

The Self-Expansion Model of Motivation and Cognition in Close Relationships

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Abstract

This chapter surveys the self-expansion model as it relates to romantic, familial, and other close relationships. First, we discuss how the model can be expressed as two related but unique fundamental principles relevant to relationships: (1) there is a basic motivation to expand one's potential efficacy, and (2) one way people seek such expansion is through close relationships in which the other's resources, perspectives, and identities are to some extent "included in the self." Focusing on the motivational principle, we explore its foundations; its relation to other major relationship models; and how self-expansion research has been applied to initial attraction, "falling in love," shared self-expanding activities, partner support for own expansion, infidelity, and dissolution, as well as, briefly, to nonrelationship contexts. In the second half, we focus on the principle of inclusion of other in the self. We explore its foundations; measurement techniques such as the well-known Inclusion of Other in the Self (IOS) Scale, as well as other explicit and implicit approaches; the predictors of inclusion; the effects of inclusion; and, briefly, applications of the inclusion principle beyond personal relationships. Having discussed these two fundamental principles, we consider future directions and the model's broader relation to developmental, evolutionary, and classic philosophical perspectives.

Key Words: self-expansion motivation, relationship models, love; infidelity, relationship dissolution, individual self-expansion, inclusion-of-other-in-the-self principle, motivational principle

The self-expansion model (Aron & Aron, 1986; Aron & Aron, 1996; Aron, Aron, & Norman, 2001) was developed to address central theoretical and applied questions about the basic processes underlying human experiences and behavior in the context of close relationships (and has since been extended to other contexts). Very briefly, the model posits, first, that people seek to expand their potential efficacy, and second, that a major way they do this is through close relationships. In this chapter, we will discuss these as two fundamental principles relevant to relationships:

1. **Motivational principle:** Again, people seek to expand their potential efficacy—that is, the model posits that one of the most basic human motives is what has previously been described

by other scholars as exploration, opportunity, effectance, self-improvement, curiosity, competence, or a broadening of one's perspective.

2. **Inclusion-of-other-in-the-self principle:** One way in which people seek to expand the self is through close relationships because, in a close relationship, the other's resources, perspectives, and identities are experienced, to some extent, as one's own. That is, the other is to some extent "included in the self."

The first half of the chapter focuses on the motivational principle: its foundations; how self-expansion relates to two closely relevant major relationship models—interdependence and attachment theories; and an overview of self-expansion motivation research in the contexts of initial attraction, "falling

in love,” shared self-expanding activities, partner support for own expansion, infidelity, and dissolution, with a brief section on self-expansion in non-relationship contexts. The second half focuses on the inclusion-of-other-in-the-self principle: what it means to include another in the self, approaches to measuring this inclusion (both the well-known Inclusion of Other in the Self (IOS) scale and a number of other self-report and nonobvious methods), research on its predictors (e.g., mutual self-disclosure, taking other’s perspective, various priming methods), research on its apparent effects (including cognitive, physical, and physiological), and (briefly) some extensions of the model beyond personal relationships. After discussing these two themes, we consider potential future directions and offer some final thoughts.

Before turning to these sections treating each of the principles separately, we want to emphasize that we see these as quite distinct. That is, although we consider them to be systematically and centrally related to each other, they are not at all the same, either conceptually or in terms of assessment. Table 5.1 shows a side-by-side comparison of some key attributes of these two principles. The desire to expand the self accounts for the human tendency to seek out novel resources,

perspectives, and identities; inclusion refers to the incorporation of those aspects of another person into the self. According to the model, there is a general motivation to expand the self’s ability to accomplish goals, and one common way we seek (and find) such expansion is through a close relationship in which the self is expanded by having access to the other’s physical, social, and intellectual resources; his or her current and recalled perspectives; and his or her individual and social identities. By taking these on as also one’s own (to some extent) resources, perspectives, and identities, these become available, employable, and useful to the self. By having ready access to these things, our general efficacy increases. We become more able to engage our social and physical environments, to create and enjoy, to comprehend more, and if one takes an evolutionary perspective, to promote our genetic fitness. That is, the motivation for self-expansion leads to a desire to include others in the self in order to expand the self; the actual expansion of the self occurs when a relationship develops (and can occur in other situations as well). This point has sometimes been missed in the literature: inclusion is not the same as the motivation to include.

Self-Expansion Motivation

Once again, the first overarching principle of the self-expansion model is that people seek to expand the self in the sense that they seek to enhance their potential efficacy by increasing the resources, perspectives, and identities that facilitate achievement of any goal that might arise. The emphasis here is not on a motivation for the actual attainment of goals, but rather on a motivation to accrue the resources and such that make it easier to attain goals. Such resources, perspectives, and identities include knowledge, social status, community, possessions, wealth, physical strength, health, and everything else that can facilitate goal attainment.

Although there are other implications of the motivational aspect of the self-expansion model (which we will consider briefly when we consider directions for future research), the main focus of research to date has been on the central idea of the desire to expand. This abstract idea can be made more concrete by considering a measure developed by Lewandowski and Aron (2002) to assess the extent to which an individual experiences self-expansion in the context of a close relationship, the Self-Expansion Questionnaire (SEQ). The SEQ focuses on the extent to which one’s relationship

Table 5.1 Distinguishing Self-Expansion Motivation from Inclusion of Other in the Self

	Self-Expansion Motivation	Inclusion of Other in the Self
Definition	Motivation to increase resources, perspectives, and identities in order to enhance ability to accomplish goals	Treating another person’s resources, perspectives, and identities as if also one’s own
Subjective experience	Desire, goal orientation; during process of expanding, if rapid, exhilaration	Closeness; experiencing other’s outcomes and responses as one’s own
Type of process	Motivation	Cognition
Example measures	Self-Expansion Questionnaire; activation of neural motivation/reward systems	Inclusion of Other in the Self Scale; cognitive confusions of self’s and other’s traits

provides new experiences, introduces new perspectives, leads to learning new things, and makes the individual a better person. Sample items include “How much does your partner help to expand your sense of the kind of person you are?” “How much does your partner increase your ability to accomplish new things?” and “How much do you see your partner as a way to expand your own capabilities?” Consistent with the idea that relationships are more rewarding if they satisfy the basic desire for self-expansion, those who score higher on the SEQ also report higher levels of relationship satisfaction and commitment (Lewandowski & Aron, 2002; Nardone, Lewandowski, & Le, 2008).

It is also important to note that our model emphasizes the reward value of the *experience* of self-expansion, and also that when that rewarding experience is rapid, it generates a sense of exhilaration and passion. Most experiences of rapid self-expansion involve novelty or challenge and are the opposite of mundane or boring experiences. Perhaps for that reason, novelty and challenge, even in situations that provide minimal actual new resources, often create a sense of rewarding exhilaration.

Experienced self-expansion has at least two sources: (1) directly experiencing or anticipating the acquisition of new resources, perspectives, and identities (especially when this acquisition is rapid or intense enough to be noticed); and (b) sharing novel/challenging activities of any kind (as long as they are not overwhelming or highly stressful), given the sense of expansion associated with them. Indeed, as will be clear from the research reviewed below, self-expansion motivation has been studied in both of these ways—the acquisition of new resources, perspectives, and identities (such as knowledge, social status, or relationships) and the experience of novelty and challenge, usually found in what would be called “exciting” activities.

Having summarized the key ideas of the motivational aspect of the self-expansion model, in the rest of this subsection, we first briefly consider the relation between this motivation and other prominent theoretical approaches in the relationship field, after which we turn in more detail to each of the major contexts in which this motivation has been systematically studied.

Relation of Motivational Aspect to Other Relationship Models

The motivational aspect of the self-expansion model arose originally from classic work on

motivation and growth models (e.g., Bandura, 1977, Maslow, 1967), as well as evolutionary theory, and from Eastern and Western philosophy. (For a discussion of the background and foundations of the model, see Aron and Aron, 1986.) In the context of this *Handbook*, however, we focus on links between the motivational aspect of the model and other contemporary theoretical approaches to relationships, focusing specifically on what are perhaps the two most influential conceptual frameworks in the field: interdependence theory and attachment theory. (There have also been some parallel developments relevant to self-expansion motivation, such as Baumeister & Bratslavsky’s, 1999, model of intimacy and passion; the recent general interest in the role of approach motivation in relationships, e.g., Gable, 2006; and the role of relatedness in Deci & Ryan’s, 2000, self-determination theory.)

Classic interdependence theory (Kelley & Thibaut, 1978) focuses on the ways in which expected benefits and costs guide behavior in relationships. From this perspective, the self-expansion motivation idea offers specification of the nature of expected benefits or costs. In terms of more recent elaborations of the interdependence approach (e.g., Chapter 3, this volume; Rusbult, Coolsen, Krichner, & Clarke, 2006), there is a particularly close parallel with the “Michelangelo phenomenon” (Rusbult, Finkel, & Kumashiro, 2009), which we return to specifically later in the chapter. (For a more general brief elaboration of the links of self-expansion with interdependence theory, see Aron & Aron, 2010).

