Automaticity in Close Relationships

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Close relationships are the subject of countless films, novels, songs, self-help books, and philosophical reflections—not to mention ordinary, everyday conversation and thought. They can be the sources of joy, love, and security, as well as of pain, anxiety, and sorrow. They capture our attention and interest, and demand time, energy, and resources. Put simply, close relationships are a core element of daily interpersonal life. People devote deliberate thought to their close relationships, and often take great care in choosing their words and deeds in them. Yet at the same time, mounting theory and evidence indicate that many if not most relationship processes and phenomena occur rather automatically.

The past two decades have witnessed an explosion of social-psychological theory and research on automaticity, as well as the development of new empirical techniques to measure automatic processes (Hastie, Uleman, & Bergh, 2005; Uleman & Bergh, 1989). It is thus unsurprising that notions of automaticity have increasingly appeared in the close relationships literature. The study of automaticity in this literature is part of a broader trend toward bridging the fields of social cognition and close relationships. The result has been the birth of a new field—relationship cognition—which focuses explicitly on social-cognitive structures and processes underlying relationship phenomena (Ross & Doney, 1999).

In this chapter, we present a broad sampling of theory and evidence on automaticity in close relationships. We begin by offering a definition of close relationships, and then briefly lay out some basic definitions and assumptions regarding automaticity. From there, we describe a diverse group of distinctly social-cognitive approaches to close relationships, a group that has produced some of the most direct evidence for automaticity in the close relationships domain. We conclude with a discussion of common themes underlying much of this evidence—namely, the perpetuation of prior relationship experiences and their re-emergence in present-day encounters.
DEFINITIONS

Defining Close Relationships

The formation and maintenance of close relationships are likely manifestations of the fundamental human need for belonging and connection (Baumeister & Leary, 1995; see also Andersen & Cashile, & Chen, 1987). We define close relationships in terms of the self in relation to significant others, and assume that each relationship with a significant other is mentally represented in this form. Specifically, the cognitive structure of each relationship is comprised of knowledge about the relevant significant other and self-knowledge reflecting who one is in the context of one's relationship with the other. Such self- and significant-other knowledge structures are bound in memory by linkages that embody the typical patterns of self-other interaction. Although each relationship is unique in some manner (e.g., Hindeley & Andersen, 1995), we recognize that generalized relationship structures exist alongside relationship-specific ones (e.g., Kellerman, Weller, Loo, & Choe, 2005; Ogilvie & Ashmore, 1994; Pierce & Lydon, 2001). Numerous approaches to close relationships assume that significant-other representations are distinct in memory from self representations, and yet also assume, as we do, that these representations are linked in memory. Evidence supports both of these assumptions, even though exact models of representation may vary (e.g., Andersen & Chen, 2002; Aver, Aron, Tudor, & Noble, 1961; Baldwin, 1982).

As cognitive structures, close relationships can be activated and used, thereby exerting assimilative influences on cognition, affect, motivation, and behavior. For example, an activated relationship structure may lead people to expect to be treated by others as relationship partners have previously treated them. In terms of affect and motivation, we assume that people are emotionally and motivationally invested in their significant others and relationships (Andersen & Chen, 2005; Bowerby, 1990; James, 1980; Sullivan, 1953). Thus, the activation of any given relationship structure should and does shape a variety of affective, motivational, and self-regulatory processes. As a final example, when a relationship structure is activated, people may enact behaviors that reflect previous patterns of relating.

We conceptualize the activation of relationship structures in terms of social-cognitive principles of knowledge accessibility (Higgins, 1999, 1996). The higher the accessibility level of any given knowledge structure, the more likely it will be activated. Accessibility arises from either or both temporary and chronic sources (Bargh, Bond, Lombard, & Tota, 1998). The temporary activation of a relationship structure occurs by virtue of a recent event in the environment (e.g., being reminded of a significant other) that momentarily increases the structure's accessibility. In addition, to the extent that relationship structures have been frequently activated in the past, they are chronically accessible — they have a chronic readiness to be activated even in the absence of temporary accessibility (Andersen, Glassman, Chen, & Cole, 1995; Balbina, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1990). Importantly, regardless of its temporary or chronic nature, the activation of relationship structures often occurs automatically, as will be seen in the evidence we review.

Defining Automaticity

Although notions of automaticity are as old as the discipline of psychology itself (James, 1890), modern-day roots of the study of automaticity were not planted until the 1970s in the realm of cognitive psychology (Schneider & Shiffrin, 1977), and it was nearly another decade before social psychologists began to tackle automatic processes in earnest (Barth, 1989; Uleman & Bargh, 1989). In the decades since, automatic or implicit processes have been studied in an impressively broad range of domains, among them attitudes, stereotyping, self-esteem, motivation, and behavior (e.g., Barth, 1990, 1994; Devine, 1989; Fazio, Sanbonmatsu, Powell, & Karpinski, 1995; Greenwald & Banaji, 1989; Wilson & Brehm, 1994; for more recent reviews, see Andersen, Manstead, Blay, & Nold, in press; Barth, 2005; Moors & De Houwer, 2000; Wegner & Bargh, 1998).

Early definitions of automaticity imposed strict, all-or-none criteria for a process to be deemed automatic. Current views of automaticity, though, recognize that a process need not be categorized as exclusively automatic or not automatic instead, a process is considered to be automatic if it meets at least one of four basic criteria. These criteria are the perceiver's lack of awareness, the perceiver's absence of intention, the efficiency of the process (i.e., its minimal use of cognitive resources), and the perceiver's lack of control (Bargh, 1989, 1994). Thus, a process may be considered automatic in varying senses and to varying degrees, depending on the particular criteria it meets.

All automatic processes are conditional in some respect, that is, their occurrence depends on the presence of certain conditions, however minimal (Bargh, 1989). For instance, some automatic processes simply require the presence of a triggering stimulus, whereas others require that perceivers are aware of the stimulus. Still others may require a conscious intention for their instigation. These very broad varieties of conditional automaticity have been delineated (Bargh, 1989, 1994). Proconscious automatic processes occur under the most minimal of conditions, requiring only that perceivers "notice the presence of the triggering stimulus in the environment" (Bargh, 1994, p. 4). Put another way, these processes occur immediately upon registering the stimulus, and they are completed before perceivers grasp, if they ever do, that such a process has occurred. Of course, people are usually conscious of the end-product(s) of these processes, while remaining unaware of the processes themselves.

Proconscious automatic processes include the activation and use of knowledge structures that occur upon perceivers' subliminal exposure to relevant triggering cues, or that occur by virtue of the chronic accessibility of the knowledge structures. Such processes typically meet all four automaticity criteria. For example, in the case of chronically accessible knowledge structures, perceivers typically do not consciously intend, nor are they aware of, the activation of these highly accessible structures and the consequent meaning they impart. Moreover, the activation and use of such structures typically occur efficiently and uncontrollably.

Proconscious automatic processes are similar to preconscious ones except that they require some form of recent, conscious processing (Bargh, 1994), such as the processing initiated by many social-cognitive priming manipulations. For
example, perceivers may engage in a priming task that requires them to unscramble strings of words to form grammatical sentences. In doing so, they end up consciously processing semantic associates of a given knowledge structure that have been embedded in the word strings. This conscious processing results in the temporary activation of the knowledge structure and, in turn, responses that are colorized by this structure. Thus, whereas chronic accessibility effects are presumed to be preconscious in nature, requiring no conscious involvement at all, temporary accessibility effects are postconscious insofar as they result from the "residual activation of conscious processing" (Burgh, 1994, p. 5). Importantly, although they are instigated by conscious processing, postconscious automatic processes themselves typically occur efficiently and in the absence of intention, awareness, and control.

Finally, goal-dependent automatic processes are those that occur by virtue of a conscious goal or intent (Burgh, 1994), such as the conscious goal to form an impression of a target person. A perceiver with such a goal may, for instance, judge the target person along well-learned, stereotypical attributes dimensions automatically. An empirical test of such automaticity might entail the use of a dual-task paradigm wherein perceivers are required to engage in two tasks at once. To the extent that perceivers are able to respond to one of the tasks without any interference from the other, it is assumed that the processes involved in the former require minimal cognitive resources, one of the criteria of automaticity (e.g., Burgh & Tota, 1995). To illustrate, a perceiver with a conscious, impression formation goal may make stereotypical judgments of a target person as quickly while engaging in a competing task as when not engaging in such a task, implying that his or her judgments were rendered automatically. Thus, although conscious intention is initially involved in goal-dependent automaticity, once the goal or intent is triggered, subsequent processes may nonetheless meet one or more of the other three automaticity criteria.

