# Chapter 3
# An Expectancy-Value Approach to Attachment

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Working models of how the interpersonal world functions translate attachment requirements into emotional reactions and plans for action, from the initiation stage throughout the duration of a close relationship. These working models can be effective in allowing a person to satisfy attachment needs and desires, in which case they may operate without being noticed, but in some circumstances, or for some individuals, they can also produce unforeseen, unwanted, and even contrary outcomes. For example, people who are highly motivated to be close to others, like the anxiously attached, often think and behave in ways that undermine their chances for closeness. Intriguingly, such ironic effects often occur precisely when these individuals are *most* highly motivated to connect. *Why does attachment goal pursuit sometimes become derailed even under relatively favorable circumstances?*

In this chapter we address such questions as this by exploring an approach broadly based on *expectancy-value* theory, which was originally proposed as a framework for understanding attitude formation and change but has since been applied to a number of domains including theories of motivation. Simply put, goal

"…a child is busy constructing working models of how the physical world may be expected to behave, how his mother and other significant persons may be expected to behave, how he himself may be expected to behave, and how each interacts with all the others. Within the framework of these working models he evaluates his situation and makes his plans… How these models are built up and thenceforward bias perception and evaluation, how adequate and effective for planning they become, how valid or distorted as representations they are, and what conditions help or hinder their development, all these are matters of great consequence for understanding the different ways in which attachment behavior becomes organized as children grow older." (Bowlby 1982, p. 354; Man and Hamid 1998)

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commitment—and motivation more generally—is a function of people's expectancies about whether they can achieve the goal (which is based on assessments of self-efficacy and environmental contingencies) and the value they attach to the goal. We believe this perspective can be useful in furthering our understanding of attachment dynamics and especially those related to the formation and maintenance of attachment bonds. In particular, expectancy-value calculations likely influence many processes related to attachment including whether (and how) people initiate new relationships, move from casual to more committed relationships, and persevere in the face of conflict. Moreover, we think this perspective—and the value component in particular—can be useful in unraveling the kinds of paradoxical observations described above.

Although the notion of expectancy-value may be new to attachment, the notion of expectancies is not. In terms of *expectancies* we submit that, as Bowlby indicated in the quotation above, expectancies are at the core of attachment working models. Thinking is for doing, as James (1983/1890) pointed out, and the attachment behavioral system is guided by expectancies about whether attachment needs are likely to be satisfied, and in particular about how various behaviors one might perform are likely to produce satisfying—or unsatisfying—outcomes. Main et al. (1985; Main 1981) emphasized that attachment behavior is goal-directed behavior and from childhood onward we learn the types of behaviors that work—as well as those that do not work—in achieving our goals. In this way, although the content of expectancies may differ from person to person, expectancies function in a normative way to guide attachment goal pursuit.

In our opinion, less attention has been paid to the *value* side of the equation. Certainly, attachment researchers have identified a range of goals, hopes and fears with particular relevance to attachment (e.g., Gillath et al. 2006) including maintaining proximity or closeness to another, seeking emotional or instrumental support, seeking approval, maintaining an affective state of felt security, as well as autonomy, privacy, safety, and control (e.g., Mikulincer 1998). Although we touch on several of these domains, our primary focus in this chapter concerns the more basic valuing of communal goals, broadly stated as seeking closeness, acceptance, and emotional responsiveness from a valued other rather than rejection, abandonment, or poor treatment. Importantly, the point about value that we wish to emphasize is not so much the specific goal, but rather the subjective value associated with the goal, and how subjective value either alone or in interactions with expectancies influence attachment dynamics.

We begin the chapter with an examination of expectancies in the context of attachment working models. As noted, considerable work has been conducted in this area and, for this reason, much of this portion of the chapter is a review and synthesis of this work. Specifically, we discuss people's self-reports of their explicit interpersonal expectancies as well as work looking at cognitive activation patterns that reveal implicit expectancies. We also examine differences in expectances between individuals characterized by different chronic attachment orientations but, consistent with the theme of this volume on normative attachment processes, we highlight work showing variability in expectancies within individuals across their

different relationships, as these patterns of variability reveal much about the nature of working models. In the second half of this chapter, we turn our focus to *value* and how value alone, or in interactions with expectancies, influence attachment goal pursuit. Here, we highlight studies that involve heightened valuing of interpersonal connection (due to the influence of situational factors or physiological factors that increase the incentive salience of the goal object), and discuss how such changes in subjective value interact with expectancies to influence people's willingness to initiate a relationship and persevere in the face of the uncertainty that occurs at the outset of a relationship. Because less work has focused on the notion of subjective value in the context of attachment dynamics, this section will necessarily be more speculative but we hope helpful in laying out an agenda for future work on this topic.

## Expectancies and Working Models

We begin with an examination of the expectancy element of attachment working models (we will hold the valuing component constant by assuming, for the time being, that there is a normative and consistent motive for communal relations with others, an assumption we will revisit later in the chapter). Expectancy is a representation or judgment of what is likely to happen. People can evaluate the likelihood of any number of potential interpersonal events, from being loved and supported, to being hurt, let down, or abandoned, and these judgments can be guided by all manner of information as represented in internal working models.

From a social cognitive perspective—and certainly Bowlby was one of the first great social cognitive theorists—an attachment working model can be thought of as an associative network of mental representations relating to the pursuit of attachment needs. Baldwin (1992) discussed attachment working models as a special type of *relational schema*, or integrated knowledge structure representing self, an interaction partner, and an interpersonal script for typical patterns of interaction between self and other. Collins and Read (1994) elaborated on this approach, identifying four central components of attachment working models: (1) autobiographical memories; (2) generalized expectancies and beliefs; (3) attachment-relevant goals and needs; and, finally, (4) procedural knowledge contributing to strategies and plans. Other researchers (e.g., Shaver et al. 1996; Dykas and Cassidy 2011; Mikulincer et al. 2011) have taken the understanding of working models to new levels, specifying in greater detail the mechanisms whereby models can influence selective attention, attribution, memory, affect, and a host of other attachment-related processes.

