoidant or anxious-ambivalent relationships, $F(2, 150) = 40.15$, $p < .001$. Their expectations were domain specific as well, with the least positive expectancies about trying to be close in anxious-ambivalent relationships, $F(4, 300) = 6.37$, $p < .001$, for the Domain \times Relationship Type interaction. There were no significant interactions between the relationship type and general attachment style variables.

In this analysis, it was possible to compare the contribution of relationship variables (i.e., the within-subjects differences between types of relationships) versus person variables (i.e., the between-subjects effects of general attachment style). Examination of effect sizes (Norusis, 1990, p. 115) showed that the positivity of expectancies was strongly related to specific relationship orientation ($\eta^2 = .35$) and orientation differences in different domains ($\eta^2 = .08$) but less to general attachment style ($\eta^2 = .03$) and style differences in different domains ($\eta^2 = .05$). Thus, people's expectations seemed to be more a function of the specific relationship they were describing rather than of their own dispositional style.

Discussion

This first study was concerned with the availability and the accessibility of different kinds of relationship knowledge. As hypothesized, when participants reflected on their 10 most impactful relationships, most reported experience with two or more attachment patterns. This finding strongly supports the idea of multiple models, namely, that most people have available to them a repertoire of ways of relating to others. Indeed, the vast majority of participants (88%) reported that they had experienced more than one attachment pattern among their 10 most significant relationships, and almost half of the sample (47%) reported experience with each of the three attachment patterns. One might surmise that this percentage would be even higher if more than 10 relationships were considered. In fact, when people were asked to report the percentages of "all their relationships" corresponding to the three styles, 91% reported that they had experienced all three styles (i.e., did not assign a value of 0% to any attachment-style description). And, even when considering only the specific relationships with mother, father, and romantic partner, participants often (in the range of 30%–50%) reported different orientations in these highly significant relationships.

There were group differences in the likelihood of reporting the three types of relationships, however, reflecting the link between general self-appraisals of attachment style and specific relationship knowledge. Comparing between groups, people of different attachment styles told of more relationships that matched their own general style. Participants with secure attachment styles reported more secure relationships than did the other groups, participants with avoidant attachment styles reported more avoidant relationships, and participants with anxious-ambivalent attachment styles reported more anxious-ambivalent relationships.

³ We are indebted to a reviewer for suggesting this analysis.

bivalent relationships. This pattern likely reflects a combination of availability and chronic accessibility effects. That is, an individual might approach relationships with an avoidant style, for example, because he or she has had many hurtful relationships where avoidance was learned as a typical mode of relating. Such availability effects usually are assumed to be mediated largely by the phenomenon of accessibility, or how readily the past relationship knowledge comes to mind to influence the perception of novel experiences. In return, a major factor influencing the accessibility, or activation readiness, of social knowledge is the past frequency of that kind of experience or construal (e.g., Higgins & King, 1981; Smith & Zarate, 1992). The results suggest a combination of these factors: People's predominant working models are a function of their past relationship experiences and the likelihood that different memories come to mind.

The predicted group differences must be interpreted in the context of the overall main effect for type of relationship. It is noteworthy that of all the relationships that people listed, the percentages matching the three attachment-style descriptions were roughly equal to the percentages of each attachment style in the general population, as found in this and other studies. In general, then, it seems that people are most likely to feel secure in relationships, less likely to feel avoidant, and even less likely to feel anxious-ambivalent. Thus, although each of the groups with insecure attachment styles reported relatively more relationships that matched their general style, for all groups the greatest percentages of relationships reported were secure. Even when specifically discussing romantic relationships, which might be a prime arena for volatile or broken attachments in this age group, participants with avoidant attachment styles and participants with anxious-ambivalent attachment styles reported essentially as many secure relationships as relationships matching their general self-reported style.

The analyses of specific interpersonal expectations extended previous work by Baldwin et al. (1993). In that study, people of different attachment styles expected different patterns of interaction with their romantic partner in the domains of trust, dependency, and closeness. In the current sample, the specificity of the expectations to each attachment orientation was supported by the analyses of the relationships that participants chose as the best exemplars of the secure, avoidant, and anxious-ambivalent patterns. In general, security in relationships was related to positive expectations in all domains, anxiousness-ambivalence was related to particularly negative expectations in response to overtures for closeness, and avoidance was related to negative expectations in response to trusting another person.

As in Baldwin et al.'s (1993) study, people's expectancies were related to their general attachment style; in the present study, the differences in expectations were found across participants' 10 most significant relationships. This effect was overshadowed, however, by the variability in expectancies across different types of relationships. The best predictor of the positivity of people's expectations was the type of relationship they were describing, which accounted for approximately 35% of the variance. Thus, although there was evidence for individual differences in attachment orientations, the findings argue strongly for the impact of relationship-specific influences as well (e.g., Baldwin & Fehr, 1995; Kobak, 1994; Lewis, 1994; Pierce, Sarason, & Sarason, 1991).