Evidence for many of the above varieties of automaticity can be found in the close relationships literature. Although seldom are the criteria of automaticity spelled out theoretically or explicitly measured, evidence for automatic processes in the domain of close relationships is mounting rapidly. The lack of precision in definitions and in operational specificity in the study of automaticity in close relationships is not unique to this literature. Notions of automaticity are becoming so common, and the assumption that a process that meets any of the criteria of automaticity can be deemed automatic so widely accepted, that providing unpenetrating evidence for automaticity per se is becoming increasingly less mandatory. Nonetheless, in the pages that follow, we offer a sampling of theory and evidence for automatic processes and phenomena in the realm of close relationships and try to specify throughout the particular bases on which automaticity can be reasonably assumed.

Social-Cognitive Approaches to Close Relationships

Fittingly, evidence for automaticity in the close relationships literature comes from theoretical approaches that are fundamentally social-cognitive in nature. In this section, we lay out the key assumptions of a diverse group of these approaches, before describing evidence for the automaticity of a variety of specific relationship processes and phenomena. We also describe the social-cognitive methods that research in a given area typically uses. In so doing, we point out the variety or varieties of automaticity that are usually demonstrated and on which this can be assumed. Although evidence for automaticity can be found elsewhere in the literature, we focus primarily on the following theoretical frameworks and processes because their social-cognitive underpinnings are especially well-defined and elaborated.

Transference and the Relational Self

Transference refers to the phenomenon whereby aspects of relationships experienced in the past rear up in the present (Freud, 1958; Sullivan, 1955). The social-cognitive model of transference (Andersen & Glassman, 1995) maintains that the phenomenon occurs by virtue of the activation and use of a mental representation of a significant other. Significant-other representations contain many forms of "cold" and "hot" information, such as the personality attributes of significant others, evaluations of them, goals pursued with them, and the emotions one experiences with them. When a significant-other representation is activated in an encounter with a new person, the perceiver interprets and responds to the person in ways derived from the representation. For example, the perceiver infers that the new person possesses attributes that characterize his or her significant other, and responds toward the person as he or she typically does toward the significant other (Andersen & Cole, 1990; Chen, Andersen, & Hinkley, 1992).

The social-cognitive model of transference has recently been elaborated into a theory of the relational self—that is, the self in relation to significant others (Andersen & Chen, 2000). This theory assumes that each significant-other representation is linked in memory to knowledge reflecting the relational self—the particular self one is in the context of the significant other. Linkages between a significant-other representation and the relational self embody the typical patterns of relating between self and other. The theory maintains that activation of a significant-other representation spreads across these linkages to associated relational-self knowledge. This activates the relevant relational self and self-other relational patterns. In short, when transference occurs, people become part the self they are with the relevant significant other, only with newly encountered others. For example, they see themselves in terms of the qualities that characterize their relational self and shift how they evaluate themselves to reflect their sense of self-worth when with the relevant significant other (Hinkley & Andersen, 1996). Research indicates that the activation and use of significant-other representations—that is, the triggering of transference—often occurs automatically.
criticism and reject me" may give rise to the self-inference rule "If I make a mistake, then I am unworthy" (Baldwin, 1997), p. 330). Relational schemas are assumed to be activated by virtue of their chronic or temporary accessibility or both. When a relational schema is activated, the if-then contingencies and self-inference rules that are stored as part of it are elicited, leading the perceiver to anticipate previously-experienced responses from others and to evaluate the self accordingly.

Using a variety of social-cognitive techniques, research has shown that the activation of relational schemas is often provoked automatically. Because the three components of relational schemas are associated in memory, the temporary or chronic activation of any one of them is thought to elicit the activation of the relational schema as a whole (Baldwin, 1992). One of the most commonly used techniques to temporarily activate a relational schema has been a visualization exercise in which participants are asked to think about and visualize interacting with a significant other (e.g., Baldwin & Holmes, 1987). Afterward, participants are asked to engage in a variety of externally unrelated tasks designed to assess the effects of activating the relevant relational schema. In such studies, the activation and subsequent effects of the relational schema can be seen as postconsciously automatic, given that the visualization exercise requires conscious processing, yet the actual activation of the relational schema and its consequences generally occur effortlessly, uncontrollably, and without much in the way of participants' conscious awareness or intent.

Research using lexical decision tasks provides another form of evidence for automaticity in the activation and use of relational schemas. To illustrate, in one set of studies participants engaged in a lexical decision task, which required them to make word/nonword judgments for a series of target stimuli, each preceded by a prime. Some of the prime and target stimuli reflected, respectively, "if" and "then" of the if-then expectations that characterize relational schemas involving contingently accepting significant others (e.g., "If I succeed, then I will be accepted" and "If I fail, then I will be rejected") (Baldwin & Stinchfield, 1996; see also Baldwin, Baccus, & Fitzsimons, 2004). Prior to this task, participants visualized either a contingently or noncontingently significant other, which presumably resulted in the postconsciously automatic activation of the relevant relational schema. As a result, participants responded more quickly to prime-target pairs reflecting contingent acceptance after visualizing a contingently-accepting significant other versus a noncontingently-accepting other.

The logic of the use of lexical decision tasks to document automaticity is that respondents are unaware that their response latencies are being assessed, and thus do not intentionally respond more quickly to some prime-target pairs over others. Moreover, respondents are consciously doing a different task (i.e., making word/nonword judgments about a set of letter strings), rather than explicitly thinking about the meaning of or relation between the prime and target stimuli. Finally, quicker response latencies in this kind of lexical decision task usually indicate the use of minimal cognitive resources, another criterion of automaticity.

Evidence for the preconscious automatic activation of relational schemas also exists. For example, research has used the subliminal presentation of the faces of
Inclusion of Other in the Self

Also fundamentally social-cognitive in nature, the inclusion-of-other-in-self (IOS) model conceptualizes close relationships as involving the incorporation of aspects of relationship partners (e.g., their personality characteristics and perspectives) into the self-concept (Arora et al., 1991). Thus, rather than proposing linkages between the self and significant others, as do the two approaches we just described, the IOS model views close relationships in terms of the merging of representations of the self and others.

Evidence for automaticity in research on the IOS approach lies in studies that have made use of unobtrusive, implicit measures to document close others' inclusion in the self. For example, one study relied on Lord's (1989) finding that object words imagined in relation to the self (i.e., imagining the self interacting with the objects) are encoded and thus remembered less well than words imagined in relation to others (Arora et al., 1991). If significant others are included in the self, then the memory decrement people typically show for objects imagined in relation to the self should likewise hold for objects imagined in relation to significant others. This should occur because the other's perspective is taken as one's own: that is, people imagine the significant other interacting with the objects from the same perspective as when they imagine themselves doing so. In line with such reasoning, participants showed worse memory for words imagined in relation to both themselves and their mothers, relative to words imagined in relation to an acquaintance—presumably without any awareness or intent to do so. This memory-based effect can be presumed automatic in a preconscious sense in that people usually do not consciously register the actual process of inclusion, much less the effects of this inclusion on subsequent processes such as memory.

Evidence for the automaticity of the inclusion of others in the self has most often come from research using response latencies to measure the inclusion of close others' personality attributes (e.g., Arora et al., 1991). In this work, participants rate whether or not a list of traits describe themselves and then a close other. Later, they rate the self-descriptiveness of the same traits again, this time on a computer which records their response latencies. If close others' attributes are included in the self, it should take longer to judge the descriptiveness of traits that are descriptive of the self but not of the other, as well as vice versa, than to judge traits that do not differentiate the self and other. In line with this, faster response latencies are observed in judging traits previously endorsed for both the self and the other (or for neither) as compared with traits that differentiate the self from other. Attesting to the automatic nature of this effect, participants are neither aware that their response latencies are being assessed, nor aware of their differential response tendencies for traits that are shared versus not shared with their close others. Put another way, participants experience their self-judgments as simple judgments of fact, rather than as reflecting inclusion.