Expectancies have long been understood as central to working models. Main et al. (1985) described the process whereby the child builds representations of different attempts to achieve goals, along with the results of those attempts: "If the child's knowledge of relationships is organized by actions and action outcomes, then the internal working model of the infant-parent relationship will be formed

out of a history of the infants' actions, infant-parent interactions, and the fate of the infant's 'attempts and outcomes'" (Main et al. 1985, p. 75). In an important contribution to our understanding of working models, Bretherton (1985, 1990) emphasized the significance of generalized expectancies as scripts for such typical attachment patterns as "When I hurt myself, my mommy always comes to comfort and help me." Other researchers (e.g., Mikulincer et al. 2009; Waters and Waters 2006) have elaborated on this view to propose that the core of security-giving attachment models is the secure base script—that is, of being in distress and reaching out to the attachment figure. It is thought that such secure base scripts are normative, in that we all possess such scripts, but that the content of these scripts differ. More securely attached individuals expect that the attachment figure will respond to such bids with help and comfort, whereas more insecurely attached individuals expect that bids for closeness, dependency or trust will lead to negative outcomes.

One way to conceptualize the interpersonal script is as a chain of smaller cognitive units; specifically, *if...then* behavior-outcome expectancies (e.g., Mischel 1973) that structure a person's experience and behavior. These if…then expectancies essentially reflect conditional probabilities: If I reach out to a loved one (or for that matter to merely a potential relationship partner), then what do I anticipate will happen? Can I trust that the other person will respond positively, with acceptance and caring, or is there a significant risk that the other will be rejecting, abandoning, or hurtful? People are keenly attuned to such learning contingencies: Actions have consequences, and people readily make this connection and store the association for future use. The *if* is normative—we all ask the question—but the *then* can be thought of as reflecting the unique expectancies that a specific person develops over the course of experience.

As Bowlby stated, these working models are subsequently used to guide behavior and emotion, as the person conducts "small scale experiments within the head" (Bowlby 1969, p. 81). If the expectancy is the satisfaction of a valued goal, this produces positive affect, motivation, and behavior to enact the script; if the expectancy is negative, however, this can produce negative affect and avoidance of the unsatisfying script. In line with this, Collins and Read (1994) proposed that an important component of attachment cognition is the appraisal of events for the degree to which they facilitate or thwart the achievement of attachment goals. In a study with particular relevance to this chapter, Collins and Allard (1999) found that when young adults were asked to imagine several types of negative behaviors that their partner might perform, their affective response showed an expectancy-value pattern: Participants' emotional distress was proportional to the importance of the goal being thwarted by the partner.

Before turning to a more detailed examination of expectancies, we would like to draw attention to the issue of stability and variability. One message that has emerged clearly from the broader social cognition literature, and from the study of attachment cognition in particular, is that working models should not be thought of as fixed templates that get imposed holus-bolus on all manner of ongoing experience. Rather, the associative network responds dynamically to a variety of inputs

to activate the subset of representations that are: (i) relevant to the affordances in the situation, (ii) associated with currently salient goals, and/or (iii) cued by other sources (e.g., Collins and Allard 1999). Of relevance to the key issues being addressed in this book, relationship stage may be a particularly important variable in determining the kinds of expectancies that get activated. For example, during the formation stage of an attachment bond, a default representation may be activated, or a representation that is congruent with features of the current situation, because less is known about the partner. By contrast, during the maintenance stage there is likely a wealth of attachment experiences with the partner so that a variety of relationship-specific scripts are available and can be activated depending upon the particular inputs of the situation. This theory explains how both general- and relationship-specific models are reinforced over time but also why one model type might be more relevant during a particular phase of the relationship life-cycle. We return shortly to the interplay between general and relationship-specific models.

## Individual Differences in Expectancies

### *Explicit Expectancies*

Although expectancies function in a normative way to guide attachment related behavior, people's self-reports of what they tend to expect in relationships (i.e., the content of their expectancies) reveal attachment style differences. In some studies people are explicitly asked to report their expectancies in attachment-relevant situations, for example: when seeking closeness from a relationship partner (e.g., "You reach out to hug or kiss your partner"), depending on a relationship partner ("You are in an emergency situation and you need your partner's help"), or trusting a relationship partner ("You share secrets of your past with your partner"). When asked to rate the likelihood of various outcomes, insecurely attached individuals are significantly more likely to anticipate negative behaviors from the partner (e.g., rejection or abandonment) than are securely attached individuals (Baldwin et al. 1993, 1996). Avoidantly attached individuals, for example, are particularly likely to anticipate being hurt after trusting a relationship partner, whereas anxiously attached individuals report particularly negative expectancies in the domain of closeness seeking (e.g., "If I try to get closer to my partner, my partner will reject me" Baldwin et al. 1996; see also Rowe and Carnelley 2003).

In our focus on communal motives, we are particularly interested in expectancies of acceptance versus rejection as these are vital to the central attachment goal of maintaining proximity to the other. Bowlby (1973, p. 23) described a child's experience of the mother's emotional unavailability and rejection as akin to separation. He also noted that parents sometimes use threats to abandon the child as a means of discipline. Bowlby (1973, pp. 208–209) described how such experiences can give rise to expectancies in the form of if…then contingencies: "Some may have learnt that an attachment figure responds in a comforting way only when

coaxed to do so. They grow up supposing that all such figures have to be coaxed. Others may have learnt during childhood that the wished-for response can be expected only if certain rules are kept."

Expectancies relating to rejection are particularly relevant to connections between the kinds of interpersonal concerns and behaviors in the attachment domain, and those in related domains such as social support, self-esteem, and emotion regulation. For example, anxiously attached individuals score lower on measures of self-esteem (Mickelson et al. 1997), and diary data reveal that the daily experience of self-esteem of anxiously attached individuals is highly influenced by rejection feedback from others (Hepper and Carnelley 2012). Similarly, the link between anxious attachment and workplace stress and burnout is mediated by the self-reported tendency to anticipate and focus attention on rejection, as revealed by such items as "When interacting with other people, I pay close attention to any signs that they might dislike me" (Ronen and Baldwin 2010). These findings raise intriguing questions about the nature of the relationship between attachment and the experience of the self and more precisely what happens to one's sense of self when attachment goals are not met, a point to which we will return at the end of the chapter.

## *Implicit Expectancies*

Individual differences in working models are thought to manifest at the implicit level as well. However, Baldwin et al. (2010) have observed that the measurement of implicit processes in the interpersonal context poses significant challenges. Here, the construct of interest involves interpersonal expectancies rather than, for example, the simple attitudinal valence that is the focus of many other implicit measures. So, how to assess implicit interpersonal expectancies?

