CHAPTER 8

Social Bonds

A New Look at an Old Topic

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Contact with other humans is a biological imperative. This is obviously true for survival at birth. It is less obviously true in adulthood. Yet being socially isolated, whether objectively or subjectively, predicts earlier death (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Rico-Uribe et al., 2018), as does having lower *quality* of social relationships, whether assessed via one meaningful relationship, such as a spouse (e.g., King & Reis, 2012), or considering one's entire social network (Holt-Lunstad, Smith, & Layton, 2010). These are not trivial effects: The risk for death from poor social relationships is the same as that from smoking 15 cigarettes per day and is greater than that of obesity (Holt-Lunstad & Smith, 2012; Holt-Lunstad et al., 2015), with the latter two factors widely recognized as important risk factors for health and longevity (e.g., Samet, 1990; Wang & Beydoun, 2007). It stands to reason, then, that forming and maintaining social bonds is a central task of human survival. As it turns out, social psychologists are uniquely well suited to illuminate the basic mechanisms that support this central task.

In this chapter, we define a *social bond* as a close, intimate relationship that holds two people together. To illustrate the phenomenon,

the presence of a strong social bond may be observed in (1) a reaction of "distress when separated," (2) willingness to "spend energy to get together again," and (3) demonstrations of "positive contact behavior upon reunion" (de Waal, 1986, p. 463). Critical to this chapter, social bonds are the end products of a cumulative social bonding *process*; these end product relationship types are often between parents and children, romantic relationship partners, and good friends. However, as social psychologists, we recognize the power of situations. Specifically, we study—and here bring attention to—situations that represent *bonding opportunities*; these momentary opportunities can happen between anyone—including strangers—and should cumulatively influence the strength of the overall bond at any one time it is assessed. (Evidence from scores of studies that obtain daily self-reports lead to the conclusion that even romantic partners fluctuate in the degree to which they would say they are "bonded" with their partner from one day to the next.) Taking this situation-based approach, we aim to identify the behaviors and tasks of everyday life that may most rapidly promote connections with other people, especially those other people who are the very best for us.

In this chapter, our first goal is to provide some basic principles that can guide a program of research in this area, and in fact have guided mine (S. B. A.). Next, we use three areas of research to illuminate how these principles inform theory development. Finally, because we suggest that the study of factors that *promote* social bonds has received limited attention in recent years, we briefly call attention to bodies of literature that have developed in the past two decades—picking up steam over the past 10 years—that will usefully inform theory and evidence going forward.

Principle 1: The Presence and Promotion of Connection

In the 1950s and 1960s, Mary Ainsworth, John Bowlby, and Harry Harlow conducted groundbreaking research that highlighted the value of warm maternal connection in the healthy development of the infant (Ainsworth, 1964; 1969; Ainsworth & Boston, 1952; Ainsworth & Bowlby, 1954; Bowlby, 1958; Harlow, 1958; Harlow, Dodsworth, & Harlow, 1965; Harlow & Zimmerman, 1959). Whereas Ainsworth was dependent on naturalistic observation to document and understand the impact of parents on healthy child development (e.g., separation of the child and mother due to illness; Ainsworth & Boston, 1952), Harlow worked with monkeys, so was able to conduct experiments that manipulated the presence and type of a maternal figure. These experiments vividly illuminate the concept of a social bond, as well as its value.

At the time Harlow was conducting these experiments, the prevailing theory in psychology and sociology for why infants become attached to their mothers (parent figure) was behaviorism: A child has primary drives that include hunger, and affection toward a mother only developed secondarily because of a learned association between getting that need met and the mother providing the food. Harlow put this to the test by isolating infant macaque monkeys from their real mothers starting within 12 hours after their birth and building surrogate "mothers" with feeding capabilities. Critically, one of the surrogate mothers was made from chicken wire and the other was wrapped in a soft terrycloth cover; both were in the cage with each infant

monkey, but only one had food: Half the infants received milk from a nipple on the mother made from wire, and the other half from the mother made from cloth. In stark contrast to the behaviorists' prediction, regardless of where the milk was coming from, the infants quickly developed a strong preference for the cloth mother. The infants ate the food from the wire mother, but they craved more than food: They spent substantially more time on the cloth mother, and it was just as much time as those infants who were receiving their food from the cloth mother. Harlow concluded from these studies that the presence of comfort is a primary rather than secondary need (Harlow, 1958; Harlow & Zimmerman, 1959).

Much further than this, however, subsequent experiments documented that when presented with a strange, anxiety-inducing situation, infants would retreat to the inanimate cloth rather than the wire mother for comfort, and when they could be in the safe, secure presence of the cloth mother—either physically touching her or even if she was merely visible (but inaccessible)—the young monkeys showed significantly reduced emotional distress compared to control conditions. Not only that, once they calmed down through contact comfort with their inanimate cloth mother, they would start to *explore*; in contrast, the infants with no contact comfort in that strange situation were immobilized with fear and distress (Harlow, 1958; Harlow & Zimmerman, 1959; human infants demonstrate similar behavior; see Arsenian, 1943). Finally, revealing some of the more dramatic consequences for not only healthy development but also survival, infant monkeys raised in total social isolation for the first 6 or 12 months of their lives were reintroduced to the social group. Not only did these previously isolated monkeys not play well with other monkeys, which stunts the opportunity to learn important life skills (see Harlow & Harlow, 1965), they were more aggressive toward and subsequently rejected by the other monkeys. Harlow concluded, "Placed in a free living situation, most of these animals [reared in isolation] would be driven off or eliminated before they could have an opportunity to learn to adapt to the group" (Harlow, Dodsworth, & Harlow, 1965, p. 96).

Of course, the elegance of these experiments is their ability to strip away all the other be-

havioral and emotional signals within repeated interaction with a live parental figure—the mere presence of physical comfort and warmth, always there when needed, was sufficient to initiate these divergent developmental consequences. Human research between parents and children has since added great richness and corroboration to these basic conclusions (Bowlby, 2008; Fraley, 2002; McLaughlin, Sheridan, & Nelson, 2017; Nelson, 2007; Ranson & Urichuk, 2008). Children with psychologically warm, behaviorally responsive, and safe parent figures tend to develop into psychologically healthy, successful, and physically healthy adults. Beyond getting one's physical needs met, like a roof over one's head or food, moments of bonding cumulatively influence one's ability to survive threats and learn about the environment; once bonded, partners themselves—like parents, lovers, and friends—keep one out of risk for danger (e.g., by proactively warning about a threat in the environment) and provide opportunities for growth (e.g., by teaching new skills).