On a cognitive level, the inclusion of others in the self is represented in the form of overlap between self and other representations, whereas on a phenomenological level such inclusion is experienced as a sense of "we-ness" (Arora et al., 1991). The concept of "we-ness" can also be seen in research conducted in the framework of interdependence theory (Asch, Van Lange, Ruschult, & Langston, 1996; for a review, see Ruschult & Van Lange, 1996). This work tested the hypothesis that relationship commitment involves a state of cognitive interdependence, defined as possessing an "other-inclusive cognitive representation of the self-in-relationship" (p. 942). Cognitive interdependence was assessed in part in terms of participants' spontaneous use of plural pronouns (e.g., we, us). Just as people are probably not usually aware of, nor do they consciously intend, the consequences of others' inclusion in the self, they are presumably often unaware of and do not intend the consequences of cognitive interdependence, such as heightened plural pronoun use. Supporting the hypothesis that relationship commitment involves cognitive interdependence, commitment was associated with greater plural pronoun use. Though it is not always clear who one is referring to when using the pronoun "we" (e.g., Brewer & Gardner, 1990), such indices can be revealing about the relational perspective one is (or is not) adopting.

Relational-Interdependent Self-Construal

Similar to the view of close relationships put forth by the IOS model, the relational-interdependent self-construal construct (Cross, Buco, & Morris, 2000) refers to a view of the self into which relationships have been incorporated. For individuals who hold such a self-construal, "representations of important relationships and roles share the self-space with abstract traits, abilities, and preferences" (Cross et al., 2000, p. 791). In short, these individuals define and evaluate themselves in terms of their close relationships. Research has tested the relational-interdependent self-construal as an individual difference construct. Of greatest relevance to the present chapter, individual differences in this construct have been linked to automatic, information-processing tendencies. Specifically, individuals who hold a relational-interdependent self-construal chronically process information in ways that support the maintenance of their close relationships.

Although individual differences in this self-construal are assessed via a conscious, self-report measure—the Relational-Interdependent Self-Construal (RISC) scale (Cross et al., 2000)—researchers have used unobtrusive, implicit measures to document the preconscious nature of the processing tendencies...
associated with holding a highly relational-interdependent self-view. For example, one study showed that high scores on the HSC scale were associated with the tendency to selectively attend to and thus better remember relationship-related information about others in a surprise recall task (Cross, Morris, & Core, 2002). Participants were not only unaware that their memory was to be assessed, but presumably also unaware of, and did not intend, the selectivity of their attention and subsequent memory.

**Attachment Working Models**

Attachment theory is a highly influential theoretical model in the study of close relationships (Bowlby, 1969). Since the late 1980s (following the classic work of Hazan & Shaver, 1987), research on attachment theory has increasingly focused on how attachment processes manifest themselves in adult romantic relationships. Internal working models of the self and others are core constructs in this literature (Collins & Read, 1994; Griffin & Bartholomew, 1994; Pietromonaco & Barrett, 2000). According to attachment theorists, working models are developed in the course of early interactions with attachment figures and reflect the individual's experiences in these interactions. In broad strokes, relationships with responsive and caring attachment figures foster secure models, a view of the self as competent and worthy of love, and a view of others as available and responsive. By contrast, relationships with attachment figures who are inconsistently or not at all responsive give rise to insecure models, such as a conception of the self as incompetent and unworthy of love, and of others as unavailable and unresponsive.

A core attachment-theoretical assumption is that early working models are stored in memory and serve as templates for later relationships. Although early attachment theorists did not use the language of modern-day social cognition, they essentially assumed that working models exert their life-long influences by means of their activation and subsequent automatic influences in attachment-relevant situations (e.g., Bowlby, 1969). They further assumed that working models of the self and others are complementary and thus that they are activated and exert their effects in tandem.

Contemporary research has shown that attachment working models can be activated on a chronic or temporary basis, and that such activation can occur automatically. In much of this research, working models have been treated as an individual difference, as assessed via self-report (e.g., Bartholomew, 1992; Hazan & Shaver, 1990). The assumption is that individual differences in attachment correspond to distinct chronically accessible working models. In support of this, there is now an extensive body of evidence showing that self-reported attachment style (i.e., chronic working models) are associated with a variety of cognitive, affective, motivational, and behavioral responses.

As is the case for any chronically accessible construct, the activation of chronic working models of attachment is presumed to be preconscious. This assumption is best substantiated by research in which self-report measures of attachment models are administered in a session different from the one in which the effects of these models (i.e., evidence of their activation) are assessed. In such research, working models are activated and exert their effects solely based on their chronic accessibility, rather than also based on temporary activation arising from having just completed self-report measures of attachment (which are often quite explicit about what is being assessed). Of course, research in which participants complete these measures just prior to engaging in tasks designed to assess the effects of their working models may still provide evidence for automaticity, although it is probably safer to deem these effects postconsciously. However, to warrant even this characterization, it is critical that participants are not aware of any relation between their self-reported attachment style and their subsequent responses.

In this vein, especially compelling evidence for the pre- or postconsciously automatic effects of attachment working models can be found in research to which these effects have been assessed using unobtrusive measures. In such studies, even if attachment models are assessed immediately prior to the unobtrusive measures — and thus temporarily activated — one can safely assume that participants are unaware of the relation between their working models and the subsequent measures, thereby meeting a core criterion of automaticity. For example, research has used unobtrusive response latencies to assess the unique self-evaluative tendencies associated with distinct attachment working models (Milhausen, 1998).

With growing evidence that most people have more than one set of attachment working models stored in memory (e.g., Baldwin et al., 1996; Overall, Fletcher, & Friesen, 2003), researchers are increasingly focused on documenting the temporary activation of these models. To do so, they have utilized various social-cognitive techniques, among them the subliminal presentation of attachment-relevant stimuli (e.g., Mikulincer, Hirschberger, Nachmias, & Gillath, 2001). Because participants do not consciously notice such subliminal stimuli, the resulting activation and effects of their working models are automatic in a preconscious sense. Finally, the temporary and postconsciously automatic activation of attachment working models has also been demonstrated — for example, in research using the visualization exercise developed by relational-schema researchers (e.g., Mikulincer & Arad, 1999).

**Rejection Sensitivity**

Drawing in part on attachment-theoretical assumptions about the long-term consequences of early relationship experiences, rejection sensitivity theorists argue that early exposure to rejection results in rejection sensitivity, a cognitive-affective processing disposition to "anxiously expect, readily perceive, and overreact to" rejection (Downey & Feldman, 1998). Although theorizing on rejection sensitivity has generally not included assumptions about any particular cognitive structure — such as a representation, schema, or working model — the cognitive-affective processing tendencies that define rejection sensitivity are learned and thus presumably stored in memory. Substantial research has shown that in situations where rejection is possible, these processing tendencies are activated among high rejection-sensitive individuals, leading them to perceive, interpret, and behave in ways that confirm their anxious expectations of rejection.
Other Approaches

Of course, other relational approaches to close relationships exist. Several of them focus on delineating the specific, relational patterns and norms that characterize different relationship categories or types, including types of close relationships. For example, in research on communal and exchange relationships, close relationships are akin to communal relationships, wherein members give benefits in response to each other’s need without any specific expectation of receiving benefits in return (Clark & Mills, 1979; Clark, Mills, & Powell, 1986). In relational models theory, which proposes four basic models of relationships, close relationships fit the communal sharing category, which involves relationships wherein members treat one another as equivalent and emphasize what is common rather than distinct among members (Friso, 1991, 1992). These examples, as well as other approaches (e.g., Bogental, 2000), presuppose the importance of close relationships, and have been deeply informative about such relationships. However, because notions of automaticity have been less central or less well-developed in these approaches, and these approaches go beyond close relationships, we include evidence from them only where especially relevant.

PROCESSES AND PHENOMENA

We now turn to evidence for the automaticity of a wide variety of specific relationship processes and phenomena. In particular, we describe evidence for the automatic nature of relationship-relevant information processing, affective responses and evaluation, acceptance and rejection expectations, self-definition and self-evaluation, motivation and self-regulation, and interpersonal behavior. Most of the research we review was provoked by one of the approaches above or from a closely related perspective. Throughout, our aim was to provide a few particularly illustrative examples of automaticity in each of the above processes and phenomena.

Automatic Information Processing

Encoding refers to the process by which perceivers register an external stimulus. Temporarily or chronically accessible knowledge structures influence whether and how a stimulus is encoded. More specifically, in most cases a structure is activated and leads perceivers to attend to and interpret stimuli in an automatic manner. This automatic influence often occurs automatically, with little awareness, effort, intention, and control. On a phenomenological level, perceivers simply register their conception of external stimuli as reality rather than as a product of an activated knowledge structure.