Study 2

In Study 1 we asked people about their 10 most significant relationships and found that their tendency to spontaneously generate certain types of relationships was related to their self-reported attachment orientation. In Study 2 we took a more directive approach and asked participants to generate exemplars of specific relationship patterns, drawing from their entire range of experiences. Theoretically, as people develop a working model of the social world, it should increase their ability to retrieve exemplars of that pattern of experience. In the self-schema realm, for example, Markus (1977) found that people who were schematic in the domain of independence could more easily think of times when they acted independently than could aschematics. Similarly, Tversky and Kahneman (1974) described the "availability heuristic" (more closely related to "accessibility" in the current nomenclature; Higgins & King, 1981), showing that people's assessments of the likelihood of events were related to the ease or "fluency" (Jacoby & Dallas, 1981) with which they could generate examples of those events.

We expected that a similar phenomenon would occur in the attachment domain. In this study, we explored whether there was a relation between self-reported attachment styles and the ease of calling to mind different forms of relatedness. If attachment styles represent a chronic tendency to view one's relational world in a particular way, participants should not have difficulty generating exemplars of the attachment pattern that corresponds to their view. An analogy can be drawn with prototype research, in which it is expected that participants can easily generate prototypical examples of a concept (e.g., Fehr & Russell, 1984).

Participants in this study were asked to generate specific relationships corresponding to each of the three attachment-style descriptions. They then reported the ease with which they were able to produce these exemplars. On the basis of the results of Study 1, we expected that most participants would be able to generate relationships of all three types, perhaps particularly secure relationships, but that people's general style would also correspond to the cognitive accessibility of the different patterns.

Method

Participants ($N = 345$; 192 women and 153 men) completed a questionnaire that included the measures described below.

Demographic information. Participants indicated their age and gender.

General attachment style. As in Study 1, participants selected which of the three attachment styles (Hazan & Shaver, 1987) best described them.

Generating relationships to match the attachment-style descriptions. First, participants were presented with the secure attachment-style description (from Hazan & Shaver, 1987) and were asked to think of a relationship in which they felt that way. They then recorded the name of the person and indicated the nature of their relationship (e.g., friend, dating partner). Next, participants rated the ease with which they had been able to think of a relationship corresponding to that description by using a 7-point scale ranging from -3 (*very difficult*) to 3 (*very easy*).⁴ Then, participants were asked to think of a second relationship

⁴ Participants were also asked to rate the exemplar relationship they generated for how closely it resembled the attachment-style description.

that matched the secure attachment-style description and to respond to the same question about ease of recall. This process was repeated for the avoidant and anxious-ambivalent attachment-style descriptions.

Results

The frequencies of the three general attachment styles were consistent with those obtained in Study 1 and in previous research (e.g., Feeney & Noller, 1990; Hazan & Shaver, 1987): 204 secure (59%), 103 avoidant (30%), and 37 anxious-ambivalent (11%).

Analyses of the first relationship generated. The primary dependent measure was the ease with which participants could generate a relationship to fit each description. We began by conducting analyses of the first relationship listed for each description.⁵ Ratings of ease of retrieval were analyzed in a 3×3 (General Attachment Style \times Relationship Type) ANOVA, with repeated measures on the relationship type variable. A significant main effect for relationship type was obtained, $F(2, 546) = 7.64, p < .01$. As expected, this effect was qualified by a General Attachment Style \times Relationship Type interaction, $F(4, 546) = 5.46, p < .001$. Means for this interaction appear in Table 6.

The means show the predicted pattern, whereby each type of relationship was generated most easily by participants whose general style matched the specified pattern. However, this between-groups effect was the most reliable and indeed was significant only for anxious-ambivalent relationships, which were generated most easily by participants with anxious-ambivalent attachment styles. The within-column means show that participants with secure attachment styles generated secure relationships significantly more easily than either of the other relationship types and participants with avoidant attachment styles also generated secure relationships more easily than either avoidant or anxious-ambivalent relationships. Participants with anxious-ambivalent attachment styles generated anxious-ambivalent relationships more easily than avoidant relationships. Thus, for participants with secure attachment styles and participants with anxious-ambivalent attachment styles, the style ratings corresponded to the cognitive accessibility of the relevant exemplars. However, the findings were somewhat weaker for the participants with avoidant attachment styles, who found it easiest to generate secure relationships and then avoidant relationships.