Our view is that expectancies are rooted in patterns of cognitive activation. As demonstrated by research on the simulation and availability heuristics (Tversky and Kahneman 1974), people readily judge the probability of a future event based on how easily or fluently they can imagine that event. In essence, when people perform the kinds of "small scale experiments in the head" that Bowlby wrote about, the expectancy is revealed by the extent to which the person feels that "I can easily imagine that happening."

Drawing upon the notion that the ease with which we can imagine something influences its cognitive accessibility, response time measures might be a viable way to capture how readily people perceive target stimuli as relating to a particular social outcome. For example, a person who has a stable predisposition to anticipate rejection would be expected to show increased cognitive accessibility for rejection-related themes. In support of this, Baldwin and Kay (2003) found that anxiously attached individuals were quicker to recognize words relating to social rejection in a lexical decision task (which involves identifying letter strings as either words or nonwords). Similarly, Zayas et al. (2009) found that anxiously attached women were quick, although avoidantly attached women were slow, to identify rejection target words.

Beyond this kind of general orientation of anticipating particular interpersonal outcomes, we should expect variability in anticipated outcomes depending on, among other things, the if…then structure of an interpersonal script. As mentioned, a behavior-outcome expectancy is essentially a conditional probability (e.g., Watson 2001). That is, it is an expectancy that a certain outcome will occur, conditional or contingent on a certain behavior by oneself. In terms of working models, an expectancy can be conceptualized as an associative link between nodes representing a behavior by self and an expected response by the other person. This if…then, behavior-outcome expectancy produces a pattern of cognitive activation such that enacting (or even just thinking about enacting) the behavior in question results, via spreading activation, in making the interpersonal outcome more accessible. The anticipated outcome comes readily and fluently to mind, often producing the phenomenal experience that "If I do X…I can easily imagine that Y will happen."

At the implicit level, if…then expectancies about relational outcomes can be examined with sequential priming tasks. When this task has been used in cognitive psychology studies, results showed that people are faster to recognize targets (e.g., the word *nurse*) in a lexical decision task if they are first briefly shown a word that is associated with it (e.g., the word *doctor*) or a sentence fragment for which the word is an expected completion (e.g., "He gave the blood sample to the…"). In research on interpersonal cognition, a word or sentence fragment is first presented to the participant to get them thinking about a certain interpersonal context (the *if*) and this is followed by a lexical decision trial where the participant must make a word/nonword decision about letter strings, some of which represent the social outcome of interest (the *then*). If the *if* makes it easier for the person to identify the *then* as a word, this is thought to indicate that this association reflects the person's expectancy. For example, Baldwin and Sinclair (1996) examined the phenomenon of conditional acceptance, and found that individuals with low self-esteem were particularly quick to recognize words related to *rejection* on trials where they first were led to think about *failure*.

Adopting this paradigm, Baldwin et al. (1993) had participants read sentence stems relating to attachment, such as "If I trust my partner, then my partner will…", and then make lexical decision judgments of positive and negative outcomes. They found that avoidantly attached adults were quicker to recognize the word "hurt" rather than "care" in the context of trusting their partner—revealing an implicit expectancy about the dangers of trusting others. Zayas et al. (2009) extended the Baldwin et al. (1993) findings by collecting event related potential (ERP) data during the lexical decision task, and found that preoccupied women (i.e., high anxious/low avoidant) showed strong ERP reactions to rejection stimuli, within 400 ms of exposure, on trials where attachment issues were made salient.

In sum, the cognitive activation of possible outcomes such as *hurt*, *rejection*, or *abandonment* which is the basis of an implicit expectancy, arises dynamically due to multiple factors including internal representations and contextual cues. Although individual differences in attachment are clearly revealed in expectancies—indeed, much of the research in this area has progressed by comparing between people with different attachment orientations—significant variability also exists within individuals and between relationships and it is to this issue that we now turn.

## Multiple Models

Expectancies arise from a dynamic interplay between a person's memories of past experiences, various cognitive representations, and the internal and external cues and affordances of the moment. In a famous passage, Bowlby stated that people can have multiple models, either of multiple attachment figures or even as multiple models of a single relationship, observing "it is not uncommon for an individual to operate, simultaneously, with two (or more) working models of his attachment figure(s) and two (or more) working models of himself" (1973, p. 205). In order to understand the creation of expectancies, then, as well as their impact on attachment dynamics, we need to examine the relative influence of multiple representations.

Bowlby's observation gives rise to at least two general issues: First, although it is sometimes convenient to assume that people have a single working model that is used across all significant attachment experiences—and certainly we agree that people tend to gravitate toward a chronically accessible model (Baldwin et al. 1996)—it is far more likely that people have multiple models that are recruited for social cognition depending on situational factors, internal influences, and so on. Second, as we know from the larger social cognitive literature, it is possible to increase the accessibility of specific models via priming as a way to reveal the mechanisms of attachment-related information processing and to understand real-world fluctuations in attachment orientations. Taken together these observations support an examination of the normative, in addition to the individual-difference, aspects of attachment working models.

An early inkling of this diversity within a person's relational world was demonstrated by Baldwin et al. (1996) when they showed that most people in their samples had relationships representing at least two different attachment orientations. Moreover, even people who described themselves as generally anxious or generally avoidant reported that more than half of their ten closest relationships elicited security rather than insecurity. If…then expectancies were also evident at the relationship-specific level: For example, concerns about closeness seeking (e.g., "If I try to be close to this person, he/she will reject me") were most strongly linked to relationships characterized as anxious-ambivalent regardless of people's "chronic" level of anxious ambivalence.