It is with this backdrop that we fast-forward to the contemporary social psychological literature on relationships. This field predominantly studies relationships between adults. In contrast to parents and their offspring, adult social networks are made up of a wide array of voluntary relationships, all with varying degrees of bond (e.g., Clark & Mills, 2012). Recognizing the value of close connections, researchers have investigated a broad range of interpersonal behaviors that occur within them; many behaviors help prevent decline in relationships (e.g., fighting respectfully: Gottman, 1994), help a person not get kicked out of a social group (e.g., embarrassment: Keltner & Anderson, 2000; guilt: Baumeister, Stillwell, & Heatherton, 1994), or help maintain the status quo (e.g., equity: Utne, Hatfield, Traupmann, & Greenberger, 1984). However, we hope we have demonstrated from the brief review of the animal and child literature that it is especially worthwhile to identify and understand yet another type of interaction: those that create the connection in the first place. In everyday life, what are the situations that actively and directly *promote*—not merely maintain or prevent from declining—these social bonds? Understanding these kinds of moments may bring the next-generation return on investments for uncovering the myriad pathways through which high-quality relationships impact health. The focus of this chapter is thus the *presence* of bonding opportunities.

Principle 2: Situations Matter

Although of course bonded relationships develop over time, perhaps best illustrated by the profound distress exhibited upon losing a close other (e.g., Bowlby, 1982a, 1982b; Harlow & Zimmermann, 1959; Keyes et al., 2014), as social psychologists, we argue that situations—momentary opportunities for bonding—matter (Reis, 2008). They matter for developing the bonded relationship in the first place and for getting reconnected when it inevitably goes awry. As examples, typical bonding situations we discuss more extensively below are shared laughter, kindness, expressed gratitude, and affectionate touch.

In this chapter, we highlight the critical need for researchers to drill down into the features of a situation most likely to create the bond. For example, as we will demonstrate later, on their own, a given factor such as "laughter," "touch," or "oxytocin" does not promote bonds, but it is only in the right context that they do. Touch, after all, can be painful (Stith, Smith, Penn, Ward, & Tritt, 2004), and oxytocin can cause aggression (De Dreu & Kret, 2016). Instead, these are general tools that the body uses for a wide variety of purposes; as social psychologists, we can and should identify the specific contexts in which the body uses them for promoting bonds.

Principle 3: It Takes Two

By definition, a bond happens between two people. This means that the thoughts, feelings, behavior, and biology of each person can come into play in the situation. As such, there is much room for theoretical specification and substantial opportunity for the generation of hypotheses. To this end, our work is guided by a foundational model in the close relationships literature (Reis & Shaver, 1988). The model specifically considers the construct of intimacy but is instructive in a general sense via the detail with which it elaborates on what can be gained by considering social interactions between two people as a dynamic, transactional *interpersonal process*. Broadly, person *A* enacts a behavior,

which is interpreted by person *B,* who then re-acts, responds, or simply, behaves; this, in turn, is interpreted by person *A.*

Although the interpersonal process model of intimacy (Reis & Shaver, 1988) acknowledged individual differences (e.g., cognitive working models of attachment might act as a filter through which the partner's behavior is interpreted), it did not emphasize biological factors as potential individual differences. In this chapter, given more recent integrative research showing the powerful ways in which the body influences the mind and behavior (Booth, Granger, Mazur, & Kivilghan, 2006; Bosch & Young, 2018), we feel it is important to explicitly bring biology into play as well, in part because evidence suggests that momentary bonding opportunities—the most powerful, especially—are deeply ingrained from our evolutionary history (e.g., Finkel & Eastwick, 2015; Fletcher, Simpson, Campbell, & Overall, 2015; Hrdy, 2001; Wilson, 2004). As such, the biopsychosocial systems to support bonding would have co-evolved, with the behavioral and subjective psychological responses recruiting from biological foundations when the right situation arises.

As one example of this, although oxytocin is notoriously difficult to link to *general* social–emotional behaviors across various types of relational situations (Graustella & MacLeod, 2012), early work emphasized its role in facilitating specific dyadic bonds (Williams, Carter, & Insel, 1992). So, building from the theory that expressions of gratitude represent an opportunity for a grateful person to promote a bond with a kind benefactor (Algoe, 2012), Algoe and Way (2014) found indirect but suggestive evidence that dispositional oxytocin is associated with greater frequency and quality of behavioral gratitude expressions toward a romantic partner, as well as more positive subjective psychological responses to expressing gratitude in real time that may (1) create momentary feelings of closeness, as well as (2) reinforce the bonding behavior. Other work suggests that circulating oxytocin influences perceptions of bonding-relevant behavior (Algoe, Kurtz, & Grewen, 2017). Specifically, greater oxytocin is associated with greater perceptions of a partner's responsiveness and greater experienced love toward that partner following the partner's expression of gratitude to the self. In short, fuller understand-

ing of the mechanisms through which humans form and sustain social bonds will come from considering deeply rooted biological processes of each member of the dyad.

Principle 4: Seeking High–Quality Dyadic Partners

Harlow's (1958) infant monkeys were attracted to and sought time with the inanimate cloth mothers compared to the wire mothers. Having anyone matters (Holt-Lunstad et al., 2015), but having people who are good fits *for you* adds further value (Bell & Ainsworth, 1972; Kane, McCall, Collins, & Blascovich, 2012). This implies that we (humans) should instinctually look for and be sensitive to signals from those other people who might be good for us: Do they understand, validate, and care about us? Can we tell that they are motivated to look out for our best interests? Do they like us? Are we similar to them (to facilitate understanding)? Do we *want* to see them and spend time with them, or do we feel anxious about the prospect of losing them?

As many social psychologists are aware, Fiske and colleagues have robustly documented that people do evaluate social interaction partners on at least two general social dimensions—whether people are warm/sociable and whether people are competent/assertive (Fiske, 2018). Here, however, we draw attention to more precise indicators of dyad-specific potential, highlighting the dynamic between person *A* (i.e., judge) and person *B* (interaction partner). Indeed, abundant research shows that the judge's evaluations of an interaction partner's responsiveness to the self—that is, how understanding, validating, and caring the partner is toward the judge (Reis, Clark, & Holmes, 2004); how trustworthy the interaction partner is (Rempel, Holmes, & Zanna, 1985); whether there is reciprocal liking (Eastwick, Finkel, Mochon, & Ariely, 2007); whether one perceives similarity (Montoya, Horton, & Kirchner, 2008); whether the interaction partner is thought to be inclined to approach positive outcomes on the judge's behalf (Impett et al., 2010; Visserman, Righetti, Impett, Keltner, & Van Lange, 2018); and whether the partner is perceived to be committed to the judge (Agnew, Van Lange, Rusbult, & Langston, 1998) all forecast higher-quality bonds. These are all measured as evaluations of

specific social interaction partners' relational orientation toward the self, not as general impressions of how those people would act toward anyone. In summary, plenty of research shows that we evaluate others on interpersonal dimensions that would (and do) forecast whether they could be a good relationship partner.