Regarding attachment theory, Bowlby’s (1969) basic idea, as expressed in the secure-base scenario, assumes an exploration motive that we would describe as a self-expansion motivation-based process. Further, the different attachment-based mental models of relationships that develop can be understood in part as different solutions to the need for self-expansion, given an individual’s attachment experiences. A person with a secure mental model, for example, should be confident of support during self-expansion. A person with an avoidant mental model has likely learned that intimate others cannot be counted on to provide a secure base for self-expansion (but self-expansion can still proceed by “bracketing” the need for intimate others and substituting for them nonintimate others, who can be safely used for self-expansion). A person with a preoccupied or anxious-ambivalent mental model has likely learned that the availability of a secure base is tentative and can be withdrawn at any time (so that self-expansion proceeds through continued

efforts to develop a secure base and acquire the support and approval of some intimate other to permit further self-expansion).

The link of attachment style with self-expansion motivation is also illustrated in a large questionnaire study (Aron, Aron, & Allen, 1998) of unreciprocated love. As these researchers hypothesized, based on the motivational aspect of the self-expansion model, intensity of unrequited love was independently predicted by three goal-directed factors: (1) perceived desirability of a relationship with the partner, (2) desirability of the state of being in love, even if it is unrequited, and (3) perceived probability at the time of falling in love that a relationship would eventually develop. The key finding relevant here was that the first two effects were strongly moderated in predicted directions by attachment styles. The desirability of the specific partner/relationship was especially important for anxious individuals (predicted because their parents' and/or previous romantic partners' inconsistent caregiving provided random reinforcement that led to strong idealization of the other, especially when the other was not available); however, the state of being in love, even if unreciprocated, was especially desirable for avoidant individuals (who should have little desire to have a relationship). (For a more detailed discussion of the links of the self-expansion model with attachment theory, see Aron & Aron, 2006.)

Contexts of Research on Self-Expansion Motivation

Having briefly considered its major conceptual ideas and links with two major relationship models, we now review research on self-expansion motivation, which we have organized by the different relationship contexts in which it has been systematically studied: initial attraction, entering relationships and falling in love, shared novel/challenging activities in ongoing relationships, partner support for one's own self-expansion in ongoing relationships, infidelity and attention to alternatives, and relationship dissolution. We conclude this review with a brief summary of the few studies that have examined individual (nonrelationship) self-expansion motivation.

Initial Attraction

The motivation to expand the self suggests that a potential relationship partner would be desirable to the extent that he or she is perceived to provide opportunities for self-expansion. There is a long-standing finding in social psychology that similarity facilitates

attraction (Byrne, 1971). Yet, a highly similar partner may not provide as much potential for self-expansion (or as much experienced novelty and challenge) as a partner who is dissimilar. One way to reconcile these possibilities is to posit that similarity serves primarily as an indicator that a relationship with a potential partner is likely to be successful. Because almost any relationship is likely to provide some degree of self-expansion, when relationship formation is otherwise uncertain, the model suggests that similarity, as an indication a relationship is likely to develop, is desirable. However, similarity would be irrelevant or a disadvantage if a relationship was likely to develop. Aron, Steele, Kashdan, and Perez (2006) tested this possibility in the context of same-sex friendships. Adapting the basic Byrne paradigm, student participants listed five of their central interests. One week later, they received a packet ostensibly completed by another same-sex student from a different class at the same university. Packets were provided under one of two conditions. In the high relationship likelihood condition, participants believed they were matched with this person based on a computer program that created pairings in which students would be highly compatible. Those in the unknown relationship likelihood condition were told the matches were random. In each condition, the information portrayed the matched partner as having interests that were either similar or dissimilar to the interests the participant had listed at the first testing. As predicted, when relationship likelihood was unknown, participants preferred similarity. However, when the relationship was likely, participants (especially men in this study) preferred dissimilarity. Thus, consistent with the self-expansion model, when the probability of forming a relationship is unknown, similarity is desirable because it suggests the relationship will develop and might provide expansion; but when relationship development is highly likely, differences can be desirable because they may provide expansion.

Wright, McLaughlin, and Brody (2004) examined the role of self-expansion motivation in the context of initial attraction, focusing on the idea that differences would be especially important in directing attraction when the desire for self-expansion was high. Their study applied the idea of differences in attraction of majority group members toward minority group individuals. They employed an innovative paradigm in which they manipulated the intensity of participants' self-expansion motive by providing bogus feedback from a supposed personality measure. In the high self-expansion motive condition, participants received feedback

from the personality test indicating that the participant felt that his or her life had become routine and lacked excitement, novelty, and challenge. In the low self-expansion motive condition, the feedback indicated that the test showed the opposite, that the participant felt overextended and that the immediate complexities of the participant's life were nearly overwhelming. Following this manipulation, in what participants believed was an unrelated part of the study, they selected from a list of other students the person with whom they would most like to work on a joint task. As predicted, white participants in the high self-expansion motive condition selected more potential partners with clearly Asian and Latino names than did white participants in the low self-expansion motive condition. These data suggest that that even with differences as great as long-standing social identities, the motivation to expand the self may generate greater attraction toward others who are different from the self.

In yet another line of work generated by the self-expansion motivation idea, Zhou and Wright (under review) tested an extension of the basic model they call "directed self-expansion." They proposed that people are especially attracted to potential partners who are perceived to have (and thus potentially could be included in one's self in a relationship) qualities that represent aspects of one's ideal self. Participants in their study first rated items to describe their actual and ideal selves. Later, participants rated their attraction toward a potential friend who was portrayed as either similar to or different from them on traits on which they indicated either a high or no actual/ideal self-discrepancy. Consistent with their model, attraction was lowest when the potential partner had qualities different from the self that were contrary to one's own ideal self, but highest when the potential partner had qualities different from the self that were part of what one would ideally like to be—that is, characteristics that would expand the self toward one's self-ideal.

In sum, the studies we have just reviewed focus on the idea that people are more attracted to others who are perceived as offering opportunities for expanding the self—particularly when relationship formation is uncertain, desire for self-expansion is high, and the potential expansion is toward one's ideal self.

Entering Relationships and "Falling in Love"

Forming a new relationship should provide ample opportunities for rapid self-expansion through including other in the self as well as the process of

relationship formation itself. When the formation is rapid (as when "falling in love"), the novelty and challenge of the expansion is likely to create considerable exhilaration, which is also likely to be associated with the partner. To examine the basic hypothesized effect of expansion of the self when entering a new relationship, participants in one pair of studies provided assessments of their sense of self in terms of self-esteem, self-efficacy, and spontaneous self-concept every 2 weeks over a 10-week period (Aron, Paris, & Aron, 1995). To assess spontaneous self-concept, participants also answered the open-ended question, "Who are you today?" In addition, they indicated on a long list which of any significant life events they had experienced in the past 2 weeks, including whether they had "fallen in love." Results from both studies indicated that for those who had fallen in love, there was a significantly greater increase in the self-concept from before to after falling in love, compared with both other time periods when they did not fall in love and compared with other participants who did not experience falling in love. This greater increase after falling in love was reflected in the number of words listed and the number of different self-categories included in their spontaneous self-descriptions, as well as in their self-efficacy and self-esteem. Thus, falling in love literally expanded the self in terms of the contents of the self-concept, one's evaluation of the value of one's self (self-esteem), and one's evaluation of one's ability to accomplish goals (self-efficacy).

A major line of recent research relevant to the self-expansion model's notion that falling in love represents rapid self-expansion—and especially the great anticipated reward that the partner fallen in love with provides—has focused on the neural correlates of early-stage romantic love (for a review, see Ortigue, Bianchi-Demicheli, Patel, Frum, & Lewis, 2010; for a more general review of "relationship neuroscience," see Tomlinson & Aron, 2012). The idea in most of this research is that the rapid self-expansion of early-stage intense romantic love represents a powerful motivational state—the intense desire for union with the loved one—that is represented in the brain by activation of the dopamine reward system. This idea is consistent with the notion that human romantic love is an evolved version of selective attraction seen in a variety of nonhuman animals (see Fisher, 1998).

Several studies using functional magnetic resonance imaging (fMRI) now lend relatively direct support to the dopamine reward system hypothesis in humans. fMRI technology scans the brain

to register blood flow changes in any or all brain regions that are either increasing or decreasing their metabolic activities. Bartels and Zeki (2000) scanned a group of participants who reported being “truly, deeply, and madly in love” (p. 3829), and compared their brain activation when looking at the beloved partner versus when looking at familiar friends. They found a specific constellation of brain activity associated with looking at the beloved, including activity in the caudate nucleus. The caudate nucleus is largely associated with motivation and goal-oriented behaviors; 80 percent of receptor sites for dopamine reside here, and the caudate is a central part of the brain’s “reward system,” the system associated with the identification of, focus on, and motivation to win rewards. These findings support the idea that passionate romantic love is primarily a motivation system associated with dopamine pathways in the reward system of the brain.