The obvious question raised by finding such as these concerns the association between dispositional and relationship-specific attachment. A cluster of papers (e.g., Cook 2000; Cozzarelli et al. 2000; La Guardia et al. 2000; Pierce and Lydon 2001) have examined this question in slightly different ways but the consistent finding is that one's chronic or dispositional attachment orientation does not represent a simple composite or synthesis of all of one's attachment relationships. Moreover, relationship-specific models appear to regulate relationship experiences (e.g., intimacy, quality of interactions) in specific relationships to a greater extent than do dispositional attachment models. In one of the most impressive demonstrations of attachment dynamics at the relational level, Cook (2000) examined attachment in families by assessing each family member's attachment to each other family

member using the round robin design of the Social Relations Model (Kenny and La Voie 1984). In this way, Cook was able to assess how much an individual's attachment orientation was due to: (i) the actor's internal working model, (ii) the attachment style that the partner typically elicits from other family members, and (iii) the unique relationship between the actor and the partner. This design revealed reliable effects for actors' internal working models as evidenced by the fact that actor attachment accounted for unique variance in well-being (similar to Cozzarelli et al.); critically, however, Cook et al. also observed additional, and equally powerful, effects for the unique relationship between the actor and partner.

The ability to form distinct attachment relationships indicates that we are sensitive to attachment dynamics and informed by specific relational experiences. Moreover, findings by Cook (2000) and by Pierce and Lydon (2001) indicate that there is a "feedback loop" whereby relationship specific experiences inform and alter generalized expectancies. These observations are consistent with the notion that expectancies are updated in response to expectancy-violation experiences—be they negative *or positive*—even in adulthood.

The notion of multiple models raises questions about stability and environmental affordances. For example, if the experience of at least some attachment security is available to most individuals, why is not everyone secure? Attachment needs and their concomitant goals are so basic and potent in human experience that individuals are motivated to regulate these needs as best they can in extant situations. In infancy, attachment dynamics typically unfold in relation to a primary caregiver who serves as an attachment figure. A mental representation of that relationship is theorized to form and regulate stress and threats to security and to create expectancies that are projected onto new interpersonal relationships. However, just as the behavior of the caregiver impacts on the working model of attachment that develops, so too may the behavior of others later in life shape the specific expectancies that inform working models in relation to such specific others. Moreover, some of these specific expectancies and models that develop may be applied to new relationships and new contexts rather than being applied to the attachment model with the primary caregiver. In other words, having one secure attachment figure may not help across all interpersonal situations since suboptimal attachment relationships may be activated depending upon contextual cues.

To summarize, expectancies about closeness, dependency and security appear to exist at a general, global level as reflected in individual differences in attachment, and at the relationship-specific level. More recent theory (Chen et al. 2006) and research (Overall et al. 2003) suggests that a middle level may even exist, consisting of, e.g., a set of attachment expectancies for friends, another set for siblings, and another set for parents. In a novel interpersonal situation, one might apply a global model of attachment, a middle level model, or, possibly, even a relationship-specific model because of distinct similarities between the new person and a prior significant other, a phenomenon known as *Transference* (Andersen and Baum 1994; Andersen and Chen 2002; Andersen et al. 1996). Again, the factors that influence which level model will be activated in such novel situations are, to date, unclear but likely depend on features of the situation as described above and upon value as discussed below.

Before concluding this section on multiple models, we would like to turn to the specific question of which attachment representation is brought to mind when attachment security is threatened. We raise this point because in any given situation, a person may not have a great deal of control over the other people physically or mentally present to them—and yet their attachment goals (e.g., for felt-security) may be strong at the moment. Thus, as a backdrop to an examination of attachment dynamics it is worth appreciating the diversity of social relations that may be activated during these times. Indeed, we suspect that it is precisely because of the immense power of attachment needs that an individual may latch onto the interpersonal figure most accessible to them in that particular situation even if that person does not provide optimal attachment security (i.e., satisfy attachment functions of secure base, safe haven and proximity seeking). In support of this, Trinke and Bartholomew (1997) showed that individuals may have significant others that they ideally would seek out for attachment even though those individuals do not meet attachment needs and are not regarded as strong attachment figures. More recently, Milyavskaya and Lydon (2013) found that even figures nominated as strong attachment figures may not necessarily provide attachment security. Specifically, more than a quarter of their participants nominated attachment figures whom they seek to meet attachment functions despite the insecurity elicited by the attachment figure; moreover, they found that strong but insecure figures were turned to for as many attachment functions as strong secure figures. Finally, they found that, not surprisingly, individuals with strong insecure figures were lower in subjective well being than individuals with strong secure figures. These results are a reminder that attachment goals and strivings are regulated within the boundaries of situational affordances. Moreover, they may partly answer the question raised earlier about why, if we all have at least some experiences with attachment security, we are not all secure. Perhaps it is a person's ability to draw upon security conferring others specifically during times of need that produces a more generalized sense of security.

In sum, work on multiple models has greatly advanced our understanding of the functioning attachment behavior system, and how it shapes relationship experience and maintenance. This work has refined our predictions about what to expect from specific individuals in specific situations. What is interesting to consider in the context of the present work, is how the availability of multiple models feeds into more normative processes. More specifically, because of the availability of multiple attachment models, even someone who is "chronically secure" can display anxious or avoidant profiles in certain social contexts. So while we often think of secure, anxious, and avoidant attachment styles as reflecting individual differences that arise as a function of repeated experiences with, for example, an unresponsive or inconsistently responsive mother, in fact, the notion of multiple models reinforces the idea that these "styles" are normative.

## *Priming*

We end our discussion of expectancies with the topic of priming. Numerous researchers have utilized experimental priming as a way to carefully delineate the dynamics of the attachment expectancies that regulate the formation and maintenance of attachment bonds. The reasoning behind this methodological approach is that if multiple models of attachment are available in memory then it should be possible to prime specific models and observe their effects on associated expectancies, affect, motivation, and so on. The attachment priming literature has grown exponentially and we will not attempt to review it here, apart from mentioning a few particularly relevant examples. In an early illustration of this idea, Baldwin et al. (1996) primed participants with relationships in which they felt secure, anxious, or avoidant, and found that this manipulation influenced dating choices, with people being drawn to potential dating partners who "matched" their primed orientation. Pierce and Lydon (2001) tested the stress buffering effects of specific attachment models and found that subliminally priming words reflecting a warm-accepting versus a cold-critical attachment model influenced women's affective and coping responses to the visualization of an unplanned pregnancy. Importantly, they ruled out mood as an alternative explanation, thus highlighting the potency of the attachment model priming effect. In a third paper, Rowe and Carnelley (2003) found that participants who had been primed with a secure relationship were more likely to recall positive attachment-related words than those primed to feel avoidant. Moreover, when they reported their interpersonal expectations, secure-primed individuals reported more positive expectancies than the other groups, and anxious-primed individuals reported more negative expectancies. Finally, Bartz and Lydon (2008) used a priming procedure to look at the use of communal and exchange norms in specific attachment relationships. They found that, not surprisingly, those in secure and anxious relationships were more likely to be communal (e.g., make a personal sacrifice to help a friend). However, they also found that those in anxious (and avoidant) relationships 1) felt that their partner's reciprocation (of a communal overture) was important and 2) were quicker to reciprocate favors received, both of which are violations of the communal script. Thus, although those in anxious relationships want to be communal, they simultaneously adopt an exchange orientation, presumably to confirm the other's commitment. What is noteworthy about these findings is that the effects were not a function of people's chronic attachment style; rather, the effects were a function of the attachment quality of the specific relationship but nonetheless the findings replicate the effects of chronic attachment on communal and exchange norms (Bartz and Lydon 2006).