Principle 5: Bonding Opportunities Span Relationship Types

Like many other scholars, we assume these processes are learned throughout the developmental trajectory, not only in parent–child dyadic systems but also among siblings and friends in childhood and early adolescence, then built on into adulthood (Balliet, Tybur, & Van Lange, 2017; Hazan & Shaver, 1994; Raley, Crissey, & Muller, 2007). The literature on the attachment system for both children and adults is abundant, and romantic (i.e., sexual) bonds are the stereotypical version of a social bond in adults. So these specific processes might be the first that researchers consider (e.g., Muise, Giang, & Impett, 2014; Simpson, Collins, Farrell, & Raby, 2015), and they would not be wrong to do so. However, peer social groups regulate one's ability to learn new cognitive and social skills (e.g., through play; de Waal & Preston, 2017; Ginsburg, 2007; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004) and access to resources (de Waal, 1989), so opportunities for bonding across relationship type would have been evolutionarily advantageous (e.g., stronger social skills may facilitate development of other skills, access to resources). Indeed, although we believe the type of relationship will dictate the frequency and impact of any given event, the situations we describe below are more general-purpose tools that momentarily increase connection regardless of relationship type.

Principle 6: Easier to Observe Naturalistically in Ongoing Relationships

Probabilistically, because people interact with people they know more frequently than with people they don't know, these situations happen most often with others with whom they have regular interaction. Moreover, many scholars have laid the theoretical foundation for the case that because already-close relationships are more meaningful than those with most neighbors, coworkers, and certainly strangers, the situations themselves are more meaningful, intense, and, we emphasize, perhaps better prototypes of the phenomenon of interest than those between people who are not already invested in one another's welfare (Berscheid & Ammazzalorso, 2001; Clark & Mills, 1993; Reis, Collins, & Berscheid, 2000; Rusbult & Van Lange, 2008). As researchers who take the empirical approach of uncovering what happens naturalistically prior to imposing constraints of experimental design, then, we see (and have experienced) substantial advantages to studying the phenomenon of interest as it unfolds between people who know and are invested in one another, and who have regular interactions (also see Crocker, 2011). This might be roommates, good friends, or romantic partners.

Of course, there is different value in studying people at zero acquaintance, including the greater measurement variance because people have no expectation of how the person will act nor investment in them. Moreover, zero acquaintance is a great way to test hypotheses about the influence of bonding moments on the trajectory of a new relationship. Theoretically, however, in many cases, studying strangers may limit what can be known by producing smaller effect sizes, changing the meaning of a gesture, or—because they will not see one another again—limit ability to test for longer-term impact. In summary, relationship type is a not-to-be-overlooked tool for theory testing.

Principle 7: Time Matters

Following from the prior section, "regular interaction" implies "ongoing relationship." We have advocated for zooming in on the details of a given interaction, but, of course, one interaction—and the feeling one has when walking away from it—shapes the next. This includes possible influence on the likelihood, frequency, or quality of a subsequent interaction. For example, people we get along with better are simply more attractive to be around, which might influence how much time we spend with those

people (e.g., Kirchler, 1988), and good interactions on earlier occasions set the stage for a smoother interaction on future occasions (e.g., Van Lange, Ouwerkerk, & Tazelaar, 2002).

The specific implication from the concept of *promoting bonds* is to grow closer together over time. As such, adding a temporal perspective opens opportunities for predictions about trajectories (e.g., Algoe, 2019), as well as temporal dynamics (e.g., Chow et al., 2005). For example, we have already discussed how bonds develop over time, and the implication is growth in the quality of the relationship (e.g., Algoe, Fredrickson, & Gable, 2013). However, the reality of the time course of life and relationships is that situational factors may cause stress for one or both members of the relationship (e.g., a new job for one person, getting fired, a chronic illness, a house fire, an emergency in the extended family), or they may simply drift apart. As such, the value of naturalistic bonding opportunities such as sharing a laugh, feeling grateful, or a playful touch is to break through that monotony or stress and momentarily reconnect the pair, thereby resetting the trajectory.

Principle 8: Nature Provides

We argue that the most common moments observed in nature (below we review laughter, kindness, and touch) are likely to be central to the regulation and promotion of bonds precisely because they are so common in social life (cf. Wilson, 2004). As we have discovered, it is often more complicated than it looks at first blush (see Principle 2). As social psychologists, figuring out the specific mechanisms that contribute to bonding (rather than producing backfiring effects, for example; Algoe & Zhaoyang, 2015) is key to unlocking understanding of downstream consequences of close social bonds. One of us (S. B. A.) was once told by a friend who is an inventor that his best inventions come from carefully identifying what works well in nature, then adapting it. Likewise, everyday social behaviors and situations that have stood the test of time—across species and cultures, the more common, the better—stand to provide the biggest yield.

We note that for a time in social psychology, there was a push for counterintuitive findings

(e.g., Krueger & Funder, 2004). Instead, the approach we advocate is to ask, what are the situations that happen so frequently in daily life and seem so central to the fabric of high-functioning relationships that they are empirically overlooked, perhaps because people think it might be boring or "we already know that"? Do we? For example, when Algoe proposed that gratitude facilitates high-quality relationships, she got feedback from people inside and outside academia that we must already know that (one friend gave a blank look and said, "Duh"); yet no evidence for that proposition existed, and the extant, well-cited theoretical account would not have predicted most of what is now known about the role of gratitude in social life, supported by her early theorizing (Algoe, Haidt, & Gable, 2008). And when Kurtz proposed what it was about situations involving laughter that *best* promotes social connections (reviewed below), she and Algoe went on to review the literature assuming they would find plenty of evidence linking laughter in general and relationship quality, but instead they found a couple of correlations from early studies and an extensive body of literature on the related but quite distinct topic of humor (Kurtz & Algoe, 2015). We believe there is much more to gain from taking a close look at everyday behaviors as they play out in the context of ongoing relationships and that the next three sections illuminate this point.

How Theory Development Plays Out in Practice

Throughout the following three subsections we describe social behaviors deeply engrained in social life across species: exerting effort on behalf of non-kin (sometimes studied as "altruism" or "prosocial behavior" or simply "kindness"), touch, and laughter. For each, we show how use of the eight basic principles we described earlier can help get to the core of the situations under which these broad categories of behavior are most likely to promote a bond, and the value of studying both members of the dyad. The first behavior we discuss is first because we believe that most dyadic evidence regards the momentary bonding opportunities (so much, in fact, that there is good evidence for two steps

of a temporal process: what types of "kind gestures" cause gratitude in a recipient, and how a recipient's expression of gratitude for kind gestures circles back to the original benefactor); the latter two behaviors—touch and laughter—have been well studied for other outcomes (e.g., emotion regulation or socially *relevant* acoustic properties, respectively), yet here we focus on bonding-specific evidence that is known and what more can be learned from application of the previously discussed principles. Across the set, when evidence is available, we show how isolating environmental, biological, behavioral, and psychological mechanisms of opportunities ripe for bonding helps distinguish them from their close cousins, and why it matters.