Aron et al. (2005) conducted a similar study with participants who were even more recently and even more intensely in love than those in the Bartels and Zeki (2000) study. In the Aron et al. study, comparison of activations when looking at and thinking about the beloved (vs. looking at and thinking about a familiar, neutral individual) again yielded significant activation in the caudate. Indeed, in this study, the caudate activation was especially strong. Particularly important, Aron et al. also found significant activity in a region of the right ventral tegmental area, which is primarily associated with the production of dopamine and its distribution to several other brain regions. A replication of the Aron et al. study in China found nearly identical results (Xu et al., 2011). The Xu et al. findings also provide direct evidence for the cross-cultural generalizability of the effects, thus supporting the notion that this motivational interpretation of falling in love from the self-expansion model may represent a very basic process.

Other fMRI studies using this paradigm have found that these motivational effects are sufficient to offset physical pain (Younger, Aron, Parke, Chatterjee, & Mackey, 2010) and to offset the craving for tobacco among long-term smokers (Xu, 2011); and they even are manifest when subjects are still in love with someone who has rejected them (Fisher, Brown, Aron, Strong, & Mashek, 2010). Further, an fMRI study using a different paradigm (subliminal presentation of a loved partner’s name versus a neutral friend’s name) has also found strong activation in the dopamine reward system associated with love and passion for

the loved partner (Ortigue, Bianchi-Demicheli, Hamilton, & Grafton, 2007).

An interesting recent extension of this work suggests that the central motivation/reward feature associated with “falling in love” in early-stage relationships is also seen in long-term couples who report being very intensely in love with their partner (and also reporting very high levels of intensity, engagement, and sexual interest). Acevedo, Aron, Fisher, and Brown (2012) replicated the basic Aron et al. (2005) design, but with a sample of long-term (mean = 21.4 years) married individuals who reported intense feelings of romantic love for their partners. Consistent with the idea that intense love in long-term pairings is similar to early-stage passionate love, and providing additional support for the more general idea from the self-expansion model that intense passionate love is a motivational experience (specifically representing desire to enhance the self by including other), there was a clear common element of activation of the dopamine reward system.

Shared Novel and Challenging Activities in Ongoing Relationships

The most extensive body of research to date on the motivational aspect of the self-expansion model has focused on shared self-expanding activities (Aron, Norman, Aron, & Lewandowski, 2002). Early in a relationship, rapid self-expansion with a partner is almost inevitable. However, partners can also continue self-expanding in the context of an ongoing relationship. A relationship can produce the experience of self-expansion based on the partner’s ability to be particularly interesting and expanding, through the partner’s support of individual self-expansion, or through the partners engaging together in activities that can lead to self-expansion or the kind of excited engagement typically experienced with rapid self-expansion. This last possibility has been studied the most.

Spending time together is a commonly reported maintenance strategy for married couples (Baxter & Dindia, 1990). The self-expansion model suggests there should be particularly strong benefits from participating together in activities that are experienced as self-expanding by virtue of being novel and challenging (and that there may be little or no benefit to the relationship from shared activities that are neither self-expanding nor generate the feelings of excitement associated with rapid self-expansion). In the first study to test this hypothesis, married couples were randomly

assigned to participate in exciting, pleasant, or no additional activities for 1.5 hours each week over a 10-week period (Reissman, Aron, & Bergen, 1993). Reissman et al. determined the activities for each couple by drawing from couple members' earlier ratings of 90 activities as to how "exciting" or "pleasant" each would be to do with their partner. Couples assigned to the exciting group were given a list of activities each couple member had independently rated as highly exciting. Examples of activities on many couples' exciting lists included hiking or attending a concert; pleasant activities included visiting with long-standing friends or eating out. Compliance was monitored and was extremely high. The results revealed that those assigned to engage in exciting activities had significantly greater increases in relationship satisfaction over the 10 weeks than those assigned to engage in pleasant activities or those in the no-added-activity (control) condition. (There was no significant difference in change between the pleasant activities group and the control condition.)

To explore the generalizability and mediators of this effect, Aron, Norman, Aron, McKenna, and Heyman (2000, Studies 1 and 2) next conducted a door-to-door and a newspaper survey of individuals in long-term romantic relationships. In both surveys, couples who reported engaging in more "exciting" activities reported greater relationship quality; and in each case, the association was mediated by lower perceived boredom with the relationship, suggesting that participation in exciting activities leads

to less boredom, which in turn increases relationship quality.

To test the effect of shared expanding activities in a more controlled context and to help clarify the nature of this effect, Aron et al. (2000, Studies 3 to 5) conducted a series of laboratory experiments in which couples first completed relationship measures, next engaged in an activity together, and then completed additional measures. The activity was manipulated so that experimental group couples participated in an activity that was novel, challenging, and arousing; those assigned to the control condition engaged in a mundane but pleasant activity. To create a self-expanding activity, partners' hands and feet were tied together and then they had to move a foam cylinder, using only their heads, back and forth across mats that also required climbing over a barrier within the allotted time (Figure 5.1). In the nonexpanding/mundane condition, partners individually crawled on the mat without needing to move a foam cylinder. In the first experiment, which mainly included dating couples, those in the expanding condition demonstrated a significantly greater increase in satisfaction and love from pretest to posttest. A second experiment, with married couples, replicated these results and also included a neutral condition. Comparisons to the neutral condition showed that the activity effect was due to increases in relationship quality from the expanding activity rather than decreases from the mundane activity. A third experiment once again replicated the basic results and also included videotaped



Figure 5.1 Illustration of self-expanding (novel and challenging) activity condition in Aron et al. (2000, Studies 3–5).

conversations that each couple had before and after the task. Trained coders confirmed that couples who had engaged in expanding versus mundane activities made fewer hostile statements and more supportive statements.

Figure 5.1. Illustration of self-expanding (novel and challenging) activity condition in Aron et al. (2000, Studies 3–5).

There is also recent neuroimaging support for the exciting activities effect. Xu (2011, Study 2) had married couples play cooperative two-person interactive video games while one partner was in the fMRI scanner. Half of the time, the couple played a game that was novel and challenging; the other half, they played a game that was pleasant but not very exciting. When playing the novel/challenging game compared with the mundane game, there was significantly greater activation in reward areas such as the globus pallidus, which has been associated with the pleasure of enjoying food, and the inferior occipital gyrus, a region associated with monetary reward anticipation/risk taking.

However, the Xu (2011) fMRI study, as well as the various field (Reissman et al., 1993) and lab experiments (Aron et al., 2000) we have just reviewed, all leave open the possibility that the effects of expanding activities were attributable to partners simply doing something exciting, and that doing the activity with the partner (and thus making the partner salient when experiencing the excitement) may not have mattered. To address this alternative explanation, an experiment was conducted in which couple members engaged in a version of the expanding activity individually (see Aron, Norman, & Aron, 2001). Half of the participants in this study did the activity while their partner was “accidentally” visible on a video screen located just below where they had to look for constant instructions regarding the task; for the control participants, the video screen was turned off. The results supported the prediction that the effect of shared exciting activities involves associating the partner with the experience: There were significantly greater increases in reported relationship quality for those in the partner visible condition and no significant effect in the control condition. This study also discounts the alternative interpretation that the effects in the shared activities studies are due to cooperating with the partner on the tasks.

Another issue that arose from these field and lab experiments, which all involved tasks that were novel and challenging, but also physiologically arousing, was the extent to which different elements

were driving the effect. For example, physiological arousal (such as from fear or aerobic exercise) has an established influence on initial attraction (Foster, Witcher, Campbell, & Green, 1998). In the initial attraction context, arousal appears to facilitate relationship quality by the participant who misattributes (or reattributes) the arousal to the other (e.g., Dutton & Aron, 1974; White & Knight, 1984) and/or by the arousal facilitating a dominant (romantic) response to the partner (Allen, Kenrick, Linder, & McCall, 1989). However, a person could misattribute a sudden increase in arousal from an expanding activity as attraction to a long-term relationship partner. This is because being with the partner is an ongoing experience that is not uniquely associated with the onset of the arousal. (Thus, from the self-expansion perspective, novelty and challenge should matter most in the long-term context because they are more directly associated with the rapid self-expansion feeling.)