These and other such data indicate that through priming we can gain valuable insights into the nature of the associative network underlying the attachment system, and test the causal effects of activating specific attachment models (see, e.g., Mikulincer and Shaver's extensive work on security priming as reviewed in Mikulincer and Shaver 2007). The simple rule of thumb seems to be that priming a relationship characterized by a certain attachment orientation tends to lead a person to activate

expectancies that subsequent attachment experiences will unfold in a similar manner. That having been said, priming does not always lead to such straightforward assimilation effects (see, e.g., Baldwin 2007 for discussion) and it has been some of the anomalies in cognitive-accessibility studies that have led us to consider the influence of values, as well as expectancies, in the context of attachment cognition. For example, if a prime activates an orientation that is highly incongruent with a person's chronic attachment orientation or desired self-concept, this might under some circumstances provoke a kind of contrast effect in the types of information that becomes activated (see, e.g., Bartz and Lydon 2004), perhaps as a way of defending or supporting the validity of the valued model. Similarly, in some lexical decision tasks (e.g., Zayas et al. 2009) it has been found that whereas anxiously attached individuals do show an activation of negative expectancy content, avoidantly attached individuals actually show a reduced activation: Is this because they do not hold a negative expectancy, or because they simply do not value the communal outcome as much? These are the kinds of questions we turn to next.

## Value

We now turn to the topic of value. Here, our focus is on the subjective value associated with communal goals—i.e., seeking closeness, acceptance, and emotional responsiveness from a valued other. Drawing upon expectancy-value theory, we believe that both expectancies and value are important, and that gaining a better understanding of value, and on how value interacts with expectancies, can shed new light on attachment dynamics.

It is generally understood that insecure attachment is grounded in negative expectancies about relational experiences, but that whereas attachment anxiety is characterized by heightened attachment striving, avoidance involves a (actual or merely attempted) reduction in the valuing of attachment goals. Thus, starting from theory we are led to consider valuing as well as expectancies. Our appreciation for the importance of value is also empirically based. In examining topics in the attachment domain we have been struck by how experimental manipulations of valuing can lead to outcomes that are surprising, and even paradoxical (at least for some individuals, or in some situations). In our opinion these findings cannot easily be interpreted based solely on an analysis of expectancies; rather, a consideration of value is required.

In the following section we provide a more detailed examination of subjective value, alone or as it combines with expectancies, to influence affect, behavior, and relationship satisfaction. In several different paradigms, we have attempted to manipulate relational valuing—e.g., by increasing it through situational as well as, in some cases, physiological means—and then observing the effects of such heightened valuing on affect, cognition, and behavior. In our discussion, we focus on the phenomenon of anxious attachment, which we see as arising from a combination of strong relational desire plus uncertainty (or conflict) in expectancies. Importantly,

although we focus on "anxious individuals," we believe that many of the findings that we discuss reflect the normative functioning of the attachment system and thus would apply to most individuals who are thrust into a situation in which there is a strong desire for closeness but concerns that close others do not (or may not) sufficiently share that desire. As noted at the outset of this chapter, from a straightforward goals analysis, it is somewhat perplexing why anxious individuals have such difficulties achieving and maintaining closeness with others given their intense desire for closeness. In an attempt to understand this disconnect between motivation and achievement, prior work has focused largely on the role of anxious expectancies. We believe that this disconnect may also stem from the value anxious individuals' attach to the goal of closeness and, more precisely, their excessive valuing of and consequent preoccupation with attachment goals in certain circumstances, which, we suspect may amplify their conflicting expectancies.

## *Relationship Initiation Under Heightened Valuing: Interacting with a "Potential Close Other" in the Lab and Field*

We now turn to a series of studies in which we have manipulated the momentary valuing of attachment goals by situationally altering the desire and opportunity for closeness with another person, or have investigated participants' behavior in naturalistic situations involving heightened communal value (i.e., speed dating).

It is widely held that close relationships are associated with communal norms (responsiveness to need), whereas more casual relationships are associated with exchange norms (e.g., tit-for-tat; Clark 1986). However, as Lydon et al. (1997) observed, when people *desire* a close relationship with another person, they face an "interdependence dilemma" in which they must weigh the risks and rewards of communal behavior. People want to follow the communal script to signal interest but behaving communally can create anxiety because there is uncertainty about whether the interest is mutual. To reduce anxiety, people look for evidence of caring in patterns of social exchange, but this micro-level perspective (tabulating each tit-for-tat) can—paradoxically and unfortunately—further fuel feelings of vulnerability because it undermines a sense of confident trust in the positive motives of the partner.

In a series of studies, Bartz and Lydon (2006) investigated how individual differences in attachment influence this interdependence dilemma. We highlight this research because these studies manipulated people's desire for a communal relationship with another person—in effect, increasing the incentive value and salience of closeness. They built on work by Clark (1986), in which people's choices to emphasize versus downplay individual contributions in a joint activity were taken as indicators of exchange versus communal norms, respectively. Participants were brought into the lab and told they would be working on some group tasks with another participant. In one condition, participants' desire for a communal relationship with their partner was manipulated by having them interact with an attractive,

opposite-sex partner (a confederate), whom they were surreptitiously informed was single and had recently transferred from another University; in this way instilling the desire and opportunity/probability for a communal relationship. Participants' use of, and reaction to the other's use of, communal norms were then measured. In Study 1, communal behavior was operationalized by a seemingly trivial indicator: the choice to use the same color pen as used by the other person for a group task, rather than selecting a different color pen, and thereby making apparent individual contributions. Anxiously attached individuals overwhelmingly (93 %) chose to work with the same color pen as their partner, indicating their desire to follow the communal script and, more precisely, their desire to *avoid* appearing exchange oriented. These data, we think, illustrate anxious individuals' strong desire for closeness—indeed, the proportion of anxious participants who chose to use the same color pen was significantly higher than that of secure participants (whose pen choice was at chance, indicating that they were following the communal script, but not actively avoiding to appear exchange oriented).