Frequent Social Behavior: Expending Personal Resources on Someone Else's Behalf; Translation to Bonding: Situations That Produce Gratitude

For more than a century, scientists, anthropologists, mathematicians, and philosophers have been intrigued by the puzzle of why one person would ever expend energy or resources in ways that would facilitate the survival (and therefore reproductive fitness) of non-kin; that is, given finite resources, logically, one should only help or be kind to people most likely to help one pass on one's own genes; that is, genetic relatives or sexual/parenting mates. Yet across the animal kingdom, examples of "helpful" behavior toward non-kin abound. An elegant explanation for such effects emerged in the theory of reciprocal altruism (Trivers, 1971), following documentation across the animal kingdom that, actually, patterns emerge wherein favors are exchanged for favors. On the one hand, exchange partners like these are not to be ignored—they are essential to moving through the economy of daily life. Having a person who can be trusted not to "cheat" by defaulting on an obligation to help certainly will (must) facilitate survival.

But contemporary social psychology shows that, at least in humans, beyond exchange there is another qualitatively different type of relationship that can emerge from repeated interactions with another person: one that is communal (Clark & Mills, 1979, 2012). Early experiments documented that people have (at least) two different expectations about interpersonal norms:

Sometimes people do things for others because they assume the other person will do something for them in return, which is considered an exchange-based relationship, whereas at other times, people do things for others because they care about the other's needs and welfare—that is, they give *noncontingently*—which is a communal-based relationship (Clark & Mills, 1993; Mills & Clark, 1982). When people perceive they are operating with communal relationship norms, for example, they did something "just because," it is actually offensive if their relationship partner repays them: Benefactors operating on communal norms *liked the recipient less* if the recipient repaid the benefactor (Clark & Mills, 1979, Study 1). This distinction between types of relational norms matters because it is the communal relationship partners who will likely watch out for their close others and are most likely to be there for them when the going gets tough. Consistent with Basic Principle 5, above, although some relationship types are characteristically more communal than others (e.g., on average people are more communal with friends than with strangers) experiments between strangers document that anyone can be momentarily communal, that is, within a situation (Clark & Mills, 1993; Clark, Mills, & Corcoran, 1989). And consistent with Basic Principle 4, above, we assume it would be evolutionarily advantageous to be sensitive to cues about whether another party is such a person.

The key way to know whether someone is going to be a high-quality, communal relationship partner is to perceive him or her as being *responsive* to the self (Laurenceau, Barrett, & Pietromonaco, 1998; Reis et al., 2004). Responsive people act in ways that show they understand, validate, and care about the needs and preferences of the other person (Reis et al., 2004), and communal relationship partners are responsive to needs, by definition (Clark & Mills, 1979). Indeed, Reis and colleagues have argued that *perceiving* responsiveness in a social interaction partner—whether that partner is a robot, a therapist, friend, or lover—is foundational to fostering these much-needed close and intimate relationships (Birnbaum et al., 2016; Kleiman, Kashdan, Monfort, Machell, & Goodman, 2015; Shelton, Trail, West, & Bergsieker, 2010).

Putting these interpersonal theories together

with functionalist theories of emotion (Fredrickson, 1998; Keltner & Haidt, 1999; Tooby & Cosmides 1990), Algoe and colleagues (2008; Algoe, 2012) proposed that the emotion of gratitude is an evolved detection and response system to readily identify good social partners, then to promote a connection with those people. Here, by "good potential relationship partners," we mean people who have just demonstrated a willingness and ability to provide a thing of value to the recipient, without wanting anything in return (i.e., because they care); that is, the benefactor is communally responsive rather than seeking an exchange. These types of situations trigger the emotion of gratitude (Algoe, Gable, & Maisel, 2010; Algoe et al., 2008; Tesser, Gatewood, & Driver, 1968; Visserman et al., 2018). Notably, gratitude can arise from a wide variety of responsive gestures from another person, including sacrificing one's own wishes to go along with what a romantic partner wants to do, helping someone out of a jam, providing emotional support during a difficult time, giving a gift, arranging a fun event, making the person a special meal, and more. Algoe and colleagues argue that the emotional response of gratitude is a signal that there is something notable about that situation and this person in particular. Even if one is already in a relationship, gratitude momentarily reminds one of what one loves about the partner (Algoe et al., 2010); with a stranger, gratitude opens one's eyes to the positive qualities of the benefactor (Algoe & Haidt, 2009; Algoe et al., 2008).

In turn, when that signal is given about the good potential partner, Algoe and colleagues (2008) contend that gratitude does a second thing: It binds the grateful person more closely to this potential partner. This is because gratitude is a positively valenced emotional response to the situation. Emotions have been long considered as evolved adaptive responses to commonly recurring situations across millennia (Darwin, 1872; Keltner & Haidt, 1999; Tooby & Cosmides, 1990). They remain in existence to the extent that they continue to prove useful for survival, and serve to mobilize the body—mind, behavior, and biological responses—in a coordinated effort to take advantage of the situation (in the case of positive emotions such as gratitude) or solve the problem (in the case of negative emotions such as fear or anger). The

situation identified by a gratitude response is that the environment has just presented a person who might make a great (i.e., survival-promoting) relationship partner; the coordinated response serves to draw the grateful person and benefactor into that relationship (i.e., binding). Indeed, several studies suggest changes in the way grateful people think about and act toward their benefactors that would support both momentary and downstream bonds (e.g., Algoe & Haidt, 2009; Algoe et al., 2008; Bartlett, Condon, Cruz, Baumann, & DeSteno, 2012; Bartlett & DeSteno, 2006; Gordon, Impett, Kogan, Oveis, & Keltner, 2012; Kubacka, Finkeneaur, Rusbult, & Keijsers, 2011; Tsang, 2006), and other work shows that experienced gratitude toward a benefactor forecasts future reports of having a good relationship with that benefactor (e.g., the next day [Algoe et al., 2010] or next month [Algoe et al., 2008]).

Taking into account that these are likely to be ongoing relationships, the previous theorizing begged the question of whether gratitude has implications for the other person, too: Does it really shore up the relationship by drawing in the other person? If so, the beneficial social consequences are not just for the person experiencing the gratitude; gratitude helps promote a high-quality bond with the person who originally signaled that he or she values and is invested in the outcomes of the grateful person. For example, measured gratitude in one person is associated with a romantic partner's improved relationship connection from the prior day (Algoe et al., 2010), and a new friend's report of time spent with the grateful person a month later (Algoe et al., 2008). Additionally, building on the idea that it is likely the behavior of the grateful person that most reliably draws a benefactor further in to the relationship, and evidence that the most immediate and frequently reported consequence from feeling grateful is expressing it (e.g., Algoe & Haidt, 2009), many researchers have been using expressions of gratitude to test downstream consequences for the benefactor. These studies show that expressing further draws in the person who chose to be nice in the first place, by making him or her more likely to do nice things for the grateful person in the future (e.g., Grant & Gino, 2010; Rind & Bordia, 1995).