There is ample evidence for automatic encoding effects in research emerging from several of the social-cognitive approaches described above. Namely, the transference, relational schema, and attachment theories all assume that close relationships are essentially represented in the form of some kind of cognitive
Evidence for automatic memory effects also exists. For example, in the study just described, both temporal and chronic working models of secure attachment were associated with not only greater openness to expectancy-incongruent information, but also better memory for this information (Mikulincer & Arad, 1996). The memory effect was primarily seen when the information was positively valenced, suggesting that information that is consistent with the overall positive valence of secure working models of others is more likely to be processed in a manner that leads it to be retained. Another example is the research we described earlier showing that people with a highly relational-interdependent self-construct selectively attend to and thus have better memory for relationship-related information about others (Cross et al., 2002).

Research has also shown that holding a highly relational-interdependent self-construct is associated with an automatic tendency to use relationships as a tool to organize memory about others (Cross et al., 2002). Specifically, one study showed that higher scores on the Relational-Interdependent Self-Construct scale were associated with an implicit tendency to cluster memory for information items about a set of married couples according to the marital relationship. In other words, information items about married individuals were more likely to be recalled together than information about non-married individuals.

This work on the relational-interdependent self-construct drew partly from conceptualizations of relationships in terms of general types or categories, such as communal and exchange relationships (Clark & Mills, 1979). Work on communal and exchange relationships has generally not addressed notions of automaticity. One exception to this, though, is research showing the automatic activation of different goals — namely, other-focused versus self-focused goals — among communal- versus exchange-oriented individuals, respectively, when nonconsciously primed with the concept of power (Chen, Lee-Chai, & Bargh, 2001). Such automatic goal effects reflect the distinct power-goal associations of individuals with different relationship orientations. Other researchers have conceptualized relationships, including communal and exchange ones, as basic categories that people use to organize social stimuli (Fiske, 1992; Senkides, Oomen, & Reis, 1993). For example, research on relational models theory (Fiske, 1991, 1992), noted earlier, has shown that people are more likely to confuse people (e.g., calling someone by someone else’s name) with whom they share the same kind of relationship among the four basic relational models, implying that these four models are used as bases for categorization (Fiske, Haslam, & Fiske, 1991).

In other research, participants who were asked to recall and list the name of every person with whom they had interacted in the prior month showed clustering based on the four relational models; that is, participants tended to recall people with whom they share the same kind of relationship consecutively (Fiske, 1995). Although people may consciously think about their relationships in terms of the four relational models, it is argued that the use of these models as a basis for categorizing the social world often occurs automatically, efficiently, and without awareness or intention (Fiske & Haslam, 1996; Haslam & Fiske, 1993). Indeed, both confusions and clustering in recall can be seen as unobtrusive, implicit measures of categorization.
Automatic Affect and Evaluation

We now turn to evidence for automatic affect and evaluation. Although the vast majority of research has focused on the assessment of global, positive and negative affect and evaluation, we also describe some evidence for the automatic elicitation of discrete emotions.

A key assumption of the transference approach is that significant-other representations include affect-laden material that reflects the emotions and evaluation people associate with their significant others (Andersen & Glassman, 1990). Thus, the activation of a significant-other representation should automatically elicit the affect and evaluation. Indeed, numerous studies have shown that participants evaluated an anticipated interaction partner more favorably when the partner activated a representation of a positively rather than negatively evaluated significant other (e.g., Andersen & Banis, 1984; Andersen et al., 1990; Berk & Andersen, 2000). This was not observed when the partner was characterized by a yoked participant’s descriptors about a positive or negative significant other. While the evaluation measures used in this research were self-report, the processes that underlie these evaluation effects – namely, the activation and use of a significant-other representation – are known to be automatic, as described earlier.

Further evidence for the automatic affective consequences of an activated significant-other representation can also be found outside of the transference realm. In one set of studies, for example, participants were subliminally exposed to the names and faces of either significant others or of themselves and then asked them to evaluate neutral Chinese ideographs (Banis, 1990). The hypothesis was that more positive evaluation should be automatically elicited upon the activation of representations of significant others compared to the self because people tend to idealize their significant others (Murray, Holmes, & Griffin, 1998), and self-representations contain more negative information. As predicted, participants evaluated the ideographs more positively in response to significant-other priming than to priming of their own name and face.

To capture the automatic affective consequences of the activation of a significant-other representation more directly in the transference paradigm, researchers have subliminally assessed participants’ facial affect during exposure to descriptors about an upcoming interaction partner (Andersen et al., 1996). These descriptors were derived from the participant’s own or an upcoming interaction partner(s). This pattern of representation—consistent affect was not seen in a control, no-transference condition in which the descriptors were derived from a yoked participant’s descriptors about a positive or negative significant other (for related evidence, see Berenson & Andersen, in press).

In a different study, participants were likewise exposed to descriptors about an upcoming interaction partner who resembled the participants’ own or a yoked participant’s positively evaluated significant other, while the interpersonal role of the anticipated partner vis-à-vis the participant was manipulated (Baum & Andersen, 1990). That is, the participant’s role (expert or novice) was either congruent or incongruent with the role typically occupied by the participant’s significant other (who was an authority figure). Presumably, role incongruence is unpleasant because it signals that goals typically pursued with the significant other are unlikely to be satisfied. Indeed, activating participants’ own significant-other representation in the context of role incongruence (vs. congruence) led to an increase in dysphoric mood. No such difference emerged when transference was not evoked (i.e., when the partner was characterized with a yoked participant’s significant-other descriptors). As in most research on transference, the activation of a significant-other representation in the transference condition involved a goal-dependent form of automaticity, implying a conscious, instigating goal, and yet the presumed spread of activation to the interpersonal role of the significant other and the goals associated with this role was nonetheless automatic. That is, it is likely that the interaction between the activation of a significant-other representation and role congruence versus incongruence, even though occurring more downstream in the processing sequence, nonetheless occurred without participants’ intention or awareness.

Also in the transference domain, research focused on emotional responding has evoked transference among participants with an ideal or ought self-discrepancy (Higgins, 1987) from the standpoint of a parent (Brenk & Andersen, 2005). When the descriptors about an upcoming interaction partner resembled the relevant parent and thus activated the representation of this parent, the ideal or ought self-discrepancy from this parent’s standpoint was also activated. As a result, ideal- and ought-discrepant participants exhibited the affective responses predicted by self-discrepancy theory; ideal-discrepant participants reported increases in depressive mood, whereas ought-discrepant participants showed increases in hostility and decreases in calm. Once again, these affective states occurred in the context of transference, which was evoked by the goal-dependent, automatic activation of a significant-other representation. Thus, the consequent spread of activation from the parental representation to the relevant standard and self-discrepancy can be presumed automatic (Andersen et al., 2005).

Research on relational schemata has also produced evidence for automatic affective responses. For example, just after reading a short passage describing a usually permissive situation, Roman Catholic women were shown subliminal images of Pope John Paul II with a disapproving expression, which were intended to activate relational schemata representing disapproval from a significant other (Baldwin et al., 1990). As a result, these women reported higher levels of negative affect (i.e., anxiety and tension) relative to a control group. Although these women were aware of the affective end-products of the subliminal activation of their Pope relational schema, the activation itself could be presumed automatic in a preconscious sense.

In a different set of studies, female participants underwent a conditioning procedure whereby particular stimuli (e.g., computer tones) were repeatedly paired with acceptance- or rejection-related thoughts (Baldwin & Main, 2001). Later, the conditioned stimuli were presented as cues for the activation of
A relational schema reflecting acceptance or rejection while female participants had a stressful interaction with a male confederate. Participants high in public self-consciousness were affected by the cued activation of relational schemas; relative to a control group, they reported greater anxiety-related affect when rejection versus acceptance condition stimuli were presented during the interaction. Once more, although these participants consistently reported on their affect, they presumably were not aware of, and did not consciously intend, the activation of the relational schemas that produced this affect.

Affect and emotion have long been central to attachment theory (Bowlby, 1969), and investigations of the automaticity of attachment-related affect are growing in number. A particularly good example is research on secure base schemas, which can be characterized as relational schemas comprised of positive beliefs about the self and significant other, linked via an interpersonal script designating positive expectations about the availability and responsiveness of the other in times of stress (Mikulincer et al., 2001). It was hypothesized that given the positive connotations of their components, secure base schemas should be a source of positive affect, implying that when a secure base schema is activated, positive affect should automatically ensue. To test this, secure base schemas were activated by subliminally exposing participants to pictures conveying security (e.g., a mother holding her baby). Participants were then asked to evaluate various kinds of neutral stimuli. Across several studies, participants exhibited more positive affective reactions to the neutral stimuli after a secure base schema had been subliminally primed as compared to after a neutral prime or no prime. Moreover, the link between activated secure base schemas and positive affect held under both neutral and stressful conditions, whereas priming positively toned, but attachment-unrelated schemas only produced automatic positive affect under neutral conditions.