Interestingly though, in a condition in which the potential close other used communal norms, a paradoxical finding emerged amongst the anxious: rather than uniformly stimulating feelings of warmth and fulfillment, this communal overture instead increased their interpersonal anxiety (e.g., feeling self-conscious). Although anxiously attached individuals went out of their way to signal to an attractive new work partner that they were acting in a communal fashion, when they received evidence that their partner was acting in this same communal fashion (vs. not), their interpersonal anxiety spiked—a somewhat ironic response considering their desire for connection since the other's communal behavior should, if anything, signal mutual interest. This finding suggests that it is not solely expectancies of rejection that fuel anxious individuals' anxiety; if anything, our situational manipulation should have increased their expectancies of acceptance. We believe that it is the subjective value and meaning that they ascribe to these situations (possibly in combination with expectancies) that is driving their interpersonal anxiety. Indeed, a third study confirmed that the anxious were more likely to ascribe importance, meaning and relational significance to even relatively mundane communal overtures. The question then is, does—or how does—this (over)valuing lead them astray?

Data from their fourth study indicate that opportunities for closeness may lead to inhibition. In this study, participants again interacted with a potential close other, who signaled interest by acting communally or not (this time by smiling and suggesting to work together on the group task). Prior to the "group task" participants completed, among other things, a mental concentration task. Whereas secure individuals benefitted from the communal-acting other and excelled on this task, anxious individuals did not. Moreover, lexical decision data revealed that it was implicit thoughts about closeness—not rejection—that undermined anxious individuals' concentration, supporting the hypothesis that it is the value they attach to the goal and not (or not solely) a negative expectancy that is problematic.

Thus the ambivalence of the anxiously attached is reflected in the paradox that they exhibit communal strivings but are upset (or at the very least startled) by communal overtures. In a further investigation of this topic, two of us, along with Joy

McClure, examined ambivalent behavior among anxiously attached individuals (McClure et al. 2013). Participants came into the lab and played two "one-shot" social dilemma games with four different partners—specifically, the prisoner's dilemma (PD) and the assurance game (AG). As expected, compared to more secure individuals, the anxiously attached oscillated between cooperation and defection strategies in the social dilemma games. What is important here however is nature of the two games played. Specifically, oscillation is understandable in the PD because the payoff structure pits individual self-interest against relational interest. However, oscillation is not optimal in the AG because the payoff structure is designed so that individual participants are rewarded for consistent cooperative behavior—indeed, such oscillation would likely signal distrust because there is no reason (from a purely rational perspective) for not cooperating in the AG. It was precisely in this context (i.e., the AG) that the anxiously attached exhibited conflict and ambivalence. Moreover, as a further indication of their ambivalence (and possible inhibition), the anxious were slower to select a behavior in the seemingly "easier" AG game, regardless of whether they chose cooperation or defection. These findings are reminiscent of Bartz and Lydon's (2006) findings, and suggest that even if communal situations do not stimulate expectancies of rejection, there may be other competing goals (e.g., self-protection) that are raised for anxiously attached. Importantly, however, consistent with our view of attachment dynamics, priming attachment security overrode the chronic ambivalence of the anxiously attached and they exhibited less oscillation in their behavior and less hesitation in their choices when they thought about a secure attachment relationship prior to the social dilemma games, possibly because the goal of self-protection was less relevant. This priming effect reinforces the "normativity" of the attachment related cognitions and behaviors associated with specific attachment styles—that is, anxious individuals can and do act secure when they feel secure.

In another series of field studies two of us utilized speed dating to look at the effects of attachment in a situation in which the motivation for connection is high. These data shed light on how anxious individuals are perceived by others. Specifically, McClure et al. (2010) found that the anxiously attached are indeed seen as less appealing and less dateable in these zero-acquaintance situations. Moreover, McClure and Lydon (2014) found that in face-to-face interactions in the lab and in the field (at speed dating) the anxiously attached emit unfavorable interpersonal displays of social disengagement and manifest anxiety and, critically, these negative interpersonal displays mediated the negative impressions formed by observers.

Taking together data from the lab (interacting with a potential close other), and field (speed dating), a picture emerges of the anxiously attached in which their strong desire for closeness combined with ambivalent expectancies results in behavioral inhibition and/or oscillation that is then detected, and seen as undesirable, by potential close others. Again, it is not simply negative expectancies but ambivalent expectancies *combined with* desire and opportunity in the communal domain that undermines their behavior. Indeed, it appears that it is precisely in situations in which the desire and opportunity for closeness are high that the anxious experience conflict. We think an important direction for future work is to identify the specific

expectancies that come online for anxiously attached individuals during these moments of heightened salience and valuing of attachment, to provoke displays of submission and withdrawal. As we discuss in the next section, it may be that for the anxious these communal opportunities a believed to require a form of self-subbordination that more secure and avoidant individuals do not experience.

In conclusion, we draw upon work on the anxiously attached—an orientation defined by a strong desire for closeness—to illustrate the role of heightened valuing of attachment goals, and how such valuing can interact with expectancies, to influence attachment dynamics. Again though, as noted at the outset of this section, we believe that anyone who is faced with an intense desire for closeness, in a context of interpersonal uncertainty, could grapple with similar issues; the chronically anxious may just have a lower threshold for displaying what is fundamentally a normative coping mechanism for the interdependence dilemma we all face at one time or another in our relational lives. We suggest the process could be the same for anyone if the subjective value attached to closeness is high enough (cf. Lydon et al. 1997) and/or the uncertainty of what to expect is acute enough.