Categorical analyses. The vast majority of participants (80%) were able to think of at least one relationship that matched each of the attachment-style descriptions. However, in a subset of cases (68 cases, or 20%), participants could not think of an exemplar for one or more of the attachment patterns. We expected that people's inability to think of such relationships would be related to their general attachment style. Therefore, we conducted a series of chi-square analyses, with general attachment style and participants' failure to think of a relationship as categorical variables. Participants were included in the analyses if they had indicated a relationship for at least one but not all three

Table 6
Ease of Generating Relationships Representing Each Attachment Orientation

| Relationship type | General attachment style | | |
|--------------------|-----------------------------|------------------------------|--|
| | Secure (<i>n</i> = 160) | Avoidant (<i>n</i> = 85) | Anxious- ambivalent (<i>n</i> = 31) |
| Secure | | | |
| <i>M</i> | 2.01 _a | 1.71 _a | 1.61 _a |
| <i>SD</i> | 1.30 | 1.75 | 1.71 |
| Avoidant | | | |
| <i>M</i> | 0.93 _a | 1.38 _a | 1.07 _a |
| <i>SD</i> | 1.81 | 1.58 | 1.77 |
| Anxious-ambivalent | | | |
| <i>M</i> | 0.66 _a | 0.98 _a | 2.13 _b |
| <i>SD</i> | 1.97 | 1.78 | 1.33 |

Note. Within rows, means with different subscripts differ significantly ($p < .05$).

of the descriptions. The results indicated that participants' reported attachment style was related to their ability to identify different types of relationships. As shown in Table 7, the percentage of participants who could not name a secure relationship was relatively high for participants who reported insecure general attachment styles, $\chi^2(2, N = 276) = 11.49, p < .01$. Similarly, the percentage of participants who could not name a relationship in which they felt avoidant was higher for participants who reported a secure or an anxious-ambivalent general attachment style, $\chi^2(2, N = 276) = 7.07, p < .05$. Finally, the percentage of participants who could not name a relationship in which they felt anxious-ambivalent was highest for participants reporting a secure or an avoidant general attachment style, $\chi^2(2, N = 276) = 19.19, p < .001$. These findings suggest that on the rare occasions when people cannot think of exemplars for a certain attachment pattern, this pattern probably is not the pattern they endorse as their general attachment style.

Analyses of the second relationship generated. Analyses parallel to those reported for the first relationship generated were conducted for the second relationship that participants generated for each description. The findings for these relationships were similar to those for the first relationships named, albeit somewhat weaker. A main effect of relationship type was obtained for the ease in thinking of the second relationship, $F(2, 456) = 31.38, p < .001$. As with the analysis of the first relationships, participants reported the greatest ease in generating a secure relationship. The General Attachment Style \times Relationship Type interaction was not significant; however, the pattern of means was similar to that obtained for the first relationships generated.

Categorical analyses. Categorical analyses were somewhat stronger. Analyzing participants who were able to generate all three first relationships but failed to report at least one second

Results for this match measure were similar to those for the ease measure, albeit somewhat weaker. Because our main interest was in the accessibility of the information, as indexed by the fluency with which it could be brought to mind, we focus here on the ease measure.

⁵ Note that a small subset of individuals did not report a relationship for one or more of the descriptions. These individuals were dropped from the current analyses but were included in a later set of analyses.

Table 7
Failures To Generate Relationships Representing
Each Attachment Style

| Relationship type | General attachment style | | |
|--------------------|--------------------------|-------------|--------------------|
| | Secure | Avoidant | Anxious-ambivalent |
| Secure | 0% (0/43) | 17% (3/18) | 33% (2/6) |
| Avoidant | 49% (21/43) | 17% (3/18) | 67% (4/6) |
| Anxious-ambivalent | 88% (38/43) | 89% (16/18) | 16% (1/6) |

Note. Numbers in parentheses represent proportions. Proportions do not necessarily add to 100 because some participants were unable to generate more than one type of relationship.

relationship, the results were significant for the secure relationship, $\chi^2(2, N = 117) = 9.85, p < .01$, and the anxious-ambivalent relationship, $\chi^2(2, N = 117) = 19.90, p < .001$, but not for the avoidant relationship, $\chi^2(2, N = 117) = 3.18, n.s.$ As with the analyses of the relationships named first, when participants were unable to identify a second relationship to match one of the descriptions, it was usually not the description corresponding to their general style.

Discussion

The results of this study support and extend the findings of Study 1. First, the majority of participants (80%) were able to identify relationships representing each of the attachment orientations, supporting the earlier findings regarding the availability of multiple working models. However, the ease with which participants could identify such relationships was related to the attachment style they endorsed as capturing their general thinking about relationships. This finding is consistent with the view that chronic perspectives on social experience derive, at least in part, from specific, highly accessible exemplars (e.g., Smith & Zarate, 1992).