To test this issue, married couples participated in activities as part of a 2×2 between-subjects experimental design that separated novelty/challenge from arousal (Lewandowski & Aron, 2003). Expanding (novel and challenging) activities involved bouncing an unevenly weighted ball back and forth to the partner, making sure that the ball bounced within a circular target on the ground before returning to the partner, while moving back and forth along opposite sides of a rectangle on the floor. Couples in the nonexpanding conditions simply moved back and forth along the rectangle. Thus, in both expanding and nonexpanding conditions, couples were moving back and forth. Crossed with expanding/nonexpanding, those couples assigned to the arousing condition actively ran back and forth while wearing ankle weights; those in the nonarousing conditions walked slowly back and forth without any weights. The results were consistent, with novelty/challenge being the central ingredient in creating the self-expansion effect on relationship quality in the previous experiments. Specifically, those in the self-expanding conditions versus the nonexpanding conditions, whether with or without arousal, reported greater increases in relationship quality from pretest to posttest.¹ Indeed, there was no significant independent effect of or interaction with arousal. Another focus of subsequent work has been on the mediating mechanisms of the shared exciting activities effect in ongoing relationships. One possibility is that self-expanding activities generate positive affect that then becomes associated with the partner and with doing activities with him or her

(Strong & Aron, 2006). Positive affect might also serve as a reinforcement that encourages additional activity with the partner. If this is the case, positive affect should mediate the association between self-expanding activities and relationship quality, with increases in positive affect being more important to relationship quality than decreases in negative affect. In this context, a major contribution of the self-expansion model shared-activities studies is that they describe specific types of activities (novel and challenging) that should be more rewarding and produce more positive affect. Recently, the mediating role of positive affect was examined in the context of couples' momentary experiences using experience sampling (Graham, 2008). Consistent with previous research, those who engaged in activities with their partner that involved greater "activation"—operationalized as alert, active, excited, and involved—reported greater relationship quality. As suggested by Strong and Aron (2006), positive affect mediated the association of these shared activities and relationship quality. Consistent with the concept of flow (Csikszentmihalyi, 1990), couples experienced self-expansion in both leisure and nonleisure activities, often in engaging conversations, suggesting that couples have the ability to experience a wide variety of activities as challenging and exciting experiences.

Another line of work has emerged relevant to this process that focuses on individual differences. Aron, Aron, Jagiellowicz, and Tomlinson (2010) found that individuals high in the personality/temperament trait of sensory processing sensitivity (Aron & Aron, 1997) are more easily bored by dull conversations than others in close relationships. (The trait appears to have a genetic foundation, e.g., Chen et al., 2011; and those high on this trait are especially attentive to subtle stimuli, e.g., Jagiellowicz et al., 2011; and process emotional information especially thoroughly, e.g., Acevedo, Aron, & Aron, 2010.) They were no less affected by shared novel and challenging activities in general. However, they were much more bored when there was a lack of meaningful conversation in their relationship, even after controlling for relationship satisfaction.

Perhaps most important in terms of practical implications is the possibility of long-term effects. In one recent analysis (Tsapelas, Aron, & Orbach, 2009) from a major panel study of married couples in Michigan, at year 7 of their marriage, participants were asked, "During the past month, how often did you feel that your marriage was in a rut (or getting

into a rut), that you do the same thing all the time and rarely get to do exciting things together as a couple?" All couples also reported their general relationship satisfaction at year 7 and then again at year 16. More boredom and less shared exciting activities at year 7 predicted significantly and substantially less satisfaction at year 16, even after controlling for satisfaction in year 7. A cross-lagged model supported the proposed causal direction and ruled out several possible third-variable alternative explanations.

Finally, there is evidence for positive effects in applied contexts. Participation in self-expanding activities appears to have facilitated benefits in two types of marital intervention programs in which it has been tested. Specifically, the benefits of a mindfulness intervention, in which participants express acceptance and openness to the present relationship distress, were largely the result of couples being more aware of their joint participation in self-expanding activities (Carson, Carson, Gil, & Baucom, 2007). Similarly, a study of how viewing the partner positively benefits relationship satisfaction found that individuals with more positive views of their partner also reported greater personal experiences of self-expansion (Gordon & Baucom, 2009).

Partner's Support for Own Self-Expansion in Ongoing Relationships

Ongoing relationships, in addition to benefiting from shared self-expanding activities, are also predicted to benefit from partner's support for one's own self-expansion (due both to perceiving the partner as facilitating one's expansion and to associating the partner with that expansion). In an experiment directly testing this idea, Rodden [Tomlinson], Fivecoat, and Aron (2009) manipulated partner responsiveness in situations in which one member of a dating couple had an opportunity for self-expansion (i.e., learning new photography skills). While anticipating this event, participants received what they believed was either active or passive support from their dating partner. Previous research using this paradigm has examined effects on relationships from partner support when individuals face a stressful event. However, no previous work had examined such effects in relation to support for self-expansion opportunities. Rodden et al. found little effect of support for self-expansion in short-term couples, but in longer term couples, relationship satisfaction increased significantly for those who received active partner responses compared with passive partner responses.

One specific way in which partners may facilitate each other's self-expansion is through the "Michelangelo phenomenon," an idea developed in the context of interdependence theory that has received considerable support in a number of studies (see Rusbult et al., 2009, for a review). Through this interpersonal process, partners "sculpt" each other's selves by promoting those skills and attributes (while downplaying others) that match the partner's ideal self. In this way, the partners support the development of (in terms of the metaphor, "reveal from the marble") their partner's ideal self. This process results in greater relationship quality and increased relationship stability.

Infidelity and Attention to Alternatives

When individuals are unable to satisfy their desire for self-expansion through their primary relationship (or through other contexts), or if the need for self-expansion is particularly high, they may seek self-expansion in alternate relationships (for a review of the issues, see Tsapelas, Fisher, & Aron, 2011). In addition to current self-expansion in the relationship, the anticipation of future self-expansion (or lack thereof) from the relationship should also be important. If a primary relationship cannot provide self-expansion and is perceived as unlikely to do so in the future, the relationship should represent a barrier to fulfilling the need for self-expansion. As noted in the original exposition of the self-expansion model (Aron & Aron, 1986), "When barriers are put between individuals and possible opportunities to expand, individuals tend to circumvent those barriers" (p. 125). One way to circumvent this barrier would be to form an extradyadic relationship (i.e., infidelity), which some have suggested can offer opportunities for personal growth and self-discovery that were not available in the primary relationship (Buunk & Dijkstra, 2000). In the first study to test this hypothesis (Lewandowski & Ackerman, 2006), undergraduates in long-term exclusive relationships rated their current relationship's ability to provide self-expansion, the relationship's potential for providing expansion in the future, and their susceptibility to infidelity. As predicted, those in relationships offering less current self-expansion or with less perceived potential for future self-expansion self-reported greater susceptible to infidelity.

In the Lewandowski and Ackerman (2006) study, it is unclear whether people simply felt more susceptible to infidelity or whether they engaged in behaviors that increased the likelihood of engaging

in infidelity. One key behavior is paying attention to alternatives, or to those who could be a potential partner if the present relationship dissolved (Rusbult, 1983). A person in a committed relationship should devalue alternatives (Johnson & Rusbult, 1989) and should pay less attention to available alternatives (Miller, 1997). In the context of self-expansion, those who experience insufficient self-expansion should have greater motivation to seek out self-expansion opportunities and, consequently, should pay more attention to alternative partners. To test this, VanderDrift, Lewandowski, and Agnew (2011, Study 1) had undergraduates in a current relationship rate the amount of self-expansion in their relationship and then interact with what they believed was a potential alternative partner. Actually, a computer program provided standard responses to questions participants asked from a preestablished list, which included questions related to self-expansion as well as general questions. For example, if the participant chose to ask, "Do you like to hear different perspectives on topics?" the program gave the response "Yes, it keeps life interesting." As predicted, those with less self-expansion in the current relationship liked the partner and the overall interaction more, and selected more questions that would reveal the interaction partner's ability to provide self-expansion. This supports the notion that those with less self-expanding relationships failed to devalue the alternative, and instead rated the alternative more favorably.

In a follow-up study (VanderDrift et al., 2011, Study 2), undergraduates rated their current self-expansion and their attention to alternative partners (Miller, 1997). Participants also believed they had a chance to volunteer for a follow-up study that involved a "get to know you" activity with an opposite-sex partner who was currently single. Participants were given a sheet of 12 highly attractive potential interaction partners and were told to pick as many or as few as they would like. Consistent with the previous study, those with less self-expansion in the current relationship paid more attention to alternatives and selected a greater number of the potential interaction partners. In addition, this study replicated the association between self-expansion and susceptibility to infidelity, and found that attention to alternatives mediated the association. This suggests that lack of self-expansion in the current relationship leads to behaviors that increase the chance that infidelity will occur.