Yet, does this promote the bond, in the sense of making the benefactor him- or herself feel more satisfied in the relationship over time? Recent work zooming in on the situations in which one person's gratitude is expressed to another has helped reveal mechanisms for this process, too. Specifically, theory suggests that grateful people convey mutual responsiveness back toward their benefactors—that they understand, *validate,* and care about their benefactors, too (Algoe, 2012). Notably, this prediction is for a qualitatively different response than if the (grateful) person were merely expressing *joy* over the positive outcome from the situation; evidence suggests that joyful people engage in celebratory broadcasting of their own personal positive feelings ("Look at this cool sweater!"; Algoe & Haidt, 2009; also see Gable, Reis, Impett, & Asher, 2004). In one recent set of studies of couples as they actually expressed gratitude to one another live in our lab, we predicted that responsiveness would be conveyed to a benefactor by a grateful person drawing attention to the behavior that likely caused the gratitude in the first place, that is, by calling out the praiseworthiness of the benefactor's actions. Indeed, even after taking into account how much positivity was expressed about the benefit itself (e.g., "It made me happy" or "I loved it," akin to expressing the closely related emotion of joy), the extent to which the grateful person called out the praiseworthiness of his or her partner's behavior (e.g., "I feel like you're really good at that" or "It shows how responsible you are") was robustly associated with the benefactor's perception of the grateful person's responsiveness, as well as the benefactor's positive and loving feelings after the interaction (Algoe, Kurtz, & Hilaire, 2016). From across the literature, it is now clear that the grateful person's benefactor-oriented motivations and behavior can trigger the benefactor's perceptions that the grateful person understands, validates, and cares about him or her, too; in turn, this is precisely the perception from walking away from the interaction that should (and does) forecast a better future relationship with the grateful person (Algoe et al., 2013; Algoe & Zhaoyang, 2015).

Although much of the mechanistic work for gratitude in an interpersonal process involves people in close relationships, these ecologically valid and meaningful data added richness to understanding *how* altruistic/prosocial/kind gestures could promote all kinds of relationships, as well as to the literature on gratitude in general. Prior to 2008, gratitude studies had relied on economic principles of exchange: Person *A* does something intentionally (contrasted with *incidentally*) for person *B,* the level of its value to person *B* combined with person *A*'s effort/investment determines person *B*'s level of gratitude, and person *B*'s gratitude would determine *whether* person *B* repays person *A*'s effort in addition to the *level* of repayment (e.g., Tesser et al., 1968). Studies were typically conducted between strangers (e.g., Bartlett & DeSteno, 2006) and in fact, because people already in close (e.g., romantic) relationships were already connected, some might have argued that research in such a context would be less informative (e.g., McCullough, Kilpatrick, Emmons, & Larson, 2001). Instead, the evidence that has accumulated pushes back on that assumption. For example, using experience sampling between people in ongoing relationships, we demonstrated that *despite* the strong current or potential bond, the situations matter (Algoe et al., 2008, 2010). In other work, it was precisely because participants in ongoing relationships had experiences to draw from and the impact would be meaningful that we were able to get more ecologically valid understanding of what happens during expressed gratitude and its potential downstream consequences for the relationship (e.g., Algoe et al., 2013; 2017). Since showing these relational consequences within ongoing relationships and the communal principles underlying our theoretical approach, researchers have expanded the types of dependent measures used in stranger-based interactions, beyond repayment, showing that grateful people behaviorally mimic benefactors (Jia, Lee, & Tong, 2015), conform to their benefactors' goals (Jia, Tong, & Lee, 2014), and choose to spend time with the benefactor (Bartlett et al., 2012). All are more consistent with bids for affiliation or connection than with exchanging resources.

It is important to note that in his theory of reciprocal altruism, Trivers (1971) gave roles to psychological mechanisms for reciprocity that included gratitude and liking. Nothing we

have said really negates the things he said at the time—very little evidence was available. However, it adds both richness and predictive power to incorporate contemporary social psychological understanding of relationships as well as emotions to understand what transpires in the moments when one person does something kind for another: The gesture is evaluated for not only whether it benefits the self but also for the *type of relational intentions* of the benefactor—does it take into account the needs and preferences of the recipient and does the giver expect to get something from doing it? This distinction, in turn, should predict the positively valenced emotion of gratitude better than the negatively valenced emotion of indebtedness (Algoe & Stanton, 2012). Gratitude helps a person go beyond normatively expected exchange scripts to promote a qualitatively different type of relationship: a communal, more intimate, social bond, in which both members care about and watch out for the other person. In terms of survival, even beyond having someone to trade favors with, having someone who is motivated to watch your back and help you grow is a better value.

Frequent Social Behavior: Touch; Translation to Bonding: Affectionate Touch

The first interpersonal gesture humans encounter upon entering the world is touch. Then, across the lifespan, touch peppers our days, flavoring interactions between lovers, between friends, and from parents to children, doctors to patients, and salespeople to consumers. Touch, abundant throughout the entire animal kingdom, is often functional for survival, but some touch is *social* (Dunbar, 2010). For example, dolphins engage in a social behavior called "flipper-rubbing," affiliative touch that is posited to reestablish bonds following conflict (Tamaki, Morisaka, & Taki, 2006). Moreover, functional grooming is commonly observed in nonhuman primates, but a name exists for frequent intraspecies grooming that is social: *allogrooming*. In fact, primate species spend as much as 20% of their waking hours socially grooming—more time than is hygienically necessary (Dunbar, 1991; Lehmann, Korstjens, & Dunbar, 2007).

Within human childhood, researchers have concluded that touch is necessary for the child's survival and development for more obvious functional reasons (e.g., carrying: Feldman, Weller, Sirota, & Eidelman, 2003; feeding: Feldman, Keren, Gross-Rozval, & Tyano, 2004), as well as being integral to the "social, cognitive, and physical development" of a healthy child (Hertenstein, 2002, p. 70). As such, touch has been relatively well studied in this type of relationship, with researchers documenting a wide variety of functional touches (e.g., carrying: Anisfeld, Casper, Nozyce, & Cunningham, 1990; kissing, hugging, and patting: Landau, 1989) that coordinate biopsychosocial systems within the child. For example, touch regulates emotion in infants (Hertenstein & Campos, 2001), certain kinds of mother's touch elicit positive affect in infants (Stack & Muir, 1990), and touch from a caregiver can spur behavior changes in the infant, such as promoting or hindering exploratory behavior (Hertenstein & Campos, 2001; Moszkowski, Stack, & Chiarella, 2009). Finally, touch can regulate an infant's biological responses, such as down-regulating cortisol reactivity when infants are distressed (e.g., during a simulated maternal deprivation paradigm; Feldman, Singer, & Zagoory, 2010) or up-regulating vagal activity (e.g., through massage therapy of preterm infants; Field, 1998). Touch is relevant to the sociocognitive and physical development of a child and continues to functionally regulate broader social life (e.g., peers) during adolescence and beyond (Diamond, 2000; Field, 2010).