In terms of attachment-related evaluations, recent research has adapted the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) to assess attachment differences in the nature of automatic evaluations elicited upon thinking about a significant other (Zayas & Shoda, 2005). Among various findings, this work showed that higher levels of secure attachment at both the general and specific level were associated with more automatic positive evaluations of relationship partners in a version of the IAT using the name of the relationship partner as a basis for categorization (e.g., John vs. not John).

### Automatic Expectations of Acceptance or Rejection

Among the most basic and fundamentally relational of perceivers' beliefs and perceptions about their significant others are expectations about a significant other's acceptance or rejection of the self. Research on several of the social-cognitive approaches reviewed earlier suggests that such expectations are often elicited automatically.

The transference approach assumes that expectations about a significant other's acceptance or rejection are stored in memory as part of the linkages binding significant-other representations to knowledge reflecting the relevant relational self (Andersen & Chen, 2002). Research has shown that when a perceivers's significant-other representation is activated in a goal-dependent, automatic fashion in an encounter with a new person, activation spreads across these linkages, thereby eliciting stored acceptance/rejection expectations (Andersen et al., 1996). As a result, the perceivers come to expect the new person to accept or reject him or her just as the significant other typically does (see also Berenson & Andersen, in press).

As described earlier, interpersonal expectations lie at the heart of the interpersonal scripts that define relational schemas (Baldwin, 1992). These expectations take the form of "if-then" contingencies that designate specific responses to the self (e.g., "If I seek help, my significant other provides it"). or more global, accepting or rejecting responses (e.g., "If I succeed, my significant other accepts me"). The relational schema approach assumes that the activation of a relational schema elicits automatic, schema-consistent expectations about others. For example, the study described earlier in which participants were quicker to respond to prime-target pairings that reflected expectations of contingent acceptance after a relational schema involving a contingently-accepting (vs. noncontingently accepting) significant other shows that such expectations are automatically activated (Baldwin & Sinclair, 1996).

Attachment working models of others are also comprised in large part with expectations regarding the responsiveness of significant others (Bowlby, 1969; Hazan & Shaver, 1987). Research adopting a relational schema approach has documented the automatic nature of such attachment-related expectations. This research hypothesized that chronic attachment working models are associated with distinct, if-then expectations about others (Baldwin, Fehr, Keedlin, Soedel, & Thompson, 1993). Specifically, secure participants possess relational schemas with if-then expectations designating positive responses from significant others, whereas insecure participants possess ones with negative interpersonal expectations. In this research, a lexical decision task was used to show that participants with chronic, secure working models were able to identify positive outcome words (e.g., support) quicker after presentation of an interpersonal context prime (e.g., "If I depend on my partner, then my partner will..."), whereas participants with insecure models were faster to identify negative outcome words (e.g., leave).

As a final example, research on rejection sensitivity has produced wide-ranging evidence for the automatic elicitation of rejection expectations. Indeed, the very definition of rejection sensitivity involves the automatic tendency to expect and perceive rejection from others, as already noted (Downey & Feldman, 1986). To illustrate, research has found that individual differences in rejection sensitivity were positively associated with the tendency to overestimate a relationship partner's dissatisfaction and lack of commitment to the relationship. In another study, participants were confronted with an ambiguously rejecting situation—that is, they were not told why an upcoming interaction partner who was given information about them suddenly declined to participate in the interaction. Under such circumstances, rejection sensitivity predicted a higher likelihood of interpreting the situation in terms of rejection (Downey & Feldman, 1986). Such differential expectations of rejection as a function of individual differences in rejection sensitivity.
participants who failed at a task evaluated themselves in a manner consistent with how they assumed they would be evaluated in the activated relationship; namely, participants in the contingently-accepting other condition evaluated themselves more negatively than those in the non-contingent condition.

Turning to the attachment-theoretical approach, attachment working models of the self are, by definition, comprised of positive or negative conceptions of the self. A large body of research has documented associations between attachment styles (i.e., chronic working models) and the positivity or negativity of self-evaluations (Griffin & Bartholomew, 1994; Hazan & Shaver, 1987). Among all of this work, research using implicit measures to assess positivity or negativity in the self provides the most compelling evidence for the automatic nature of the self-evaluations that comprise working models of the self. In such work, participants are not even aware that their self-evaluations are being assessed, rendering it safe to conclude that these self-evaluations are not the product of conscious intention.

For example, the Stroop color-naming task has been used to assess the positivity and negativity of the self-evaluations of participants with secure, anxious-ambivalent, or dismissing attachment styles (Milinovich, 1995). In this task, participants named the printed color of positive and negative trait words that either were or were not self-relevant, as determined on the basis of ratings participants made in a pretask session. Self-descriptive traits should yield longer color-naming latencies because the trait’s high accessibility interferes with the color-naming process. The results showed that secure individuals pass an unbalanced views of themselves, with naming latencies slower for both positive and negative self-relevant traits compared to irrelevant ones. In contrast, anxious-ambivalent individuals were slowest to name the color of negative, self-relevant traits, while dismissing individuals were slowest for positive, self-relevant traits.

Further evidence for the automaticity of attachment working models of the self comes from research on security-based self-representations, which refer to aspects of the self developed in the context of security-enhancing interactions with attachment figures (Mikulincer & Shaver, 2004). Such representations should be indirectly activated when the attachment system is activated. Supporting this, research has found that when the attachment system was activated via a threat induction, participants who scored low in attachment anxiety (i.e., with chronic secure working models) described themselves using attributes that they had used earlier to characterize their security-based self-representations. Thus, the threat induction heightened the accessibility of attributes that these participants associate with these representations, shifting their self-descriptions accordingly.

Research on the relational-interdependent self-construal construct also provides evidence for the automaticity of self-related perceptions. For example, one set of studies examined perceptions of self-other similarity as a function of individual differences on the Relational-Interdependent Self-Construal scale. It was hypothesized that high-RISC individuals, who define themselves in terms of their close relationships, should be especially motivated to see similarities between their own and close others’ self-definations, as similarities imply relationship openness and harmony (Cross et al., 2002). To test this, the researchers used unobtrusive measures of perceived self-other similarity, measures that made it
goals people typically pursue in the context of their relationship with a significant other become part of the relational dynamics between the self and other and thus are stored in memory in the linkages that bind the relevant significant-other representation to the relevant relational self (Andersen & Chen, 2002). Thus, when a perceivers significant-other representation is activated in an encounter with a new person, the goals associated with this other are accordingly activated. As a result, the perceivers goals thus typically sought with the significant other, only with the new person.

A fundamental need people have in relation to significant others is that of connection and belonging. Research has shown that the activation of a positive rather than a negative significant-other representation led participants to report a desire to approach (and not to avoid) an upcoming interaction partner (Andersen et al., 1996; Berk & Andersen, 2000). Just as they typically seek to approach the relevant significant other to be close and disclosing, and to maintain the relationship they pursue this with the partner, a phenomenon evoked by the automatic activation of a significant-other representation, though assessed via self-report. Moreover, this is distinguishable from evaluation. That is, people who have been harmed by a significant other but still love this other, as in the case of abuse by a parent, will recall from the motive to disclose in a relevant transference (Beereck & Andersen, in press).

Building on findings from both the transference and relational schema approaches, recent research has examined the effects of automatically activating a significant-other representation on goal pursuit outside of the transference context. Specifically, several studies have shown that just thinking about a significant other (or being subliminally exposed to this persons name) automatically activates relationship goals. Individuals primed with a significant other behaved in line with goals that they previously reported associating with the other (Fitzsimons & Burgh, 2000). For example, participants who had the goal to please their mother and who were primed with their mothers later achieved higher performance on a verbal achievement task, without exhibiting any conscious awareness of this or intent to do so. Similarly, activating a significant-other representation has been shown to guide self-regulation through the activation of the significant other's goals for the self (Moretti & Higgins, 1999; Shah, 2003a). Significant others, once represented mentally, can in a sense "watch us from the back of our minds," as internal audiences, evoking goals and standards that guide individuals behavior in line with the significant other's desires (Andersen & Chen, 2002; Baldwin & Holmes, 1987; Moretti & Higgins, 1999, Shah, 2003a). Ideal and ought discrepancies from the standpoint of a significant other are theorized to embody the goals or standards that the significant other holds for the self, and as such can guide the selfs behavior (Moretti & Higgins, 1996). Indeed, in a transference context, ideal-discrepant participants exhibited promotion-oriented self-regulatory strategies, whereas ought-discrepant participants showed evidence of prevention-oriented strategies (Bennett & Andersen, 2005).