Tsapelas (2011, Study 1), in a study of undergraduates in dating relationships, found significant

correlations of reported self-expansion in their relationship with two subscales of Miller's (1997) Attention to Alternatives Scale: willful disinterest ($r = .41$) and active prowling ($r = -.25$). In another study, Tsapelas (2011, Study 2) had committed dating individuals rate various traits for how desirable each one was in a romantic partner as well as the extent to which their own partner had each trait. A week later, using Wright and colleagues' (2004) priming procedure (described in the initial attraction section above), she randomly assigned participants to be primed with high or low individual need for self-expansion. Participants were then presented with a series of 20 photographs of attractive opposite-sex individuals, and they had to learn to associate a particular set of traits with each individual. Half of the photos were paired with partner traits the participant previously rated as highly desirable, but which the participant's partner did not have; the other half of the photos were paired with highly desirable traits the participant's partner did have. Participants were given several minutes to learn the matches and were then presented with the photos with their appropriate traits in a cognitive attention task, followed by a structured recall task. There was a strong and significant interaction effect for recall that was consistent with the self-expansion model: Those primed with high self-expansion need had the highest correct recall rates for pictures with desirable traits their partner *did not* have (i.e., attractive alternatives who would offer the greatest opportunity for additional self-expansion); however, low self-expansion primed individuals had the highest correct recall rates for pictures with desirable traits the participant's partner *did* have.

In sum, several studies suggest that relationships that provide lower levels of self-expansion may lead individuals to seek self-expansion in alternative relationships. Moreover, when an individual's desire for self-expansion is especially high, the potential alternatives of most salience are those that offer desirable qualities that the current partner does not possess.

Relationship Dissolution

The self-expansion model and in particular the results of the Aron et al. (1995) study suggest that ending a relationship could have a detrimental influence on the self, in that there should be a contraction of the self because of the loss of resources, perspectives, identities, and ongoing new experiences formerly provided by the partner.

To test this, Lewandowski, Aron, Bassis, and Kunak (2006) conducted three studies to determine

how self-expansion within the relationship, as measured by the SEQ, relates to self-concept changes following relationship dissolution. In Study 1, recently broken-up undergraduates were asked, "How were you affected by the break-up of your relationship?" Those who had greater self-expansion associated with the relationship before dissolution made more statements that indicated contraction (e.g., "I don't know who I am anymore," "I've lost a big part of myself."). In Study 2, participants were asked, "To what extent did you feel as though you lost part of who you are, as a result of the break-up?" Parallel to Study 1, those with more self-expansion before dissolution reported more postdissolution contraction of the self. Lewandowski and associates' Study 3 tested this idea experimentally. Participants first did the "Who are you today?" task to assess their spontaneous self-concept. Next, participants were primed to think of times in their current relationship that were either self-expanding (e.g., times when their partner added to their own sense of identity or improved the person they were) or non-expanding (e.g., times when their partner did not expand their identity, but instead restricted their accomplishments and experiences). Participants then engaged in a guided imagery task in which they imagined the end of their relationship, after which they did the "Who are you today?" task a second time. Consistent with a causal direction from loss of a relationship that provides self-expansion to a deexpansion of the self, participants who focused on self-expanding qualities of their "lost" relationship experienced a contracted self-concept such that they described the self in less complex ways from pretest to posttest. Subsequent research (Slotter, Gardner, & Finkel, 2010) has also found that participants who had broken up retrospectively reported moderate changes to the self-concept and provided more narrow self-descriptions, each of which were associated with decreases in self-concept clarity.

These various studies suggest that ending a self-expanding relationship has detrimental effects on the self. In contrast, losing a less self-expanding relationship has the potential to enhance the self because of the ability to experience new opportunities that were not previously available or that the former relationship prevented (Lewandowski & Bizzoco, 2007). Thus, ending a relationship that provided little expansion creates an opportunity for personal growth that involves the process of improving the self through the discovery of new knowledge and perspectives (Tedeschi, Park, & Calhoun, 1998). Consistent with this prediction, Lewandowski and

Bizzoco found that undergraduates who had recently experienced the dissolution of a serious relationship reported significantly greater postdissolution personal growth, less loss of self, and more positive emotions if the predissolution relationship had provided less self-expansion. Importantly, loss of self mediated the association between predissolution self-expansion and postdissolution growth, indicating that growth was facilitated when individuals did not have to address contraction of the self. Overall, the Lewandowski and Bizzoco findings suggest that the self can expand when a non-self-expanding relationship ends.

Individual Self-Expansion

The focus of this chapter (and this book) is on relationships, and most research and related conceptualizations of self-expansion motivation have indeed been in the relationship context. However, it is helpful to gain a fuller understanding of the operation of this principle in the relationship context by noting very briefly some directly relevant recent research on self-expansion in an individual context.

A particularly direct and salient route for self-expansion, and in individualistic cultures perhaps one over which an individual has the most control, is through individual pursuits. For example, a person who desires self-expansion could take a cooking course, read the latest bestseller, or take up a new hobby. In each case, the activity provides opportunities, relatively independent of close relationship partners, for increased self-efficacy as well as containing elements of novelty and challenge that should help alleviate boredom.

In the first set of studies explicitly testing the role of self-expansion motivation in a nonrelational context, participants engaged individually in novel and challenging activities (Mattingly & Lewandowski, under review). In Study 1, individuals carried objects (e.g., rubber bands, Ping-Pong balls) across a room either with chopsticks (self-expanding condition) or with their hands (nonexpanding condition) and deposited the items in a box. After the task, participants who had engaged in the self-expanding activity spent more time attempting to solve a series of unsolvable anagrams. A follow-up study using the same manipulation found that participants in the self-expanding condition exerted more effort on a hand grip that measured physical effort. A third study had participants either read a list of novel and interesting facts (e.g., “Human saliva has a boiling point three times that of regular water”)

or parallel boring facts (e.g., “Human saliva assists in digestion”). Parallel to Study 1, participants in the self-expanding (novel facts) condition put forth more effort on the unsolvable anagrams by generating more solutions. Importantly, this effect was not due to self-expanding activities resulting in the depletion of self-regulatory resources. Taken together, these studies provide evidence for the effects of the individual experience of self-expansion both from direct acquisition of new resources (in this study, gaining specific new knowledge) and from novel/challenging activities (in this study, carrying objects with chopsticks).

Conclusion to Review of Motivational Aspect of the Self-Expansion Model

In this first half of this chapter, we have summarized the key conceptual foundation and the links with other theoretical approaches of the motivational aspect of the self-expansion model. We then reviewed the major lines of research on the effects of experiencing self-expansion, primarily with regard to relationships, either through directly enhancing the ability to accomplish goals or by participating in novel and challenging activities that create a feeling of self-expansion. This body of research demonstrates a number of mechanisms and processes that follow from the motivational aspect of the model, deepening our understanding of close relationships in novel ways, including identifying contexts in which differences (as opposed to similarities) can promote initial attraction because they afford self-expansion; locating specific cognitive and neural effects of falling in love; finding that shared novel and challenging activities (and not merely shared pleasant time together of any kind) and being supported by one’s partner in growth-promoting experiences improve relationship quality; identifying specifically the role in infidelity of relationship boredom versus experiencing growth and self-expansion; and showing how the loss of relationships that provided self-expansion reduces the perceived content of the self, but that the loss of relationships that constricted self-expansion can be a basis for positive outcomes. Finally, we noted that even in a nonrelationship context, adding resources or experiencing novelty and challenge can enhance the content of the self.

These findings, and the motivational principle more generally, we believe point to important new research and theoretical possibilities which we elaborate in the “Future Directions” section at the end of the chapter.

Inclusion of Others in the Self

We now turn to the aspect of the model that has received the most research attention, the notion that in a close relationship the other becomes “included in the self.” After reviewing the conceptual and operational definitions of including others in the self, we will review research relevant to its predictors and outcomes in close relationships. Finally, after highlighting a number of clever extensions of this idea, we will suggest that the notion of including others in the self offers a dynamic and flexible tool for understanding the self and self-processes in other contexts as well as relationships.

What Does It Mean to Include Others in the Self?

When we include another person in the self, our cognitive construction of the other overlaps with (or shares activation potentials with) our cognitive construction of the self (Aron et al., 1991; Smith, Coats, & Walling, 1999; for a review, see Aron, Mashek & Aron, 2004; for a related view, see Agnew, Van Lange, Rusbult, & Langston, 1998). Thus, to the extent we include another in the self, we take on the resources, perspectives, and identities of that person, and we share that person’s outcomes. The other person then informs who we are, enhances the tools we feel we have at our disposal, shapes how we see the world, and affects the costs and benefits we perceive ourselves to incur.