## *Biological Correlates of the Subjective Value of Attachment Goals: Oxytocin*

Another surprising finding regarding the anxiously attached, which we think also speaks to the issue of relational valuing, has emerged from recent work looking into the social effects of the neurohormone oxytocin in humans. Given the vital importance of attachment in humans (and some other animals), it is believed that biological mechanisms have evolved to promote the formation and maintenance of these bonds. Although there are a number of candidates, one of the most widely studied is the neurohormone oxytocin. Oxytocin is a nine-amino-acid peptide hormone that is synthesized in the paraventricular nucleus and supraoptic nucleus of the hypothalamus and released into peripheral circulation via the posterior pituitary gland. In the periphery, oxytocin has a number of actions but was first identified (and probably best known) for its role facilitating delivery during childbirth and milk-ejection during lactation (Burbach et al. 2006). In addition to its peripheral effects, oxytocin is also released into the central nervous system where it acts as a neuromodulator. Over four decades of research in non-human animals has shown that oxytocin plays a critical role regulating the formation and maintenance of attachment bonds. Specifically, oxytocin has been shown to be central to a suite of processes required for both mother–infant and adult–adult pair bonds, including: memory for and recognition of familiar others, preference of partners over other conspecifics, and motivated caregiving behavior, e.g., such maternal behaviors as retrieving and crouching over pups (for review, see Ross and Young 2009). Interestingly, and of particular relevance to this chapter, research has shown that these "prosocial" effects of oxytocin are due largely to the density of oxytocin receptors in regions of the brain associated with reward and reinforcement (e.g., the nucleus

accumbens), which is thought to have the effect of making social interactions more pleasurable and rewarding.

Although much less is known about the role that oxytocin plays in human attachment, recent work suggests intriguing parallels with the animal literature. For example, increasing the availability of central oxytocin (via nasal spray administration) was shown to increase trust behavior in an economic exchange game (Kosfeld et al. 2005), cooperation (De Dreu et al. 2010; Declerck et al. 2010), the perceived approachability (Rimmele et al. 2009) and attractiveness (Theodoridou et al. 2009) of faces, and numerous other indices of prosocial cognition and behavior. Indeed, such findings have led to the conceptualization of oxytocin as a "love hormone" that promises to foster warm feelings and strong emotional bonds.

We introduce the topic of oxytocin here because, in our view, oxytocin (either alone or in combination with other neurochemicals) may be a biological correlate of the subjective value people ascribe to communal goals and attachment bonding more generally. Moreover, intriguingly, in the same way that situationally increasing the opportunity and desire for closeness can produce "ironic" effects in the anxiously attached, so too does increasing the availability of oxytocin.

In an early demonstration of this effect, Bartz et al. (2011b) administered intranasal oxytocin or placebo to healthy adults and adults with borderline personality disorder (BPD, a disorder characterized by preoccupation with being abandoned by significant others, interpersonal insecurity/instability and emotional reactivity). Participants then played the aforementioned AG with a partner (actually a research confederate). Results showed no main effect of oxytocin but rather a significant oxytocin by group interaction; however, in contrast to the popular view, oxytocin significantly *decreased* trust and the likelihood of cooperation in BPD/anxiously attached participants. These data showed, for the first time, that far from being a social panacea, oxytocin might impede trust and prosocial behavior depending on the presence of interpersonal insecurities and nature of working models (these effects held whether groups were characterized by diagnostic status or individual differences in attachment anxiety).

In another study, Bartz et al. (2010b) investigated whether oxytocin is involved in the mental representations associated with attachment given its role in attachment and social memory in animals. To address this question, they administered intranasal oxytocin versus placebo (within subject, across two testing sessions separated by several weeks) to participants and then measured recollections of maternal care and closeness in childhood—two key features of the attachment bond. Again, there was no main effect of oxytocin but rather a significant oxytocin by attachment anxiety interaction, with securely attached individuals remembering their mother as more caring and close in childhood when they received oxytocin compared to when they received placebo, but anxiously attached individuals showed the opposite pattern—that is, they remembered their mother as *less* caring and close in childhood when they received oxytocin. In terms of expectancy-value, we might hypothesize that by increasing the subjective value of closeness/close relationships, this might also bring to mind the memories and expectations cognitively associated with that value. Thus, a person with an insecure working model might

be particularly likely to recall disappointments at precisely the moment when the desire for attachment is highest.

Such paradoxical effects of oxytocin in interpersonally vulnerable individuals have now been replicated by others (Bakermans-Kranenburg et al. 2012; Meinlschmidt and Heim 2007; Norman et al. 2011; Rockliff et al. 2011) and raise questions about the normative processes that oxytocin impacts to facilitate attachment bond formation in humans. How can oxytocin be helpful—socially—to some individuals but not others? Drawing upon work in animals, Bartz et al. (2011b) suggest that oxytocin may increase the desire for closeness and/or the salience of social cues in the environment (these two processes could operate in independently or in a reciprocal fashion—i.e., increasing the desire to affiliate should increase attention to social information just as increasing any other goal state increases attention to goal relevant information). If oxytocin increases affiliative motives and/or the salience of social cues, one would expect that this could heighten the effects of chronic individual differences in the relational expectancies people have and, consequently, lead to very different behavioral outputs, with oxytocin, for example, increasing trust and prosocial behavior in those who have generally positive expectations about others, but exacerbating insecurities in those who have more negative expectations. Indeed, in the aforementioned oxytocin-BPD study, it was found that those who received oxytocin initially felt more friendly than those who received placebo (unpublished data). However, as described, these pro-social inclinations were not maintained when the chronically insecure participants entered into the context of the social dilemma game, in which they had to assess the trustworthiness of the other player. These data are reminiscent of the aforementioned work on the interdependence dilemma people face in situations involving the potential for closeness and, specifically, the finding that activating closeness motives can backfire, increasing anxious individuals' interpersonal anxiety and eliciting their prosocial ambivalence.