Likewise, further evidence for the automatic influence of significant others' goals for the self has been shown outside of the transference context. In one set of studies, for example, participants who were subliminally primed with the names of
their significant other reported being more committed to their significant other’s goals, and behaved more in accordance with the other’s goals (Shah, 2003a). Furthermore, using response-latency measures, this research provided strong evidence for the automatic link between goal constructs and significant-other representations; for example, participants who felt their partner cared about their academic achievement responded more quickly to the achievement-related target words that were immediately preceded with father-related primes words. A related set of studies showed that participants’ appraisals of the difficulty of attaining a goal were colored by their beliefs about the significant other’s expectations about their goal attainment (Shah, 2003b).

Finally, recent research on attachment has shown the automatic activation of attachment-related goals (Gillath, Mikulincer, Fitzsimons, Shaver, Schachner, & Bargh, in press). One study showed that subliminally priming the name of an attachment figure increased pursuit of proximity-enhancing goals. That is, they self-disclosed more and more quickly to a new person. In another study, subliminally exposing participants to the name of a significant other affected the accessibility of goal words related to secure, anxious, or avoidant attachment, depending on the attachment relationship. Participants who scored high on attachment avoidance and low on attachment anxiety took longer to identify secure goal words in a lexical decision task after being primed with a secure relationship, perhaps because such a relationship elicited conflictual feelings or resistance in such individuals (Gillath et al., in press).

**Automatic Self- and Relationship-Protection**

Thus, people can regulate their interpersonal behavior to fit overarching goals linked with an activated significant-other representation without need for conscious involvement in the activation process. Two motivations of great importance in relationships are self-protection (when the self is threatened) and relationship-protection (when the relationship is threatened). We now turn to a variety of evidence suggesting that these motives and their self-regulatory functions may be evoked and function automatically.

Research on transference has provided clear evidence for automatic self- and relationship-protective motives. For example, when the representation of a negative significant other was activated, leading participants to negatively evaluate the relational-self qualities associated with the negative other that arose in their working self-concepts, participants responded by enhancing the positivity of their evaluations of their non-relational-self attributes (Hitchley & Andersen, 1995; Nierenberg & Andersen, 2004). Presumably, this response reflected an attempt to protect the self in the face of the threat delivered by the influx of negative, relational-self attributes into the working self-concept. Although this research used self-report measures, the effect itself may nonetheless occur automatically (Andersen et al., 2005).

In terms of relationship-protective motives, research on transference has relied on a different methodology. Specifically, research has shown that when exposed to negative features of a positive significant other in transferences, participants tend to respond with expressions of pronounced positive affect—in their facial expressions. Because these facial expressions arise virtually immediately, they presumably transform the negative valence into a positive one relatively automatically. Such a response presumably reflects an effort to protect the positivity of the image of the significant other and of the relationship in the face of the threatening, negative information (Andersen et al., 1998; for a related effect, see Bernsen & Andersen, in press).

The motivation to protect the self from interpersonal threat is also at the core of rejection sensitivity, and has been theorized to guide behavior in an automatic fashion. People high in rejection sensitivity are susceptible to a wide range of negative interpersonal outcomes that are related to self-protective mechanisms. For example, their anxiety about being rejected by others causes them to behave more aggressively (Downey, Feldman, & Ayduk, 2000) and experience less satisfying relationships (Downey & Feldman, 1996). Although no research has directly examined people’s awareness of these effects, it seems unlikely that people high in rejection sensitivity are aware of the influence of defensive, self-protective motives on their relationships.

Interestingly, the extent to which people are generally “good self-regulators” has been found to moderate the negative effects of rejection sensitivity on interpersonal outcomes (Ayduk et al., 2000). Rejection-sensitive people who can control their attention to delay immediate gratification do not suffer the same interpersonal ill. The extent to which people high in rejection sensitivity have automatized these self-control behaviors is as yet undetermined. It is conceivable that with enough practice and experience, people high in rejection sensitivity could learn to automatically inhibit the negative thoughts and habitual responses that follow from rejection, perhaps based on extensive practice of delay of gratification over time. However, it is also conceivable that this type of self-control process may require conscious attention and control to overcome the automatic, self-defensive response (also see Yovetski & Bushnell, 1994).

In related research, more direct evidence exists for the role of automatic self-protective motivations in response to interpersonal threat. According to the dependency regulation model, when people feel secure, they exhibit relationship-protective responses, viewing their partners more positively and seeking increased closeness (Murray, Holman, & Griffin, 2000). Murray, Holman, Griffin, Bellavia, & Bae, 2001). When people feel rejected, however, they engage in self-protective strategies, decreasing their attachment to their partner and increasing self-reliance. Recent research has tested a longstanding assumption in this model (see Murray, Rose, Griffin, & Bellavia, 2003)—namely, that these self- and relationship-protecting mechanisms occur outside of consciousness (DeHart, Pelham, & Murray, 2004). Two studies used “the name letter effect” (Nuttin, 1985) to examine participants’ evaluations of their romantic partners. The name letter effect refers to people’s preference for letters found in their own name, thought to reflect people’s implicit self-evaluations. Extending this reasoning to evaluations of others, DeHart and colleagues reasoned that people’s preference for letters found in the names of their romantic partners could be seen as implicit evaluations of their romantic partners. For people with low self-esteem, implicit evaluations of their partners (e.g., their preference for letters from their partners’ names) were
contingent on the current success of their relationship. By contrast, people with high self-esteem had positive implicit evaluations of their partners even when things were not going well in their relationship. These findings provide initial evidence that people can automatically self-regulate to fulfill higher-order self-protective and relationship-protective needs, in line with the highly practiced and frequently pursued motivational responses to threat.

Automatic responses to interpersonal threat can also play a role in parent-child relationships. Parents who perceive themselves as relatively low in power relative to their child have been shown to have chronically accessible constructs related to dominance and power (Bogental, Lyon, Knutst, & Cortez, 1997). These parents feel threatened by their lack of power in the relationship, and as such they respond by overactivating thoughts of power and control. With sufficient cognitive capacity, these power-threatened parents can regulate these thoughts and feelings, and can present themselves as being in control. However, under conditions of cognitive load, the threat of loss of power leads immediately to dominance infer- ences and corresponding cognitions and behaviors. This mix of automatic threat and defensive overcompensation may result in a negative parenting style and lead to problems within the parent-child relationship.

Similarly, threat can automatically elicit different affective, motivational, and behavioral responses from people who vary in attachment anxiety and avoidance (Mikulincer, Gillath, & Shaver, 2002). Mikulincer (1988) delineated self-regulatory strategies that characterize people who are chronically high versus low in attachment anxiety and avoidance. People high in anxiety are theorized to use strategies that hyperactivate the attachment motivational system, leading them to pursue security and closeness. People chronically high in avoidance are theorized to use strategies that deactivate the attachment motivational system, leading them to pursue self-protective strategies such as self-reliance and emotional distance.

For example, they encode less information about attachment experiences as they occur (Finley, Garner, & Shaver, 2000), and suppress thoughts of potentially threatening interpersonal outcomes (Finley & Shaver, 1997). Both of these levels of self-regulation strategies help those chronically high in avoidance to feel attachment-related distress and inhibit motivations to seek comfort from attachment figures, and presumably do so in an automatic fashion.

Further evidence has accumulated that supports the role of self-regulatory strategies in adult attachment relationships. For example, individuals chronically high in attachment anxiety overestimate their similarity to attachment figures (Mikulincer, Oraib, & Lavitzl, 1988), and hold a negative view of themselves (Mikulincer, 1988). By contrast, individuals chronically high in attachment avoidance underestimate their similarity to attachment figures and hold an unusually positive view of themselves. These tendencies were found to be exacerbated under conditions of negative affect and distress, and were related to desires to win others' approval (for those chronically high in anxiety) and to validate a sense of self-reliance (for those chronically high in avoidance), thus emphasizing the motivational nature of these self-perceptual differences. Given that these effects stem from chronically accessible constructs, they are likely to function at a preconscious level of automatization, requiring no conscious triggering.