The basic conception of including other in the self overlaps with other relationship theories. In terms of interdependence theory (see Chapter 3), it relates most closely to transformation of motivation, the idea that we resist purely selfish desires and act for the benefit of the other and the relationship because of the long-term benefit of maintaining the relationship. Although this process is certainly a powerful one (e.g., Yovetich & Rusbult, 1994), we also argue that people in close relationships act for the benefit of the other because the other’s outcomes (good or bad) are to some extent directly experienced as one’s own outcomes (e.g., Aron et al., 1991, Study 1). Another influential line of research and thinking, focusing on communal relationships (e.g., Clark & Mills, 2012), identifies spontaneously responding to the needs of the other as a normative, and even definitional, part of a close relationship. We agree, but also argue that one reason for communal behavior in close relationships is that the needs of the other are experienced as the needs of the self (and that meeting those needs is experienced as meeting one’s own needs). There is

some direct evidence that the degree to which a relationship is communal is partially a function of the degree to which there is inclusion of other in the self (e.g., Medvene, Teal, & Slavich, 2000)

Links with other relationship models are described in the context of specific research studies cited throughout this section. However, the inclusion-of-other-in-the-self idea has primarily been linked to notions of interdependent or communal cultures (see chapter 25). Indeed, Cross, Bacon, and Morris (2000) have developed a measure of individual differences in “relational interdependent self-construal” that correlates positively with standard measures of inclusion of other in the self (Cross et al., 2000; Mashek, Cannaday & Tangney, 2007). Conceptually, the tendency to see the self as interdependent with others goes hand in hand with including those others in the self. Perhaps an individual’s degree of interdependent self-construal informs the extent to which any one particular other is typically included in the self.

Measuring the Inclusion of Others in the Self

The metaphor of overlapping selves led to the creation of what has become a very widely used instrument for assessing interpersonal closeness, the Inclusion of Others in Self (IOS) Scale. This scale, developed by Aron, Aron, and Smollan (1992), explicitly influenced by the work of Lewin (1948) and Levinger and Snoek (1972), and foreshadowed by Pipp, Shaver, Jennings, Lamborn, and Fischer (1985), encapsulates the construct of interconnected selves. The IOS Scale consists of seven pairs of overlapping circles (Figure 5.2); each pair overlaps slightly more than the preceding pair. Respondents select the pair of circles that best portrays their relationship with another (e.g., romantic partner, friend, parent, community, the environment). Most people are able to provide meaningful responses without further guidance; in fact, during validation procedures, when participants were asked to describe the subjective meaning of the circle diagrams in an open-ended format, 86 percent generated connectedness-themed descriptors (Aron et al., 1992).

The original validation of the IOS Scale (Aron et al., 1992) also found that this simple pictorial assessment of closeness captured aspects of both *feeling* close and *behaving* close, and correlated strongly with more complex, multi-item measures of closeness and intimacy. Further, this single-item pictorial measure outperformed more complex measures of closeness in predicting prospectively whether relationships

Please the picture below that best describes your relationship with your partner.

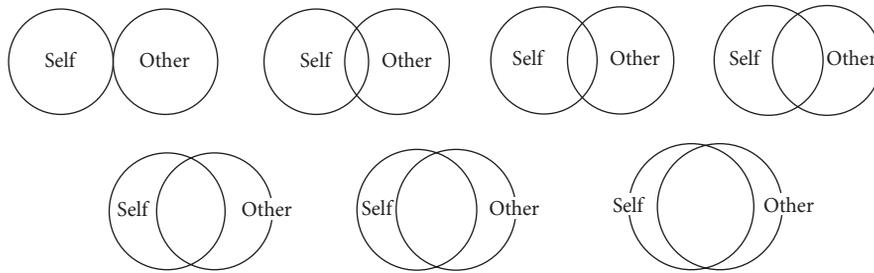


Figure 5.2 The Inclusion of Other in the Self Scale. From Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63, 596–612.

would remain intact over the subsequent 3 months. In fact, in a recent meta-analysis of longitudinal predictors of nonmarital relationship dissolution (Le, Dove, Agnew, Korn, & Mutso, 2010), inclusion of other in self emerged as a particularly robust predictor of relationship stability. More generally, it has become a very widely used primary index of the sense of closeness. In an interesting example that nicely illustrates this role of the measure, Simpson, Orina, and Ickes (2003) showed that being more accurate about one's partner's thoughts and feelings in a conflict discussion predicted decreased IOS Scale closeness when the partner's expressions were objectively relationship threatening.

Importantly, the IOS Scale has proved impressively flexible. Not only has it been used to study diverse categories of personal relationships as described in many examples below, but it has also been successful cross-culturally (e.g., Dalsky, Gohm, Noguchi, & Shiomura, 2008; Uleman, Rhee, Bardoliwalla, Semin, & Toyama, 2000), and even transported beyond relationships, assessing inclusion in the self of "others" ranging from consumer brands to God (a point we return to briefly later). In this subsection, we focus on the ways the scale has been modified within the relationship domain.

Capitalizing on the availability of technology, Le, Moss, and Mashek (2007) created a dynamic IOS Scale for use in Web-based data collection. Participants use a computer mouse to alter the relation between the two circles, or selves. This "continuous IOS" offers two distinct pieces of information: percentage of overlap between the two circles (ranging from 0 to 100 percent), and distance between the circles. This latter metric allows researchers to differentiate people who represent their relationship as two merely tangent circles versus people who see their relationship as two wholly separate circles.

Mashek et al. (2007) offered a different modification to the scale. In their research with incarcerated offenders, they found that many of their participants experienced the standard IOS Scale as confusing because the circles in the first of the seven steps were smaller than those in the last of the seven steps. (This was done by Aron et al., 1992, to keep the total area encompassed within the collective boundaries of each pair of circles the same, so it would not appear that the total of what is in self and other was less when people were connected. However, this subtlety may well be lost on many respondents and lead to confusion instead.) This modified version of the IOS is available in Mashek et al. (2007).

The IOS Scale is the most common (and, arguably, the most face-valid) measure of inclusion, and because it is a single item, it is particularly efficient. However, it is far from the only measure available. In fact, it is not the only pictorial measure available. For example, in the context of their amoebic self theory, Rempel and Burris (2006) describe the Relational Inclusion Map, which invites participants to indicate the extent to which they see their partner as part of themselves. This map has a seventeen-step gradient, ranging from feeling clearly connected to the other (the other is "part of yourself") to feeling clearly disconnected (the other is "clearly not part of yourself"). This scale, although not developed in the context of the self-expansion model, clearly taps the notion of including other in the self.

Importantly, many of the ways of assessing the presumed effects of including others in the self have also been used as other measures of inclusion. Although we review many of the relevant studies in the section below on outcomes of inclusion, some of these indexes have a substantial advantage over the IOS Scale in that they are nonobvious (implicit). The standard pictorial IOS Scale may

bypass some biases triggered by verbal self-report items, has the virtue of being minimally reliant on language, and has little correlation with social desirability measures (Aron et al., 1992). Nevertheless, it is a self-report measure and, therefore, is susceptible to the various kinds of response bias inherent in all such measures. Thus, where feasible, we strongly encourage researchers to use one of these nonobvious measures in addition to self-report indexes. Among the several nonobvious indicators that have been employed, perhaps the three most widely used and consistently successful to date are the response time me/not-me task (originally in Aron et al., 1991, Study 3); plural pronoun use in descriptions of one's relationships (originally in Agnew et al., 1998); and Sande, Goethals, and Radloff's (1998) especially easy to use (because it appears as a short self-report index) trait-rating attribution task (originally used for this purpose in Aron et al., 1991, Study 2).

Predictors of Including Others in the Self

What predicts inclusion of other in the self? If one wants to increase her or his inclusion of other in the self, how can this be achieved? In the first half of this chapter, we described research findings showing that shared participation in exciting activities increases relationship quality. There is also some evidence that increased inclusion of other in the self is one mechanism through which this happens. In the Tsapelas et al. (2009) longitudinal study, in which shared exciting activities (versus boredom) at year 7 predicted increased satisfaction at year 16, changes on the IOS Scale over this period mediated the effect. In other words, frequent shared participation in exciting activities may lead to more inclusion. Or, put another way, boredom might undermine one's ability—and perhaps willingness—to include the other in the self.

The general literature on self-disclosure and theoretical approaches, such as Reis and Shaver's (1988) intimacy model, supports the idea that self-disclosure is a powerful mechanism for inducing interpersonal closeness. Accordingly, self-disclosure has proved to be a well-supported mechanism for creating inclusion of other in the self. Aron, Melinat, Aron, and Vallone (1997) showed experimentally that gradually escalating reciprocal self-disclosure with a stranger during a short laboratory session can create greater inclusion of other in the self as assessed by the IOS Scale (as well as other indicators of closeness/intimacy). Indeed, the procedure they developed (which has come to be known as the "Fast Friends" procedure) has subsequently been used in many other studies as a means of creating closeness experimentally (e.g.,

Brown, et al., 2009). In one study, Slatcher (2010) creatively extended the standard paradigm to generate closeness between two couples (each in an ongoing relationship, but strangers to the other couple), conducting the procedure as a foursome. Participants in couple pairs were randomly assigned to engage in the Aron et al. closeness-generating procedure or in a "small-talk" control condition. Participants in the closeness condition (compared with the control) developed greater closeness to members of the other couple and also showed greater increases from before to after in inclusion of their partner in the self.