In addition, there were some instances in which participants could not think of a relationship that corresponded to a particular attachment pattern. Consistent with the findings of Study 1, the frequency of such instances was related to participants' reported general attachment style. As shown in Table 6, among participants who reported a secure general attachment style, all were able to identify a secure relationship. Conversely, the percentage of participants who could not identify avoidant or anxious-ambivalent relationships was highest among those who did not report the corresponding style.

These results, in conjunction with those of Study 1, are consistent with the hypothesis that reported general attachment styles are a function of the availability and the resultant accessibility of exemplars for each orientation. If someone has had a high proportion of relationships in which his or her interactions corresponded to a particular attachment pattern, that person presumably will possess a well-articulated and highly accessible knowledge structure for that pattern.

As in Study 1, these group differences occurred in the context of a main effect for relationship type: Across the board, participants found it easier to generate examples of secure relationships. In this study, even participants with chronic avoidant at-

tachment styles reported somewhat greater ease in recalling a secure relationship than an avoidant relationship. This raises the intriguing question of why people who report that they have had many experiences in secure relationships—possibly even as much as they have had in insecure relationships—nonetheless characterize themselves as generally avoidant or anxious-ambivalent. We speculate that this reflects a general tendency, observed in the impression formation literature (e.g., Anderson, 1965; Fiske, 1980; Hamilton & Zanna, 1972; Skowronski & Carlston, 1989), to disproportionately weight negative information when making judgments. This principle may apply particularly well to the attachment domain, in which evidence of the unavailability or unreliability of an attachment partner is of critical importance. The attachment system is theorized to become activated when interpersonal connections are disturbed or threatened (Bowlby, 1969, 1973); it follows that memories of such events would be especially impactful on a person's sense of security. Still, given that most people have multiple models of relating available to them, more research is required to determine why many people seem to adopt negative models as their prevailing view of relationships. Future studies could examine temperamental reactivity to negative information or perhaps individual differences in orientations to positive versus negative outcomes (e.g., Higgins, Roney, Crowne, & Hymes, 1994).

Study 3

Thus far, we have focused on chronic individual differences in information processing, as evidenced in the availability and the chronic accessibility of relational knowledge. This emphasis is consistent with the adult attachment literature. The assumption in much social-cognitive research, however, is that chronic factors such as availability and frequent activation only partly account for whether certain elements of social knowledge will be accessible for information processing; there are also a host of temporary factors that can influence momentary accessibility (e.g., Higgins & King, 1981; Sedikides & Skowronski, 1991). A challenging test for a social-cognitive conceptualization of mental models, therefore, would be to try to demonstrate that these models show temporary accessibility effects, in addition to the chronic effects that have already been examined.

Past research in other domains has shown that it is possible to prime, or make temporarily more accessible, cognitive representations of significant relationships by having participants visualize significant others (Baldwin & Holmes, 1987) or by momentarily exposing participants to significant others' names (Baldwin, 1994) or faces (Baldwin, Carrell, & Lopez, 1990). These priming manipulations lead participants to process new information in a way that is consistent with the activated relational pattern. For example, after a highly evaluative relationship has been primed, a person might be more prone to be critical of self (Baldwin & Holmes, 1987). In the present study, the question was whether different attachment orientations could be activated and if this would influence the way people process relational information, leading them to respond in ways congruent with the behavior of those who report that orientation on a more chronic basis. Findings of this nature would lend further support to the notion that attachment orientations re-

flect accessible relational schemas, as opposed to traitlike entities.

We investigated priming in the context of partner choice. Extant research has indicated that attachment orientation is an important factor in individuals' selection of partners for romantic relationships. The purpose of the present study was to determine whether these findings could be replicated when attachment orientations were primed, rather than viewed as chronic characteristics of the individuals involved.

Researchers studying attachment styles have generally found that individuals choose partners similar to themselves, who demonstrate similar relational styles. For example, people with secure attachment styles are most often involved with secure partners (Kirkpatrick & Davis, 1994), and if they are not in a relationship they would choose a secure partner (Pietromonaco & Carnelley, 1994), thereby supporting the notion that people tend to be attracted to potential partners who are similar to them (e.g., Byrne, 1971). Findings with people reporting anxious or avoidant attachment styles are slightly less straightforward. For example, Kirkpatrick and Davis (1994; see also Collins & Read, 1990) found very few anxious-anxious or avoidant-avoidant couples in their study of ongoing relationships. Rather, participants low in comfort with closeness (avoidant) tended to be with partners high in fear of abandonment (anxious-ambivalent). However, several researchers have made the important observation that such complementarity of styles may be a result of experiences in the relationship (Frazier et al., 1996; Kirkpatrick & Davis, 1994), rather than a reflection of partner choice.