A core component of Bowlby's (1969) original attachment theory and more recent adult attachment theories (e.g., Hazan & Shaver, 1987) has been that the attachment motivational system performs the majority of its functions outside of conscious awareness or control. That is, patterns set in childhood are thought to be habitual and automatized early on, allowing attachment working models to shape behavior. The working models themselves are thought to be stored representations of past interactions, and enact their influence on behavior at a "preconscious" level (Bowlby, 1980). Thus, the self-regulatory strategies reported above—such as suppressing negative thoughts or underestimating similarity to attachment figures—are theorized to function automatically. That most of the findings reflected the effects of chronic attachment working models supports these assumptions. However, more direct support can be found in recent research using a variety of social-cognitive techniques to measure the workings of the attachment motivational system.

For example, Mikulincer et al. (2002) found that people respond to threat by activating mental representations of attachment figures automatically—that is, with little or no effort, awareness, and intention. In some studies, threat is subliminally presented, providing some empirical evidence for the supposition that chronic attachment differences likely manifest themselves as a form of preconscious automatization. Automatically bringing to mind thoughts of attachment figures presumably provides feelings of comfort and reduces negative affect. Attachment anxiety causes a hypervigilance of this strategy, with attachment figure representations becoming elicited more readily, while avoidance lessens the accessibility of those representations. Thus, automatic self-regulatory strategies depend on past relationship experiences and dynamics; that is, people pursue the goals and strategies that they have relied upon in the past to provide them with security, regardless of whether these are the most appropriate strategies for the current interpersonal environment.

**Automatic Effects on Interpersonal Behavior**

Finally, among the most provocative advances in the automatization domain over the past decade is research on the automatic social behavior (Barth, 2005; Disselkamp, & Barth, 2001). In this section, we describe evidence for automatic interpersonal behavior in close relationships.

Research on transference suggests that when a significant-other representation is activated in an encounter with a new person, along with the beliefs and expecta- tions stored as part of this representation, it automatically instigates a behavioral confirmation cycle. In one such study, for example, each participant (the perceivers) was exposed to descriptions about another participant (the target) with whom he or she then had an audiotaped conversation (Beck & Andersen, 2000). The descrip- tions bore no actual relation to the target, but instead were derived from descriptions that the participant or a yoked participant had generated in a pretest session to characterize a positive or negative significant other. As usual, the descriptions derived from participants' own significant-other descriptors elicited transference—that is, the activation of the corresponding significant-other representation.
Most important, the pleasantness of affect in participants' undistracted, conversational behavior was coded by independent judges and the results offered evidence for behavioral confirmation in transference. That is, the target ended up expressing more pleasant affect when he or she resembled the perceived positive rather than negative significant other; no such effect was seen in the yoked, no-transfer conditions. Presumably, the affect stored as part of perceivers' representations of positive and negative significant others, respectively, was activated in transference, in turn coloring perceivers' behavior and ultimately leading targets to respond in kind. As usual, the activations of a significant-other representation in the transference condition was automatic in a postconscious sense. Accordingly, perceivers in this condition were unaware of, and did not consciously intend to produce, the behavioral effects that ensued.

Behavioral confirmation also lies at the heart of the Michelangelo phenomenon (Drigotas, Russbult, Wieselgren, & Whitton, 1999). In this phenomenon, a close partner perceives the self in ideal terms (i.e., partner perceptual affiliation) and then acts on his or her perceptions of the self's ideal (i.e., partner behavioral affiliation), leading the self to confirm the ideal. Thus, just as Michelangelo sculpted ideal forms from blocks of stone, relationship partners help sculpt each other's ideal forms by acting toward each other in ways that affirm these ideals. Across several studies, evidence for the Michelangelo phenomenon was found among both dating and married couples (Drigotas et al., 1999). Moreover, this research showed that the phenomenon has positive effects on couples' well-being (e.g., intimacy). Although this work relied on concious, self-report measures, the researchers argued that, in the course of the actual, day-to-day behavioral dynamics of relationships, the processes that underlie the Michelangelo phenomenon may involve either elaborative, conscious processes or automatic ones. Regarding the latter possibility, it seems quite likely, for example, that perceptions of a relationship partner in terms of that partner's ideals may over time become preconscious; relationship partners come to register these perceptions as objective reflections of reality.

Research on rejection sensitivity has also documented a form of behavioral confirmation between romantic partners (Downey, Fretta, Michaelis, & Kloosterman, 1999). This research has examined how the anxious rejection expectations of high rejection-sensitive individuals manifest in their behavior and ultimately lead their partners to respond in ways that confirm rejection expectations. Specifically, romantic partners were videotaped while discussing an unresolved relationship issue. Negative behaviors (e.g., making a demeaning comment about one's partner) during the discussion were then coded by independent judges. High rejection-sensitive women exhibited more negative behavior than low rejection-sensitive women, and the partners of the former group accordingly reported a greater increase in pre- to post-discussion anger. Mediation analyses showed that high rejection-sensitive women's negative behavior accounted for a significant portion of the variance of the effect of women's rejection sensitivity on the increase in their partners' anger.

Because rejection sensitivity involves the automatic tendency to expect more rejection than warranted, such automatic expectations are thought to be what trigger the behavioral cycle that results in a self-fulfilling prophecy for high rejection-sensitive individuals. Hence, the above findings can be taken as evidence that the anxious rejection expectations that define rejection sensitivity elicit automatic, expectancy-consistent behavior. Indeed, research indicates that self-fulfilling prophecy effects need not result from consciously held beliefs and expectations (e.g., Chen & Bargh, 1997). In addition, that the behavioral data described above were obtained from coders' ratings of videotapes of the spontaneous behavior of romantic partners during a conflict discussion—partners who were aware that they were being videotaped but unaware of what was being coded—strongly suggests the automatic nature of rejection-sensitivity effects on behavior.

Observations of spontaneous, dyadic behaviors of relationship partners also serve as an evidentiary basis for automatic, attachment-related behaviors. Research assessing such behaviors suggests that chronic attachment working models automatically give rise to behavioral tendencies reflecting the beliefs, assumptions, and concerns comprising these models. For example, the spontaneous partner-seeking and support-giving behaviors of members of heterosexual dating couples were unobtrusively recorded after the woman was placed in a stressful situation (Simpson, Rhodes, & Nelligan, 1996). The results showed that women with chronic, secure working models of attachment sought more support for the more anxious they felt, whereas women with avoidant working models did the opposite. Secure men offered more support the more their partners exhibited anxiety, whereas greater anxiety in their partners was linked to less support among avoidant men. Presumably, participants automatically perceived and interpreted the experimental situation through the lenses of their chronic attachment working models, which then gave rise to the distinct behavioral tendencies they exhibited.

Still clearer evidence for preconscious automatic effects of attachment working models on behavior can be found in research using subliminal priming techniques to assess the link between attachment security and compassion and altruism (Mills, Zillman, & Crawford, 2005). For example, one study showed that subliminal activation of attachment-security representations not only led participants to report higher compassion, but also led them to actually agree to do aversive tasks on behalf of an alleged other participant. Finally, the research described earlier on the automatic activation of attachment-related goals (Gillath et al., in press) offers another example of automatic, attachment-related behavior effects. Recall that this work showed that subliminal priming of the name of an attachment figure led participants to self-disclose more and quicker relative to neutral control conditions.

INTEGRATION AND BROADER CONSIDERATIONS: THE PERPETUATION OF THE PAST INTO THE PRESENT

We have described evidence for various forms of automaticity across a wide range of relationship processes and phenomena. In the spirit of integration, we now draw closer attention to a recurring theme in much of this work—namely, assumptions and tendencies learned in past or in current relationships with significant others.
are often perpetuated and re-created in present-day encounters with new others. It is no coincidence that evidence for automaticity in close relationships comes from research conducted in the framework of social-cognitive approaches. Such approaches share the core assumption that aspects of prior relationships are mentally represented in some form and thus, when activated, can exert automatic, assimilative influences. In line with such approaches, we suggest that tendons learned in prior relationships "live on" in relational structures in the mind. This allows them to exert continuing, automatic influences within and beyond these relationships themselves, and even if these relationships end.

Despite differences in the exact assumptions and methods underlying research across different areas, as well as in the particular variables of automatically demonstrated, a feature common to all automatic processes is that precisely because they occur in the absence of individuals' awareness, intent, and control, and/or with little expenditure of cognitive resources, they are readily perpetuated. That is, they are strengthened with repetition and practice (even if subtle variations occur each time), rendering them more likely over time to find their way into present-day interpersonal encounters. In short, automaticity may lie at the heart of the perpetuation and re-emergence of previously-experienced relationship processes and phenomena.