Several other means of inducing inclusion of other in the self, both as experimental procedures and as tests of theory, have been employed. Some particularly successful examples of experimental procedures are tasks involving taking the perspective of the other (e.g., Davis, Conklin, Smith, & Luce, 1996; Galinsky & Moskowitz, 2000) and leading people to believe they have "shared brain waves" with the other (e.g., Goldstein & Cialdini, 2007). An example of a theoretically interesting approach to inducing inclusion, based on Fredrickson's (2001) broaden and build model, finds that inducing positive affect increases inclusion of a close friend in the self (Vaugh & Fredrickson, 2005), and that positive affect over the first few weeks of college predicts substantial increases in inclusion of one's roommate in the self (Vaugh & Fredrickson, 2006). As another example, Slotter and Gardner (2009) identified anticipatory inclusion as a process that promotes inclusion of other in self. These researchers found that individuals "take on as their own" some of the attributes of a stranger, even in the absence of actual interaction with that person, but they do so only when the other person is a potential relationship partner.

Further, there is emerging evidence that physical intimacy, similar to the emotional intimacy developed through self-disclosure, also enhances inclusion. Little empirical work has specifically addressed the role of sex in promoting self-other inclusion. However, one study examined this idea in a unique population. In a study of a sample of individuals who practice sadomasochism, Sagarin, Cutler, Cutler, Lawler-Sagarin, and Muatuszewich (2009; Study 2) found a significant increase in IOS Scale ratings from pretest (before the participants engaged in a sadomasochistic scene at a sex party) to posttest (after completion of the scene). This finding offers some preliminary indication that sex might offer one mechanism for increasing the inclusion of other in self, at least in the short term.

Finally, there is some evidence that therapeutic intervention can increase inclusion. Reid et al. (2006, Study 2) found that mean dyad levels of IOS Scale ratings increased significantly over six 2-hour therapy sessions designed to enhance the couple's sense of "we-ness" or couple-related identity.

Outcomes of Including Others in the Self

Including others in the self should have dramatic effects on one's experiences and behavior because these outcomes are strongly influenced by the content of one's self-representation and, to the extent one has included another in the self, one treats whatever happens to the other as happening to the self. In this subsection, we consider such effects, focusing on cognition, physical, and physiological responses, and on treating another's outcomes as one's own.

COGNITION

One very direct effect of including another person in the self is that the overlapping representations can create cognitive confusions or interference between that other person and oneself. In one of the first studies of self-other inclusion, Aron et al. (1991, Study 3) developed the "me/not-me" paradigm to examine the hypothesized overlap of cognitive structures between self and a close other. Specifically, the paradigm tests how quickly participants evaluate the self-relevance of traits that participants had previously rated for both self and a particular other, such as their romantic partner. During the timed rating task, participants are able to quickly evaluate those traits that are either true of both self and partner or false of both self and partner. However, when an adjective is true of only one of the targets—self or partner—ratings are slower, and the extent of this slowdown correlates with IOS Scale ratings of the relationship (Aron et al., 1992; Aron & Fraley, 1999; Smith et al., 1999). In other words, when we have included another person in the self, our ability to process information about the self is slowed to the extent that the other person is dissimilar from us. (The me/not-me paradigm is also an effective implicit measure of self-other inclusion, as well as self-group inclusion, e.g., Tropp & Wright, 2001.)

Self-serving cognitive biases are also diminished with reference to persons we include in the self. For example, the typical self-reference effect in memory—the tendency to better recall information processed about the self than information processed about others—is mitigated when those "others" are close others (Symons & Johnson, 1997). Mashek, Aron, and Boncimino (2003) extended this work

by looking specifically at the patterns of confusions people make when processing information about self, nonclose others, and close others. They asked participants to rate different sets of adjectives for the self, a close other, and a nonclose other. Later, participants engaged in a surprise source recognition task, in which they indicated for each adjective the target for whom that adjective was originally rated. Mashek et al. evaluated the nature of the errors participants made. That is, if an adjective was originally rated for the self, but later misremembered as having been rated for someone else, who was that someone else? They found that confusions between self and close others were more likely than confusions between self and nonclose others, and this effect held even when controlling for the participants' familiarity and similarity with the other targets. Thus, here again, close others can color our cognitive processing.

Further evidence of diminished differences in self-processing versus other-processing in the wake of inclusion comes from work building on Lord's (1980, 1987) proposition that processing information about the self differs from processing information about others, in that self-processing is "ground" and other-processing is "figure." Aron et al. (1991, Study 2) reasoned that processing information about a close other should be more self-like than processing information about a nonclose other. Replicating Lord's findings, Aron et al. found that after imagining different targets (self, a close other, and a nonclose other) interacting with a series of concrete nouns, participants recalled more of the nouns they had imagined the nonclose other interacting with than nouns they had imagined the self interacting with. What was new (and specifically predicted by the inclusion of other in the self idea) is that nouns imagined being interacted with by the close other were recalled at an intermediate level. Further, the degree of difference in recall between the close other and nonclose other conditions correlated with self-reported closeness to these targets.

Likewise, Sande et al. (1988) found that people were more likely to make situational attributions for the behaviors of close versus nonclose others; that is, participants explained the behaviors of close others—but not nonclose others—similarly to how people explained their own behavior (Jones & Nisbett, 1971). Aron and colleagues (1991, Study 2; Aron & Fraley, 1999) replicated this effect, demonstrating that individuals are less likely to make dispositional descriptions of others when those others are close to the self (e.g., a best friend or romantic partner) than when those others are not close.

Further, Waugh and Fredrickson (2006), using a version of this measure (which they called “complex understanding of other”), found moderate to strong correlations with the IOS Scale, and the IOS Scale mediated the path from positive emotion to this measure.

Looking at the cognitive effects from yet another perspective, there is growing evidence that when we include the other in the self, we conceptualize the self and other as a unit. For example, as part of their work on “cognitive interdependence” (an extension of interdependence theory closely linked to the inclusion-of-other-in-the-self aspect of the self-expansion model), Agnew et al. (1998) found that the number of plural pronouns (we, us, our, etc.) versus the number of individual pronouns (I, me, mine; her, him, hers, etc.) people use when articulating thoughts about their romantic relationship correlate positively with self–other inclusion as measured by the IOS Scale (see also Karremans & Van Lange, 2008). Extending this line of thinking, Fitzsimmons and Kay (2004) showed a causal effect. They had participants perform a series of tasks with a stranger that involved deciding which objects to bring to a desert island. At a crucial point, the procedure involved filling in the blanks for their joint decision using in one condition plural pronouns (e.g., “We should bring _____ because we _____”) and in the other condition singular pronouns (“The other passenger and I should bring _____ because the other passenger and I _____”). Those assigned to the plural pronoun condition showed significantly great self–other overlap on the IOS Scale, as well as increased closeness on other measures.²

PHYSICAL AND PHYSIOLOGICAL

When we include others in the self, we seem to think differently about our physical selves. Burris and Rempel (2008), for example, found that people who are in relationships, compared with people who are not, see the self as more “amoebic.” That is, they perceive their physical bodies as less constraining and are less sensitive to physical threat than people who are single. Burris and Rempel note, “These results are entirely consistent with a key assumption that including an intimate other in the self facilitates expansion of the self beyond its default limits as defined by the physical body” (p. 958).

Cheng et al. (2010) conducted an fMRI study to investigate how we process and perceive physical pain experienced by the self, a loved one, or a stranger. Using a within-subject design, they showed participants animations of hands and feet

undergoing various types of painful stimulation; participants were instructed to imagine these as the hands or feet of the self, of a loved one, and of a stranger. Participants rated the imagined pain of self and loved one as similar, but strangers were imagined to feel less pain. Moreover, seeing a close other in a painful situation (albeit an imagined animated situation) elicited brain activation similar to that elicited when participants saw their animated selves in painful situations, with more similar activations correlating with more self–other overlap as measured by the IOS Scale. Indeed, mounting evidence suggests that the areas of the brain involved in processing information about the self overlap quite literally with areas involved in processing information about close others. This pattern holds for processing faces (Kircher et al., 2001), memory tasks involving names (Aron, Whitfield, & Lichy, 2007), and response to others’ errors (Kang, Hirsh, & Chasteen, 2010).

Another kind of physiological effect was recently reported by Brown and colleagues (2009). Individuals who participated with a stranger in the Aron et al. (1997) self-disclosure closeness-generating task, compared with those doing a neutral-acquaintance task, showed significantly greater increases in salivary progesterone, a hormone considered to be an indication of one’s desire to bond with others.

Finally, we find it especially difficult to distinguish self from close others perceptually. Riehl, Ketay, Aron, and Keenan (2008) morphed the faces of participants with close friends and with celebrities. Participants were slower at identifying the self when highly overlapped with a friend than when highly overlapped with a celebrity, even after controlling for any facial similarities or differences in the different targets.