More recent research may shed light on why activating communal motives can backfire in the anxiously attached. Although oxytocin can exacerbate interpersonal insecurities in the anxiously attached studies indicate that oxytocin can be helpful for those who are less socially engaged/motivated (Bartz et al. 2010a), or avoidantly attached (De Dreu 2012). In an attempt to explain this disparate pattern of results, Bartz et al. (under review) hypothesized that if oxytocin acts in a normative way to increase the desire to affiliate, this could shift the balance of communal and agentic motives (cf. Helgeson 1994) and result in differential effects for the anxious and avoidant. Specifically, an increase in other-oriented, communal motives should be helpful for those who are excessively focused on the self to the exclusion of others (like the avoidantly attached) but, an increase in other-oriented communal motives could be unhelpful for those who are already overly other focused and have little sense of self (like the anxiously attached) because it may further diminish the priority of the self and bring into play anxious' expectancies about a need to be submissive in order to achieve relatedness. In support of this hypothesis, Bartz et al. (under review) found that participants saw themselves as significantly more communal (e.g., "kind" and "understanding of others") following oxytocin

(vs. placebo) and, consistent with prior work, this effect was especially pronounced for avoidant individuals, who are generally low in communion. With respect to agency, there was no main effect of oxytocin; however, results revealed a significant oxytocin by attachment anxiety interaction, such that highly anxious participants—who are generally low in agency—showed even further reductions following oxytocin (i.e., reporting being even less "independent" and "self-confident"). In addition to explaining anxious individuals' negative response to oxytocin, these findings may illuminate anxious individuals' ironic response to opportunities for closeness more generally—that is, closeness may be anxiety provoking for anxious individuals not (or not solely) because of expectancies of separation/abandonment but because closeness, in the mind of the anxious, requires a subordination of the self. Such feelings could make them feel even more vulnerable in interpersonal situations and even on occasion result in the kinds of "antisocial" behaviors that were observed in the BPD participants.

Although such variability in the social effects of oxytocin could at first blush be interpreted as random noise, as described, these person-specific effects may shed light on the fundamental processes oxytocin regulates across all people (cf. Mischel and Shoda 1995). In fact, other work indicates that not only do individual differences moderate the social effects of oxytocin but so can the social context (for review, see Bartz et al. 2011a). For example, in the domain of trust and cooperation, Declerck et al. (2010) found that although oxytocin increased trust when participants played a social dilemma game with someone whom they had met, oxytocin *decreased* trust when participants played with a stranger; similarly, De Dreu et al. (2010) found that oxytocin *decreased* cooperation when participants played a social dilemma game with an outgroup member (under conditions of high fear). These findings are reminiscent of the effects of oxytocin observed in BPD participants (who are chronically concerned about betrayal) and suggest that individual difference responses to oxytocin may in fact be normative for certain contexts. That is, even secure individuals will show decreased trust in response to oxytocin when put in a highly uncertain context, or when interacting with an outgroup member. Viewed in this light, the oxytocin system and how it regulates affiliation appears to be adaptive in that it does not promote closeness when closeness may be risky. Here again, expectancy and value are best understood in combination.

## Conclusion

In this chapter we suggest that our understanding of attachment dynamics can benefit from an expectancy-value approach. We note that much is known about attachment expectancies and individual variation therein, the interplay between relationship-specific and general expectancies, and how, why, and when expectancies might exert their effects. However, we suggest, less is known about how the subjective value that is attached to attachment goals influences attachment dynamics. In our discussion of value, we focus on research looking at attachment anxiety

in the context of the interdependence dilemma people face at the outset of a relationship, and in speed dating situations, to understand how subjective value alone, or in combination with expectancies, can influence emotion and behavior in communal goal relevant contexts. Moreover, we suggest that although situational affordances can modulate value appraisals, it appears that biological factors (e.g., oxytocin) can also modulate the valuing of social stimuli and communal goals. We conclude this chapter by calling attention to a few issues, which we think are interesting and important avenues for future work.

One question is whether and how the subjective value of communal goals, and the effects thereof, differ as a function of the extent to which such goals have been met in the past. In particular, we might speculate that the value one attaches to a chronically unmet goal may be—or may become over time—fundamentally different from the value one attaches to an important goal that has been achieved in the past. For example, we know that both secure and anxious individuals place a high value on communal goals but, as we suggested above, the value that anxious individuals attach to communal goals seems excessive. Perhaps this is due in part to the fact that such goals have been chronically unmet. This value deficit model could shed light on the agency-communion data described earlier where it was found that communal valuing impacted agency for the more anxious but not for the more secure or avoidant individuals. It may be that because communion is a chronically unmet goal for the anxious, they (i) prioritize communion over agency, or (ii) believe that communion requires a subordination of agency (possibly because suppressing agency was reinforced in the past).

Another question concerns the nature of the relationship between expectancy and value. We have discussed how value (and, more precisely, increases in subjective value) potentiates the effect of expectancies on communal goal pursuit but there are also circumstances in which the reverse is true—i.e., where expectancies impact value. Indeed, it is widely held that avoidant individuals' devalue closeness as a mechanism to cope with the experience of an unavailable and/or unresponsive significant other (or because they have learned that such unavailable significant others accept them only when they are more self-reliant). Future work should explore the factors that influence the nature of the relationship between expectancy and value.

On a related note, it is also interesting to consider the effect of the experience of achieving (or not) attachment goals on expectancies and value. We know that expectancies are updated as a function of such experiences, but does—or how does—subjective value change in response to achieving/not achieving communal goals? If uncertain/ambivalent expectancies lead anxious individuals to overvalue communal goals, might experiences of communal goal achievement lead to more moderate (less obsessive) valuing for the anxious? By contrast, might the experience of communal goals lead to an *increase* in communal goal valuing for more avoidant individuals? Data from research with oxytocin administration suggests this might be the case. As noted, avoidant individuals have a hard negative expectancy that motivates low value on communion. By increasing subjective value, oxytocin may open avoidant individuals to the kinds of positive communal experiences that can then alter their expectancies. What is interesting in regard to this last point is that,

as the reader will recall, the solution is not so simple for the anxious. Because of their combination of heightened (and complex) value with ambivalent expectancies, it is not solely a matter of increasing value—in fact, increasing value tends to produce ironic effects in communal situations. Historically, and from a pure expectancy analysis, attachment anxiety has seemed to be a step closer to security than attachment avoidance, but our expectancy-value analysis suggests that this may be an oversimplification of the differences between these two forms of insecurity, whether they are the result of chronic experience or acute situations.

In conclusion, we hope this chapter sparks more interest in the notion of subjective value in the context of attachment dynamics and considerations of both expectancies and value when thinking about the effects of working models on the formation and maintenance of attachment bonds.

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