Indeed, more consistent are findings from studies that focus directly on initial attraction and partner choice. In Pietromonaco and Carnelley's (1994) study of imagined relationships, preoccupied (or anxious) participants reported more positive emotions and responded more favorably to similarly preoccupied partners, as compared with avoidant partners, and tended to choose preoccupied partners over avoidant partners for a hypothetical relationship.

We built on a similar study by Frazier et al. (1996), who also studied attachment-style effects on attraction by having participants consider potential relationship partners who were described on screening sheets from a dating service. Their results supported the notion of attraction to similarity. Secure participants were most likely to choose secure partners (52%), followed by anxious-ambivalent (39%) and avoidant (9%) partners. Avoidant participants were most likely to select avoidant partners (41%), followed by anxious-ambivalent (31%) and secure (28%) partners. Finally, anxious-ambivalent participants most often chose anxious-ambivalent partners (53%), followed by secure (36%) and avoidant (11%) partners. Participants of each type were more attracted to potential partners of their own chronic style than were participants of the other styles.

The purpose of the present study was to extend these correlational findings by adopting an experimental approach and investigating the influence of accessible mental models on individuals' attraction to new romantic partners. We had participants visualize one of their relationships in which they tended to feel secure, avoidant, or anxious-ambivalent in order to increase the temporary accessibility of a particular working model. Sometime later, we showed them descriptions allegedly

of potential dating partners and asked for attractiveness ratings. Extrapolating from Frazier et al.'s (1996) findings for chronic attachment style, we hypothesized that participants would be most attracted to potential partners of the same orientation with which they were primed. People primed with a relationship in which they functioned in ways characteristic of a secure attachment style were expected to respond most favorably to potential partners who also demonstrated a secure attachment style. People primed with a relationship in which they functioned in ways characteristic of an anxious-ambivalent attachment style were expected to demonstrate higher attraction toward potential partners also exhibiting an anxious-ambivalent style of relating. Finally, those primed with a relationship in which they were characteristically avoidant were expected to be most attracted to potential partners with an avoidant attachment style.

Method

Participants. Ninety-nine people who were not currently involved in a romantic relationship were recruited for a study of "satisfaction in different relationships." Eighty participants (50 women and 30 men) completed all phases of the study; only their data were included in the analyses.

Measures and procedure. The first phase of the study took place in a large group setting. Participants first provided demographic (age and gender) information. They then completed a short questionnaire that listed descriptions of different types of relationships or people and asked them to give the name of a person with whom they had experienced that type of relationship. Seven of the 10 descriptions were filler items, asking about a moralistic or adventurous person, for example. Embedded in the list were descriptions of the three attachment orientations identified by Hazan and Shaver (1987), modified to refer to a specific relationship (e.g., "think of a person you are somewhat uncomfortable being close to").

To measure chronic attachment style, participants also filled out the self-categorization measure (Hazan & Shaver, 1987) and then rated each description on a 7-point scale ranging from 1 (*not at all like me*) to 7 (*very much like me*).

A second experimental session took place 3–5 days later. The first part of this session was intended to prime participants with a relationship representing one of the three attachment styles. Participants were taken to individual rooms by a male experimenter, who had also administered the previous session. They were told that the purpose of the study was to find out how well people can visualize, or picture in their minds, different significant others by having them visualize one of the persons whose names they generated in the previous session.

One of the three relationships (in which participants reported feeling secure, avoidant, or anxious-ambivalent) was randomly selected for each participant, and the name corresponding to this orientation was included in a set of written instructions (the experimenter was naive to condition). Participants were left in a small laboratory with written and tape-recorded instructions that guided them through the visualization. The tape included instructions to "picture this person's face" and "try to imagine being with this person" (see Baldwin & Holmes, 1987). After the visualization, participants rated how clear, difficult, and realistic they found the visualization to be in order to support the cover story and give a plausible reason for the visualization (e.g., Bargh, Lombardi, & Higgins, 1988).

Participants were told that this was the end of the study, but because of the brevity of the session another experimenter would conduct a short second study on the "adequacy of information used in dating services." They were taken down the hall to a different room where a female ex-

perimeter then conducted a group session. Participants were given the following cover story:

Agencies such as dating services utilize limited personal information to assist people in finding satisfying relationships. We are curious about how much one can tell about a person based on information provided on a dating service screening sheet and if this kind of information is helpful in the selection of potential partners. In this study, we are interested in your impressions of several people who completed screening sheets for a dating service.