Throughout the child and adult literature, however, one kind of touch stands out as doing more: affectionate touch. *Affection* is a positive emotional state of fondness or liking directed toward someone (Floyd, 2006). Affectionate *touch* is its physical manifestation. It can be used in times of comfort or playfulness and may include pats on the back, hugging, kissing, stroking, and cuddling. In the adult literature, emerging evidence in relationship science has accrued on the *intrapersonal* benefits—psychological and physical—of affectionate touch (e.g., emotion regulation, risk for rhinovirus [common cold] infection; Cohen, Janicki-Deverts, Turner, & Doyle, 2015; Debrot, Schoebi, Perrez, & Horn, 2013, 2014; Holt-Lunstad, Birmingham,

& Light, 2008), but here we focus on how it can contribute to social bonding—the potential *interpersonal* benefits, using the basic principles to guide theorizing about how it presents a momentary opportunity for bonding in everyday life.

Indeed, evidence suggests that cumulatively over time, affectionate touch either marks or actually causes high-quality relationships (for a review, see Jakubiak & Feeney, 2017). For example, as in childhood, affectionate touch in adulthood signals secure attachment and felt security within a relationship (Jakubiak & Feeney, 2016). In a sample of dating college students, frequency of affectionate touch was positively correlated with both the individual's and his or her partner's satisfaction with the relationship (Gulledge, Gulledge, & Stahmann, 2003). For married couples, perceptions of how much a partner enacts affectionate touch corresponds with greater feelings of liking, love, and general relationship satisfaction (Dainton, Stafford, & Canary, 1994). A specific instantiation of touch—cuddling—is perceived as a nurturing (and nonsexual) aspect of romantic relationships (van Anders, Edelstein, Wade, & Samples-Steele, 2013). Finally, couples assigned to a "kissing" intervention for 6 weeks experienced better relationship satisfaction at the end of the study compared to couples who did not undergo the intervention (Floyd et al., 2009). The question of this section is, how do the momentary consequences of affectionate touch add up for long-term bonds? What happens in the moment?

Recall that our definition of affectionate touch stipulates that affection is directed from one person (person *A*) toward another (person *B*). In turn, we suggest that in the moment it occurs, affectionate touch feels *intimate*. While empirical evidence is just catching up, theory has long posited that affectionate touch is part of the intimacy process (Brennan, Wu, & Loev, 1998; Reis & Shaver, 1988), and Thayer (1986) even called affectionate touch the "gatekeeper of intimacy . . . the final bond between people" (p. 24). Physical proximity and touch are often assessed in subjective evaluations of intimacy (Burgoon, Buller, Hale, & DeTurck, 1984) or in psychometric measurements of intimacy and closeness (e.g., kissing; Berscheid, Snyder, &

Omoto, 1989; Waring, 1984), and receiving affectionate touch (or the relationship in which it is experienced) is often interpreted as intimate (Debrot et al., 2013; Hertenstein, Verkamp, Kerestes, & Holmes, 2006). Intimacy has long been hailed as foundational to relationship quality (Reis & Shaver, 1988; Reis et al., 2004). These moments of intimacy are the proposed mechanism through which affectionate touch contributes to the relational bond over time.

Affectionate touch implies someone will be there, both physically near and emotionally close (e.g., Coan, Schaefer, & Davidson, 2006; Jakubiak & Feeney, 2016), yet, importantly, research on its role in the bonding process is just beginning. Most studies on affectionate touch, while they are dyadic, focus only on the participant's report of his or her partner's affection toward him or her (e.g., how frequent, how affectionate). But this is just one side of the coin. What prompts person *A* to enact affectionate touch in the first place? For example, initial evidence reveals that affectionate touch is more likely in situations when people perceive their partner as being responsive to the self (Jolink, Chang, & Algoe, 2020). And what are the various manifestations of affectionate touch in everyday life? Does affectionate touch prompted by compassion, for instance, lead to the same interpersonal consequences—for partner *A,* partner *B,* or both—as affectionate touch triggered by a moment of playfulness? Is perceived intimacy the proximal mechanism through which all such moments solidify a bond between the two people? Additionally, the majority of studies on affectionate touch rely on recall of the frequency of touch provided the previous day or week, or daily diaries monitoring daily self-reported affectionate touch. Contrary to work on gratitude and laughter as described earlier and discussed next, very little work on touch has tested this behavior in action using real-time observations in the laboratory (though see Jakubiak & Feeney, 2019). We believe there is much to be learned. And given the pervasiveness of touch in everyday relationships, it is worth learning.

Intriguingly, uncovering these basic mechanisms may lead to deeper understanding of why good relationships are good for health. For example, in the "kissing" study we described ear-

lier, couples in the intervention group also had reduced psychological stress and serum cholesterol compared to couples in the control condition (Floyd et al., 2009). Very early evidence is surfacing on the protective role affectionate touch may have on one's physical health—perhaps by way of improved relationship quality (Floyd & Riforgiate, 2008; Grewen, Anderson, Girdler, & Light, 2003; Holt-Lunstad et al., 2008). This preliminary evidence recalls Harlow's (1958) conclusions about the value of affectionate connection for survival, even beyond physical nourishment: "We were not surprised to discover that contact comfort was an important basic affectional or love variable, but we did not expect it to overshadow so completely the variable of nursing; indeed, the disparity is so great as to suggest that the primary function of nursing as an affectional variable is that of insuring frequent and intimate body contact of the infant with the mother. Certainly, man cannot live by milk alone" (p. 677).

Frequent Social Behavior: Laughter; Translation to Bonding: Shared Laughter

A final fascinating behavior that shows up across mammalian species, including rats (Panksepp & Burgdorf, 1999, 2003) and apes (Berntson, Boysen, Bauer, & Torello, 1989; Vettin & Todt, 2005), is laughter. In human children, laughter typically develops by around 4 months of age (Sroufe & Wunsch, 1972) and by adulthood becomes such a frequent behavior that some estimates suggest people laugh an average of 18 times per day (Martin & Kuiper, 1999; Provine & Fischer, 1989). People laugh in all kinds of situations and at a wide variety of stimuli. For example, people may laugh when amused, nervous, or embarrassed.

However, one factor stands out in the data and guides theorizing of many researchers: Laughter is social (Scott, Lavan, Chen, & McGettigan, 2014). People are more likely to laugh when another person is present than when alone (Nwokah, Hsu, Dobrowolska, & Fogel, 1994; Provine & Fischer, 1989). Early researchers examining when laughter occurs in speech and conversations theorized important social affiliative signaling cues that come from laughter (see review in Gervais & Wilson, 2005). In fact, drawing from situations in which laughter occurs in rat

pups and chimpanzees, one widely endorsed conclusion is that naturally occurring, spontaneous laughter signals a nonserious situation that is safe (e.g., Gervais & Wilson, 2005; Wood & Niedenthal, 2018), with common examples that include teasing or play fighting; in turn, this facilitates growth via play, thereby facilitating the healthy development of children (Ginsburg, 2007) as well as adults (Panksepp & Biven, 2012). Although this may be one important consequence of an individual's social laughter, and may even *indirectly* promote bonds, this is not a direct route to bonding from laughter.