The notion that relationships from the past are often perpetuated and re-created is central to nearly all of the social-cognitive approaches we reviewed. For example, transference refers to the very phenomenon whereby assumptions and tendencies from prior relationships with significant others re-surface in relations with new others, and research has shown that this occurs by virtue of the activation of significant-other representations and associated relational schemas. Attachment working models of the self and others are the basis for the assumption that early experiences with attachment figures shape individuals throughout the life span. Interestingly, recent work suggests that transference may constitute a primary mechanism by which attachment working models exert their influence over time (Andersen, Barto, Berenson, & Koenckeman, 2006; Brumbaugh & Fraley, 2008). The relational schemas model suggests that expectations about new others' responses to the self are derived largely from the activation of past if-then dynamics stored in relational schemas. Rejection-sensitive individuals automatically tend to expect, perceive, and overreact to rejection cues in a manner that serve to re-create prior rejection experiences, thus cementing these early tendencies.

Though less obvious, notions of perpetuation and re-creation can also be found in IOS research examining how a significant other's befriending of an outgroup member can influence the nature of the self. In particular, when a significant other befriends an outgroup member and thus incorporates this outgroup member into his or her self-concept, the fact that a perceivers has included the significant other into the self therefore leads the perceiver to also incorporate the significant other's favorable evaluations of the outgroup (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). In other words, the outgroup member can be seen as included in the perceivers' self because the significant other, who is already included in the self, has included the outgroup member. This lays the foundation for the perceiver to befriend an outgroup member himself or herself, thus perpetuating, in some sense, the significant other's friendship.

In the relational-interdependent self-construal approach, the automatic, information-processing tendencies of individuals who hold such a self-construal appear to maintain the very relationships in which their self-construal is grounded. For example, research has shown that holding a relational-interdependent self-construal is associated with perceiving a relatively new relationship partner as having the relationship positively (Cross & Gurev, 2005). Research has also shown that after a brief interaction with a high relationally-interdependent individual, participants were more likely to rate their interaction partners as responsive and self-disclosing than those who interacted with a low relationally-interdependent person (Cross et al., 2000). Moreover, the former group rated their relationship with their partner more positively. Thus, highly relationally-interdependent individuals perceive and behave in ways that help perpetuate the very relationships that define them.

At this point, a reader may be left with the impression that much of what happens in close relationships does so automatically. Automaticity undermines how people think and feel about their significant others and themselves, whether people expect to be accepted or rejected, how they regulate themselves as they strive to attain goals associated with significant others or to protect themselves and their relationships, and, finally, how they behave toward others. Moreover, we must emphasize that this wide range of automatic processes and phenomena is likely to be maintained over time, repeatedly re-surfacing in new interpersonal encounters.

Nonetheless, we would strongly argue against the conclusion that relationship processes and phenomena are always automatic. People spend a great deal of time thinking about the people they love, as well as people they are bound to but may be indifferent about or even loathe. People with, plan, dream, scheme, rejoice, grieve, worry, approach, and avoid in the content of their relationships. Much of this occurs fully consciously and with deliberation. In fact, we assume that when not aware of most of the automatic processes we have described, and if armed with adequate time and cognitive resources, as well as enough motivation to refer, people should theoretically be able to exert enough control over these processes to circumvent and override them. This assumption is consistent with borrowing and data suggesting that people are concerned with biases or the "contextualization" of their responses, even through their lay theories about what constitutes their responses are often inaccurate (Wilson & Brekke, 1994). This work highlights the fact that even when not unaware of the cues that provided an automatic response, one may still experience the response as unintended—or to use clinical terms, as "ego-dystonic." In this case, the consequences of automatic processes are unwelcome.

But if circumventing or overriding the biases brought on by past relationship experiences is possible, why are relationship patterns so notoriously difficult to change? Indeed, it might be summarized that because people's emotional and motivational outcomes hinge so crucially on the nature of their close relationships, they could be especially likely to have awareness and to summon the resources and
motivation necessary to exert control over relationship dynamics that they want or end. However, within existing relationships, we suggest that the level of interdependence on experiences with significant others, the very fact that one's own outcomes depend on the other, can drain cognitive resources and make it even more likely that automatic processes will hold sway. And, in the course of day-to-day encounters with new others (who are potential relationship partners), it is often not feasible or practical to carefully deliberate about who one is dealing with and how one ought to respond. Finally, people's inherent cognitive capacity limits their ability to make such encounters especially likely to be processed in terms of prior relationships. In short, it may be that time, resources, and motivation to solicit in good supply in the course of daily social life.

On a different note, not all relationships are maladaptive or problematic, and hence people may be motivated to leave well enough alone. And, even when relationships are painful and averse, sometimes "the devil you know" may be easier to face than "the devil you don't." That is, people may place a premium on predictability and doing what they know, even if it means ending up with the suboptimal or even harmful relationship patterns and outcomes they have experienced in the past. Thus, the familiarity of the relevant interpretations, affective responses, expectations, motives, self-regulatory efforts, and the like enables in recent or familiar past to perpetuate and re-emerge in the present.

Considering the interplay of automaticity and control in close relationship raises many intriguing issues and questions for future research to investigate. In the broader social cognition literature, researchers have shown that when perceivers are made aware of the potential influence of, for example, an activated trait construct on their judgments, contrast effects may occur (e.g., Hess, Sherman, & Fazio, 1983). That is, perceivers' judgments may contrast away from rather than assimilate toward the trait construct. Can and do analogous contrast effects occur when the activated construct is a relationship structure, such as a significant-other representation, relational schema, or attachment working model? Are there distinct kinds of conscious processes required because of the self is implicated in relationships and because of the generally higher emotional and motivational stakes involved? Of course, when people become aware of the potential automatic influence of their prior relationship tendencies on their present-day social encounters, the preferred or optimal response may not always be to literally cut trust away from these tendencies, but rather it may be best to simply short-circuit and replace them with entirely different responses. Indeed, people may not be sure how much to contrast or correct for the influence of past relationships (e.g., Stajkovic, 1996).

Beyond being aware and having appropriate correction strategies, people clearly need to have motivation and cognitive resources if they are to overcome the automatic influences of past relationships. But how likely is it that such strategies will succeed? If people can override such automatic influences from their past in their present-day interpersonal lives, what are the underlying processes involved? Is it the activation per se of existing relationship structures that is short-circuited or is it merely their use? Do new relationship experiences replace the context of existing relationship structures? Clearly, we are posing many more questions than we can currently answer. The general point is that with ample and growing evidence for automaticity in close relationships, it seems the time has come for search for answers to how and when control can be exerted over the broad constellation of relationship processes and phenomena that unfold automatically.

We begin this chapter by noting the deep fascination people have with the close others in their lives, and this fascination is reflected in the vibrant and growing literature on close relationships within social and personality psychology. As this literature expands still further, it will be of great value to understand more about the precise nature of the mental representations involved in relationship processes, as well as to ask questions about automaticity increasingly carefully and systematically. Doing so will build our knowledge about when automaticity is likely to occur and when it is not, and about the conditions that are likely to facilitate mindful, deliberative processing in relationships, given that there are times when this would be valuable (and even life-saving) to the individual and/or to the relationship. Put simply, it remains the case that relatively little is known about how people's attempts to become aware of and in some sense to consciously shape their own relational lives may in fact bear fruit. Perhaps this is simply too much to ask and these questions are too big to conquer. Or perhaps such revelations are just around the next few corners in this growing science.

NOTE
1. Although our focus is on the automatic nature of the activation of significant-other representations in the context of transfer, related research has found various forms of evidence for automaticity in other contexts of significant-other representations. For example, early research on significant-other representations found that people are quicker to retrieve features that characterize their significant others relative to various control targets in a free-recall description task (Anderson & Cole, 1990). Such results suggest the chronic accessibility of stored knowledge about significant others. More recent research has found evidence for automaticity in the structure of the "psychological-state theorem" that people store as part of their significant-others representations. These theories reflect people's beliefs and falsehoods about the psychological states that give rise to their significant others' responses (Chen, 2003), see also Shoda & Mischel, (1993). In this research, participants were quicker to retrieve and generate the psychological states that explain the responses of their significant others relative to several control targets. This offers clues to other ways in which significant-other representations may be associated with relatively automatic processing.

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On the Automatic

LISA FELDMAN BARRETT

Any emotion, if it is sincere, is involuntary.

The year is 1846. You are a stagecoach driver. Red sun sets beyond the horizon, the cactusbrush cast long shadows across the dunes, however, is a rattlesnake. Disturbed, the horses struggle to control the stagecoach, careening towards the cacti. But their strength is too great. Life itself has...