Three hypothetical clients of each attachment orientation were generated.⁶ The screening sheets were filled out using different handwriting for each one to give the appearance that they actually had been completed by clients at a dating service. The sheets listed a variety of filler information, including the person's hometown, major in college, and so forth. In one section of the screening sheet titled "How would you describe yourself as a relationship partner?" the clients had ostensibly written self-descriptions, which were designed to represent one of the three attachment orientations (e.g., avoidant: "I have never been in love" or anxious-ambivalent: "Few people are as willing and able as I am to commit themselves to a long-term relationship"; see Frazier et al., 1996, for further details). These descriptions were randomly combined into three different sets of three, with one secure, one anxious-ambivalent, and one avoidant client in each set; one set of three was given to each participant. Participants filled out nine 7-point rating scales, ranging from 1 (*not at all*) to 7 (*very*), that assessed their attraction to each person (e.g., "How attracted do you feel to this person?" and "How much would you like to date this person?"; Frazier et al., in press). These items were summed to form a global attraction measure ($\alpha = .91$). Finally, participants again filled out Hazan and Shaver's (1987) self-categorization measure of attachment style and made continuous ratings of the descriptions.

Results

The main dependent variable was attraction to the three potential dating partners who displayed varying attachment orientations. We conducted a 3×3 (Primed Orientation \times Dating-Partner Style) ANOVA, with primed orientation as a between-groups variable and dating-partner style as a within-subjects variable.

The main effect of primed orientation was nonsignificant, $F < 1$, showing that the primes did not influence people's overall attraction to all potential dating partners. The main effect of dating-partner style was significant, $F(2, 142) = 7.32, p < .001$, illustrating that participants were most attracted to the dating partners with secure attachment styles ($M = 4.07$), followed closely by dating partners with anxious-ambivalent attachment styles ($M = 4.01$), with the lowest attraction to dating partners with avoidant attachment styles ($M = 3.49$). This general aversion to partners with avoidant attachment styles replicates earlier research (Frazier et al., in press).

Participants' dating preferences depended on their accessible working models, however, as indicated by the predicted interaction between primed orientation and dating-partner style, $F(4, 142) = 2.46, p < .05$. As shown in Table 8, the means were largely consistent with predictions (although specific effects tests were generally nonsignificant): Participants who had recently visualized a secure relationship showed somewhat more attraction to dating partners with secure attachment styles than did participants primed with either insecure style of relation-

Table 8

Attractiveness Ratings as a Function of Primed Attachment Orientation and Orientation of Potential Dating Partner

| Partner orientation | Attachment prime | | |
|---------------------|------------------------|--------------------------|------------------------------------|
| | Secure ($n = 27$) | Avoidant ($n = 26$) | Anxious-ambivalent ($n = 21$) |
| Secure | | | |
| <i>M</i> | 4.29 | 3.76 | 4.17 |
| <i>SD</i> | 1.15 | 1.29 | 1.29 |
| Avoidant | | | |
| <i>M</i> | 3.25 | 3.63 | 3.61 |
| <i>SD</i> | 1.15 | 1.20 | 1.31 |
| Anxious-ambivalent | | | |
| <i>M</i> | 4.37 | 3.64 | 4.01 |
| <i>SD</i> | 1.17 | 1.38 | 1.26 |

Note. Higher numbers represent greater attraction.

ship; avoidant-primed participants were the most attracted to dating partners with avoidant attachment styles; and although participants primed with an anxious-ambivalent orientation were not the most strongly attracted to dating partners with anxious-ambivalent attachment styles, they were more attracted to these similar others than were participants primed with an avoidant orientation.

Thus, the simple priming manipulation was successful in making different kinds of relational knowledge accessible for people in different conditions, and this had a significant effect on their attraction to potential dating partners. This effect of temporary accessibility was very similar to the effects found in previous research on chronic attachment styles. Looking at chronic styles in the current study, if attraction ratings were analyzed as a function of participants' self-reported styles (from either Time 1 or Time 2), there was no significant effect, although the means were consistent with previous research and some cell sample sizes were quite low (< 10). Importantly, however, if participants' continuous ratings of the three chronic attachment-style descriptions were included as covariates in the main analysis, the priming effect remained significant.⁷

⁶ We are grateful to Pat Frazier for providing us with her materials.

⁷ Because the priming manipulation had the predicted effect on attraction to potential dating partners, we explored if it would be strong enough to also influence participants' self-ratings of their chronic, or general, attachment style. Past research (see Baldwin & Fehr, 1995) has shown, for example, that people's self-categorizations often change from one measurement time to the next, even over a very short period. Indeed, of the participants in the current study who reported their style at both measurement sessions, 23% (16 out of 71) gave different answers at the two times. Baldwin and Fehr discussed the potentially unsettling implications of this kind of instability (which often is observed to be in the 30% range). In the present context, our interest was in whether shifts in self-perception, as indexed by the continuous ratings of the three attachment-style descriptions, might be attributable to the priming manipulation. Various analyses, including repeated measures analyses and ANOVA of just the Time 2 measures, with or without Time 1 measures as covariates, did not indicate that the priming manipulation influenced self-reported attachment style ($F_s < 1$). Thus, even though the prime influenced ratings of attraction to potential dating partners, it did not