Moreover, recent work has started to uncover the rich array of social signaling that comes from laughter; it is a remarkable tool for the regulation of social life. For example, some researchers have focused on laughter that involves different facial musculature (e.g., Keltner & Bonanno, 1997); others document the impact of vocalized (vs. nonvocalized) laughter on eliciting positive emotion in the perceiver (Bachorowski & Owren, 2001), while still others have focused on the acoustic properties of vocalized laughter. This latter category reveals the complexity of this social behavior; for example, whereas some research has focused on the signal value of spontaneous (rather than fake) laughter (Bryant & Aktipis, 2014), other research shows that social status can be conveyed by laughter (Oveis, Spectre, Smith, Liu, & Keltner, 2016); finally, a compelling social functions account of laughter suggests distinct acoustic properties of laughs that convey reward, affiliation, and dominance for regulation of key social situations (Wood, Martin, & Niedenthal, 2017; Wood & Niedenthal, 2018). However, this rich body of research does not employ methods that empirically address the situations involving laughter that help people *connect* with one another in the moment, and that may cumulatively influence the strength of the bond between the two people.

Therefore, interested in the question of how laughter facilitates relationships, we took a different tack; to do so, we drew from several literatures to focus on a specific situation: when two people are laughing together. This is because, in addition to laughter being social in general, an interesting feature is that it tends to be contagious (Chapman & Wright, 1976; Provine, 1992; Smoski & Bacorowski, 2003). Though research-

ers call this phenomenon by different names, the point is that one person's behavior involuntarily draws out the same behavior in the social partner. Of course, there will be situations in which this does not happen (e.g., when someone else is laughing at one's own expense), and researchers have documented that shared laughter is more likely to happen when one knows the other person better (Smoski & Bachorowski, 2003); we return to this later. Intriguingly for our research question, outside observers from all societies can judge the strength of a social bond between people laughing together (i.e., whether friends or strangers), merely based on hearing an audio clip (Bryant et al., 2016). For now, the question is, psychologically, what happens for the people in that moment as they laugh together? Is shared laughter an opportunity for bonding?

Three different literatures lead to the prediction that the people will see themselves as more similar to one another—even if momentarily—after sharing laughter, and a wide body of literature suggests that perceived similarity makes people feel more connected and closer (Montoya et al., 2008). First, spontaneous laughter in particular is believed to be rewarding to both the laugher and the person who hears (or elicits) the laugh (Wood & Niedenthal, 2018), and this has implications for connection: Reward is experienced as positively valenced affect, which implies that in the moments it is experienced, the worldviews of both individuals are broadened (e.g., scope of attention; Fredrickson & Branigan, 2005); in turn, this can make the other person seem more similar to the self (Johnson & Fredrickson, 2005; Waugh & Fredrickson, 2006). Second, laughter is often caused by humorous, unique situations that are defined as involving "benign violations" of expectations (McGraw & Warren, 2010), so laughing together at the same situation would naturally imply that two people see the world in the same way—that they are like-minded. The third conjecture comes from the neuroscientific literature that focuses on the contagion of laughter, with researchers positing a role for sensory–motor simulation (e.g., McGettigan et al., 2015) or mirror neurons (Rizzolatti & Craighero, 2004), with one researcher suggesting the process creates a "shared manifold of intersubjectivity" (Gallese, 2003) between the two people;

that is, the two are experiencing the world in the same way. Relative to unshared laughter, then, laughing together is expected to trigger the perception of similarity with the other person. And due to the violation of expectations that triggers a laugh (McGraw & Warren, 2010), the information in these shared moments should be particularly salient, so that people sharing laughter should also see themselves as more similar than people sharing different pleasant experiences.

Indeed, several studies now provide evidence that shared laughter uniquely promotes social bonds and that, moreover, a key mechanism for this effect is the influence of shared laughter on perceptions of similarity with the other person. In one study, romantic couples talked about how they first met, which generated a lot of laughter (Kurtz & Algoe, 2015). To take a snapshot of the role of laughter in the couple's social bond, each person's laughter throughout the conversation was coded, and moments when both were laughing simultaneously were quantified separately from moments when either member of the couple was laughing alone. Consistent with the prediction, the proportion of time the partners spent laughing together was significantly positively associated with the extent to which the participant reported greater self–other overlap (as a proxy for perceived similarity; see the Inclusion of Other in Self Scale; Aron, Aron, & Smollan, 1992). This was true even when taking into account the extent to which either or both members of the couple laughed independently during the conversation, thereby supporting the prediction about the unique situational features involving laughter most likely to facilitate bonding (Kurtz & Algoe, 2015).[1] Though that study was correlational, another study used a zero-acquaintance paradigm to address causality. During a purported Web-based video chat with someone they thought was another participant (but who was actually a prerecorded confederate), participants were randomly assigned to view stimuli that (1) elicited shared laughter with the confederate (i.e., the other "participant"), (2) elicited laughter to the same degree as the first condition but was not shared with the confederate (who was watching the same stimuli), or (3) elicited shared, mildly pleasant affect with the confederate. Immediately after the experience, participants in the shared

laughter condition reported perceiving greater similarity between themselves and the partner compared to participants in the other two conditions. In turn, the increase in perceived similarity led to increased liking and interest in affiliating with the zero-acquaintance person (Kurtz & Algoe, 2017). This experiment provides the first evidence of which we are aware that shared laughter causally improves a key mechanism for promoting bonds.

Whereas other work has posited several indirect routes through which laughter could promote relationships, or might *facilitate* social life in important ways (Oveis et al., 2016; Wood et al., 2017), in this review we focus on situations that may directly promote bonds in the moments they are occurring. Relevant to Basic Principle 6, we first studied shared laughter in existing dyads, where we assumed we would see frequent and spontaneous (i.e., prototypical) laughter, then shifted to zero-acquaintance pairs to provide the first test of our causal hypotheses (Kurtz & Algoe, 2015, 2017). At the same time, given the small number of studies focusing on dyadic laughter, we believe much more work is needed on the role of shared laughter in creating momentary social connections and its implications for the long-term functioning of high-quality social relationships. For example, shared laughter might amplify positive emotions or, in some situations, decrease negative emotions, which would be two additional mechanisms through which shared laughter could bring people closer together (see Kurtz & Algoe, 2017).

One question is about the situations most likely to give rise to shared laughter in the first place. We predict that shared laughter is more likely to occur when people feel safe, perhaps because both people perceive the situation is safe and spontaneously break out laughing at precisely the same time or, more likely, we suspect, because one person's spontaneous laugh gives a signal that it is a safe and playful situation (e.g., Wood & Niedenthal, 2018) that then works as a behavioral bid or invitation for the other person to join in. When this happens, both people get a momentary boost from the connection. While the current evidence does not take into account what the two people are laughing at, we do assume the behavior of laughter

builds on biological architecture for bonding and provides a signal—even if brief—of similarity. This means that laughing at a sexist joke with a boss or colleague—even if involuntary and explicitly disavowed—likely makes the two people feel momentarily more similar than if no shared laughter occurred. This means laughter may be helpful in creating common ground in situations where people are negotiating social standing and group membership. Regardless of the relationship type, our analysis of the behavior of laughter suggests certain situations in which it likely directly facilitates bonds; in turn, these moments of shared laughter in ongoing relationships can set the stage for what comes next.