Discussion

We have argued that chronic attachment orientations arise from chronically accessible relational knowledge structures, and Study 3 yielded experimental findings showing it is also possible to manipulate the temporary accessibility of these structures. Making different kinds of relational information temporarily accessible for different participants had a significant effect on how they responded to potential dating partners. Generally, people were drawn most strongly to partners with secure attachment styles and least strongly to partners with avoidant attachment styles. These preferences varied according to the participants' current frame of mind, however, as dating preferences tended to shift toward partners with similar orientations. These findings are consistent with past research on the effects of chronic attachment styles (Frazier et al., 1996) and further support the interpretation of attachment styles as reflecting chronically accessible relational schemas. This study highlights the importance of recognizing that people possess multiple working models of attachment, and rather than responding to new relationship opportunities in predictable ways according to a chronic style of attachment, they may be influenced by the relational knowledge that is accessible at the time.

The preference for similar relationship partners meshes well with conventional findings from the attraction literature, where similarity in attitudes has been shown to be a strong predictor of attraction in friendship and romantic relationships (Byrne, 1971). Berscheid and Walster (1978) suggested that this effect results from people expecting to have pleasurable interactions with similar others (see also Burleson, 1994). In the current study, participants primed with a relationship in which they felt secure would have come to the dating-service phase of the study with positive memories highly accessible, leading them to expect positive outcomes from interactions with others and to feel more comfortable about trusting and getting close to others who felt the same. Participants primed with an avoidant relationship, however, would feel momentarily uncomfortable about trusting or getting close to others. Therefore, when rating potential partners, avoidant-primed participants would not be attracted to partners who desired to be close and intimate but rather to a partner who enjoyed maintaining a degree of distance. Conversely, participants primed with an anxious-ambivalent relationship would have been reminded of relationship patterns in which others were reluctant to be close and so would prefer to be with others who were comfortable with closeness rather than aloof or distant.

As this interpretation reflects, there are important affective and motivational implications of relational knowledge. A favorable appraisal of a potential relationship partner involves positive feelings and a desire to interact as well as favorable beliefs about the person. Thus, the activation of interpersonal knowledge structures can also lead to the activation of schema-triggered affect (Andersen & Baum, 1994; Baldwin, 1994; Fiske, 1982) and specific motivations (see Baldwin, 1992, for a discussion). It is therefore not surprising that chronic accessi-

bility of these structures can lead people to perceive and conduct their relationships in very different ways.

General Discussion

The results of these three studies illustrate the heuristic value of applying current social-cognitive theory to the understanding of working models of attachment. Study 1 showed that people's self-rated attachment style corresponded to the availability and the spontaneous accessibility of different kinds of attachment knowledge: Participants with secure attachment styles were the most likely group to report secure relationships, participants with avoidant attachment styles were most likely to report avoidant relationships, and participants with anxious-ambivalent attachment styles were most likely to report anxious-ambivalent relationships. At the same time, it was clear that a sizable majority of people reported a mixture of types of relationships, and most of these relationships were characterized as secure. Even when specifically referring to romantic involvements, participants with insecure attachment styles reported approximately as many secure relationships as they did relationships matching their particular insecure style.

Study 2 showed that when participants were directly asked to generate examples of specific experiences, these exemplars came to mind more easily for some than for others. Consistent with the findings from the first study, most people were able to generate exemplars for all three attachment patterns, but their general attachment style predicted which patterns came to mind most easily. If certain patterns of relating are highly accessible, as our data suggest, this can account for why people may develop chronic tendencies to view attachment experiences in stylistic ways. These findings provide empirical support for the notion that people have a range of attachment experiences and that their attachment style may simply represent a relative overweighting of one type of pattern. Combining this finding with the finding that most relationships are reported as secure suggests that accessible memories of relationships representing unsatisfying attachment experiences may be especially influential in people's views of relationships. Being hurt, abandoned, or rejected even a few times may form the basis for a chronically negative approach to attachments.

Finally, Study 3 tested an extension of this analysis in the hypothesis that mental models of attachment can vary in their temporary accessibility, much as any other cognitive structure can. Simply visualizing a secure, avoidant, or anxious-ambivalent relationship for a few moments served to prime people with that way of relating, leading them to later respond to interpersonal information in different ways. Parallel to previous research on chronic attachment styles (Frazier et al., 1996), the activation of mental models led people to show increased attraction to potential dating partners displaying a similar attachment orientation.

It would be difficult to reconcile these findings with the implicit view in the adult attachment literature that attachment styles are essentially stable personality dispositions that presumably define people's orientations in all their relationships, or at least in their most significant close relationships. On the contrary, we found that people reported multiple ways of relating to others, even across their most important and romantic

produce significant shifts in participants' ratings of their general attachment style.

relationships. Inconsistent with what might be expected on the basis of attachment theory, Study 1 revealed poor overlap between general self-reported style and orientations with mother, father, and current romantic partner.

Findings such as these argue for an increased emphasis on variability in relationship-specific attachment orientations. At the same time, we do not recommend that all thoughts of individual differences be abandoned and that the notion of mental models be restricted to specific models of specific relationships. Rather, we suggest that applying current social-cognitive theory to Bowlby's (1969, 1973, 1980) notion of working models could facilitate an integration of these two literatures, with a salutary effect on the conceptualization of adult attachment.

Although there is still much work to be done toward a comprehensive view of working models of attachment, perhaps we can speculate on some basic principles of how relational knowledge is structured. Our own theoretical background has involved schema (e.g., Baldwin, 1992) and prototype (e.g., Fehr, 1988) models of representation. However, we agree that knowledge structures probably are "more alike than they are different" (Markus & Zajonc, 1985, p. 144) and have been trying to develop an integrated view of schemas, prototypes, and scripts (see, e.g., Fehr & Baldwin, 1996). Recent research (e.g., Smith & Zarate, 1992) has demonstrated the importance of exemplar or instance knowledge in addition to the abstract, generic knowledge presumed to characterize schemas or prototypes (e.g., Alba & Hasher, 1983). We see the data from the present studies as consistent with a "mixed model" (e.g., Smith, 1990) in which exemplar and abstract representations are combined in an associative structure.

At the most basic level, people presumably have episodic memories of interactions with significant others (e.g., "the time Bob let me down"). As exemplar models suggest, similar memories may resonate with one another, such that thinking about one event reminds one of similar experiences with the same person ("the other times Bob let me down") or with other people ("the time Sally let me down"). If these memories are retrieved together repeatedly over time, they will develop associative links between them, leading to the formulation of relationship-specific expectations ("Bob always lets me down") or more generic relational schemas and beliefs ("people can't be counted on").

Given that most people have a range of interpersonal experiences—both across different relationships and within a single relationship—they probably develop a repertoire of relational schemas representing different interpersonal patterns. Individuals differ with respect to how much experience they have had with certain patterns, however, and they may develop more articulated structures to represent their most typical patterns. Therefore, as Study 1 suggests, attachment styles may reflect "tolerably accurate" (Bowlby, 1973, p. 202) working models of how much experience people have had in different types of relationships.

The structure of relationship knowledge may be hierarchical, as other researchers have suggested (e.g., Bretherton, 1990; Collins & Read, 1994), with the person's core or default working model at the highest, most abstract level. We are not convinced that relationship knowledge is neatly organized in a hierarchy and lean more toward "tangled web" (e.g., Andersen & Klatzky, 1987; Cantor & Kihlstrom, 1987; Conway, 1990; Russell &

Fehr, 1994; Smith, 1990) and related approaches. Nonetheless, we are encouraged that increasing numbers of researchers are beginning to try to define the specifics of how relational information is represented and processed.

Research in this area can continue to benefit by importing methods from cognitive psychology. Studies using priming or spreading-activation approaches (e.g., Baldwin et al., 1993), for example, could be used to examine contextual influences on how exemplar knowledge is recruited on-line to define situationally appropriate constructs (e.g., Smith & Zarate, 1992). Similarly, recently developed methods for priming goals (e.g., Bargh, 1990) can be used to study the motivational and behavioral effects of temporarily accessible structures. For example, in addition to the effects of chronic attachment style on self-disclosure (e.g., Keelan, Dion, & Dion, 1994; Simpson, Rholes, & Nelligan, 1992), one might expect priming effects. A man might feel very differently about discussing an anxiety-provoking event with his partner if he has recently been reminded of his unfailingly supportive mother, for example, rather than his critical and dismissive ex-wife. Further research could examine how priming any number of relational patterns (e.g., demand-withdraw, succorance-dependence) affects attention, interpretation, memory, and motivation with respect to interpersonal events (see Baldwin, 1992, for an elaboration of this point).

In an influential review of the close relationships field, Clark and Reis (1988) advocated developing experimental methods to study relationships phenomena, rather than relying on correlational techniques as has often been the case. In a recent review, Berscheid (1994) encouraged social-cognitive analyses of relational phenomena and elucidated what was to be gained by this approach. The present set of studies was an attempt to respond to both of these methodological and conceptual exhortations. We believe that an integrated social-cognitive approach, in which correlational methodology is complemented with experimental methods, holds great promise for the study of close relationships in general and attachment theory in particular.

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