Are There Downsides?

As we stated at the outset, in this chapter we have focused on situations—both general behaviors (e.g., laughter) and the contextual features of those situations (e.g., shared laughter)—most likely to *promote* social bonds because we believe these situations have been relatively neglected in the empirical literature on relationships, yet provide great opportunity for understanding how people get into (and then sustain) close social bonds. Along the way, our focus on what promotes bonds helps illuminate features of situations that might make an ostensibly beneficial behavior, such as laughter, undermine the opportunity for bonding, such as laughing at another person's expense. Another example is when one person does something kind for another: When the beneficiary thinks the benefactor wants something in return for his or her actions, it may yield the negative emotion of indebtedness rather than the positive, bond-promoting experience of gratitude (Watkins, Scheer, Ovnicek, & Kolts, 2006); that is, one of our goals in this chapter is to show that through careful theorizing and rigorous empirical work, we can unseat assumptions to identify features of situations that optimize connections.

That said, there is much more to do. Certain individual differences or situations, such as low self-esteem, having an insecure attachment style, or feeling unsafe in the moment, may make these situations harder to come by or cause them to backfire. Moreover, much more

work is needed with both members of the dyad. For example, we have a pretty good understanding of what happens when expressions of gratitude go well (e.g., Algoe et al., 2013, 2016, 2017; Williams & Bartlett, 2015), but what happens when one person thanks another and the person being thanked has a negative reaction? What if that person conveys that the other person is *wrong to be grateful* for some reason? Such moments of misplaced gratitude may arise if the benefactor did the kind thing for different reasons than the grateful person assumed, or because he or she has different norms about what is expected in this particular relationship (e.g., an exchange norm, expecting reciprocity, rather than a communal norm, in which the benefit was provided noncontingently). Similarly, affectionate touch can be met with distress or negative affect, especially if it is perceived as a sexual initiation cue by women who experience sexual pain (Curtis, Eddy, Ashdown, Feder, & Lower, 2012; Hinchliff, Gott, & Wylie, 2012). Empirically testing such boundaries would help to refine theoretical understanding of opportunities for creating bonds from these moments.

Finally, this focus on moments of connection is not to overlook the fact that (1) it is risky to try to create new relationships (e.g., one might get rejected) and (2) once bonded (i.e., once one is in a trusted, high-quality relationship with another), then negative personal and interpersonal consequences can loom larger. For example, negative emotions can be more intense regarding people we care about; these include jealousy, hurt from a betrayal of trust, and sadness at the loss of a loved one. Nonetheless, the preponderance of evidence suggests that, on balance, it is worth the risk because of the myriad long-term benefits that come from high-quality bonds.

Implications of Reconsidering the Concept of "Promoting Bonds" and Mechanisms for the Promotion of Bonds

Though social psychologists have long studied the basic features of situations that bring people together or drive people apart (e.g., Tajfel & Billig, 1974; Walster, Aronson, Abrahams, & Rottman, 1966), in this chapter we wanted to take a fresh look at the concept of a bond. To do so, we integrated literature from across species and considered both the interpersonal process as it unfolds for each member of the dyad in real time and the cumulative impact such moments may have over time in ongoing relationships. We think this is an especially useful time in the field to do this because of evidence we reviewed earlier that has been strongly influenced by two fundamental theoretical perspectives that have emerged in the relationships literature in the last 15–20 years and, we believe, should really enhance researchers' ability to develop rich theory and strong hypotheses regarding the *promotion of bonds*.

One of these theoretical perspectives is at least partially reflected in de Waal's (1989) observation that bonded individuals are willing to exert effort to spend time with their bondmates; that is, they *approach* the other. In the social psychological literature, Gable and her colleagues have drawn attention to the appetitive social goals system as an important motivational system underlying social interactions (e.g., Gable & Gosnell, 2013; Gable & Impett, 2012; Gable & Reis, 2001; Gable, Reis, & Elliot, 2003). Now, evidence from a range of studies shows that when people do things for social approach goals—that is, because they want a good social outcome—as opposed to avoiding a bad outcome, they have better personal and relational outcomes on a wide range of dimensions (see Gable & Impett, 2012). Like acknowledging that Harlow's infant monkeys would simply rather spend time in the positive presence of their cloth-monkey mothers, we believe that researchers interested in how humans form and maintain social bonds will make the fastest gains by explicitly acknowledging the role and value of these motivational—and likely biological—distinctions between motivations to avoid bad outcomes and to approach good outcomes from interacting with others.

A second, yet related, topic is the work of Fredrickson and colleagues on positively valenced emotional states (e.g., Fredrickson, 1998; 2013; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Kok et al., 2013), which highlights the core cognitive changes and functional value of positive relative to negative valence in situations. As we mentioned in the previous para-

graph, seeking positive emotional states might drive some opportunities for bonding. Moreover, positive emotions that result from social interactions may both facilitate the momentary connection between the two people and lay the groundwork for the building of that social relationship over time (e.g., Waugh & Fredrickson, 2006). Explicitly acknowledging that other people are key sources of positive emotions and incorporating theorizing about positive emotions into predictions has led us to more rapid progress in considering what makes for high-quality, close relationships in our own work, and in the topics we have reviewed here (also see Algoe, 2019).

In closing, there is insurmountable evidence that social bonds are critical to survival. The basic principles we have offered are intended to serve as a guide to selecting research questions, developing theory, and testing hypotheses about the features of one-time social interactions that cumulatively help humans develop and maintain high-quality social bonds. We believe that further illumination of the specific situations and mechanisms through which humans directly *promote bonds,* in turn, will open doors to discovering additional pathways to health through relationships that go well beyond considering deficits that come from the lack of bonds (e.g., Luo, Hawkley, Waite, & Cacioppo, 2012) or from broken bonds (Sbarra & Coan, 2017); this might include the possibility that spending time alone *increases* cumulative metabolic load relative to spending time in the presence of a trusted partner (cf. Beckes & Coan, 2011), potential physiological benefits of affectionate touch (e.g., Holt-Lunstad et al., 2008), and more. In short, taking a closer look the concept of a bond, and what it means to promote it, stands to open new avenues of inquiry that will inform basic understanding of close relationships and may ultimately lead to fuller understanding of why these close relationships can lead to longer life.

NOTE

1. In fact, in some models, this "solo laughter" was significantly *negatively* associated with perceived self–other overlap with the partner after statistically taking into account the shared laughter in the conversation (Kurtz & Algoe, 2015). This negative association suggests a potential "dark side" to certain situations involving laughter and reinforces our message that it is important to identify the specific features of the situations involving these ostensibly positive behaviors (e.g., laughter) that optimize opportunities for bonding.

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