TREATING OTHER’S OUTCOMES AS ONE’S OWN

Another implication of the model is that one experiences the other’s outcomes to some extent as one’s own. This has been studied most extensively in research on the consequences of social comparison. Gardner, Gabriel, and Hochschild (2002) found that participants primed with inclusion of other in the self did not experience the drop in self-esteem that is typical in the wake of upward social comparison. In fact, these participants experienced a partner’s success as a reason to celebrate, and the degree of celebration was correlated with the degree of including other in the self.

Lockwood et al. (2004) also examined whether closeness moderates the relation between upward social comparison in close relationships and outcomes

such as self-esteem. Although they did not base their work explicitly on the inclusion-of-other-in-the-self model, their measure of closeness tapped the same idea (e.g., “My identity and my partner’s identity overlap a great deal”). In Study 1, they found that people who reported a high level of closeness, upon experiencing an experimentally generated upward social comparison with the partner, did not experience the self-esteem loss that is typical in social comparison research. That is, closeness offered a buffer against the typical self-esteem decline experienced when a partner outperforms the self. In a follow-up study, Lockwood et al. experimentally primed closeness using a sentence-unscrambling task and manipulated upward versus downward social comparison. Compared with participants primed with neutral and low closeness, participants primed with high closeness predicted responding more favorably in the wake of an imagined upward comparison with the partner. In a third study, which involved both members of a couple, the researchers manipulated social comparison and measured subsequent closeness. They found that individuals who feel a high degree of closeness in the wake of upward social comparisons with their partner affirmed their relationship abilities

Building on the work of Lockwood et al. (2004), Pinkus et al. (2008) focused on self-affirmational responses in the wake of social comparisons within relationships in a study in which affect was the primary outcome of interest. They concluded, “It appears that focusing on the benefits of the comparison for one’s partner and one’s relationship, such that one empathizes with the partner’s success, takes the self-evaluative sting out of being outperformed by the partner” (p. 1198). Importantly, closeness predicted responding favorably in instances of both upward and downward social comparison.

In a different kind of indication of experiencing a close other’s outcomes as one’s own, MacKay, McFarland, and Buehler (1998) found that participants’ moods were affected by false feedback about an interaction partner’s performance only when that interaction partner was also a relationship partner. Yet another indication of this process is that including the other in the self appears to predict particular patterns of resource allocation. For example, Aron et al. (1991, Study 1) found that, when teamed with a best friend, participants distributed money about equally between self and partner, even when the partner would not know or be able to determine their allocations. But, when teamed with a mere acquaintance, participants distributed more money

to self than to partner. In other words, when interacting with close versus nonclose others, individuals treat the other like the self.

Including others in the self also has consequences for our pursuit of goals. Shah (2003) examined the moderating role of self–other inclusion on the ability of significant others to influence goal pursuits. When participants were close to their father, a prime designed to summon the father to mind increased the accessibility of a particular goal as well as participants’ commitment to those goals.

Finally, there is evidence that including a close other in the self can, under some circumstances, have negative effects. Mashek and Sherman (2004) contrasted participants’ responses to the usual IOS Scale to their responses on an IOS Scale asking about one’s *desired* relationship with the partner. Across samples, Mashek and Sherman found that 13 to 19 percent of undergraduates involved in dating relationships reported more actual inclusion than desired inclusion, and 57 percent of respondents said they felt too close to their partner at least once in the preceding semester. In a recent study, Mashek, Le, Israel, and Aron (2011) found that this desire for less inclusion of other in the self could be experimentally primed, suggesting that the experience is contextually dependent and dynamic.

Extensions

During the past decade, researchers have extended the inclusion-of-other-in-the-self aspect of the self-expansion model in a number of original ways that go well beyond the close relationship domain. Because this chapter focuses on close relationships, we will describe these developments only briefly here.

Perhaps the most extensive line of work applying the inclusion aspect in the nondyadic relationship domain has focused on group identity and intergroup relations. Tropp and Wright (2001) modified the IOS Scale to examine the inclusion of racial ingroups in the self and the me/not-me paradigm to assess including social groups in the self. A substantial body of literature has developed in the intergroup field based on the idea that groups are included in the self, with the main focus being on intergroup contact. The key idea is that the well-established effect of intergroup friendships on reducing prejudice (Davies, Tropp, Aron, Pettigrew, & Wright, 2011) is substantially mediated by the process of inclusion of other in the self (for a review, see Davies, Wright, & Aron, 2011). If I include a person of another group in the self, part of what I also include is that person’s

group identity. Thus, to some extent, I feel as if I *am* part that group and, thus, feel more positively about that group. There is also substantial evidence of an “extended contact effect” in which mere knowledge of a friendship between a member of my own group and a member of another group reduces prejudice. This is attributable, at least in part, to a transitive inclusion process in which, because I include the member of my own group in myself to some extent, I also include this ingroup member’s inclusion of his or her friend’s group (Dovidio, Eller, & Hewstone, 2011; Turner, Hewstone, Voci, Paolini, Christ, 2007; Wright, Aron, & Brody, 2008; Wright, Aron, McLaughlin, & Ropp, 1997). Indeed, this effect and mechanism appear to operate even from merely imagining a friendship between a member of one’s own group and a member of another group (Crisp & Turner, 2009).

Turning to other extensions, Sullivan and Venter (2005), using the me/not-me response-time paradigm, found results for including one’s personal hero in the self that closely paralleled Aron et al.’s (1991) findings with close relationship partners. Mashek et al. (2007) used the IOS Scale as the foundation for their Inclusion of Community in Self Scale. Using this measure, Mashek, Stuewig, Furukawa, and Tangney (2006) found, in a sample of incarcerated offenders, that those who reported feeling connected to both the criminal community and the community at large evidenced particularly high levels of psychological distress. In another extension, Woosnam (2010) evaluated whether residents of a popular resort community included tourists in their selves. On average, the respondents perceived moderate self-tourist overlap, and a significant amount of the variance in this overlap was predicted by respondents’ own travel behaviors in the 2 years before completing the survey.

Representing a departure from the emphasis on human connection, Leary, Tipsord, and Tate (2008) examine what they call “allo-inclusive identity,” or the tendency to see the self as connected to broad swaths of people, nature, and even inanimate objects. To measure allo-inclusive identity, Leary et al. asked participants to indicate which pair of overlapping circles represented their degree of connection with each of 16 entities. These entities included human targets (e.g., best friend, the average American, a homeless person on the street) and targets from the natural world (e.g., all living creatures, the moon, the Earth). After examining a series of cross-sectional correlates, Leary et al. concluded: “People who feel a greater sense

of personal connection with other people and the natural world are less egocentric, more concerned about others, more oriented toward social relationships and ecological issues, less interested in social power, and more inclined toward certain kinds of spiritual experiences” (p. 145). In other words, a broadened—indeed expanded—sense of self seems to be associated with a host of desirable attitudes and dispositions.

Schultz et al. (2004) demonstrated that an IOS Scale-based measure of inclusion of the natural environment in the self correlated moderately with an implicit measure (the Implicit Association Task-IAT) of seeing the self as connected with nature. Blanchard, Perreault and Vallerand (1998) examined basketball players’ sense of including their coach, team, and the sport in the self. Inclusion of these three entities correlated positively and significantly, respectively, with perceiving a positive relationship with the coach, team identity, and intention to play the game in the near future.

There have been numerous other extensions, ranging from including products and brands in the self (e.g., Reimann & Aron, 2009; Trump & Brucks, 2011) to including God in the self (e.g., Sharp, Hodges, & Tipsord, 2009). Taken together, these various extensions suggest that the inclusion-of-other-in-the-self aspect of the self-expansion model (and the adaptation of explicit and implicit measurement methods originally developed by it in the relationship context) offers a dynamic and flexible approach for advancing our understanding of the self and self-related processes across multiple contexts.

Conclusion to Review of Inclusion-of-Other-in-the-Self Aspect of the Self-Expansion Model

In this section, we briefly summarized the key conceptual foundation and links with other theoretical approaches of the inclusion-of-other-in-the-self aspect of the self-expansion model. We then discussed the most widely used measure of inclusion, the IOS Scale, noting variations on it in the relationship context as well as other approaches to assessing inclusion, and emphasizing the value of using nonobvious measures that have been employed successfully in various studies. Next we considered predictors of including others in the self, such as self-disclosure (especially the Aron et al., 1997, closeness-generating paradigm), some other successful experimental paradigms for inducing it in the lab, and theoretically oriented approaches such as anticipatory inclusion. We then considered various

outcomes of including others in the self, including cognitive effects (e.g., response time, memory, and attribution tendencies indicating overlapping mental representations of self and other), physical and physiological effects (e.g., overlapping or shared patterns of neural activation for self and close others), and shared outcomes (e.g., undermining social comparison effects because others' successes and failures are treated to some extent as one's own). Finally, we briefly considered extensions of the idea beyond the personal relationship domain, including its substantial application to intergroup issues and to diverse contexts ranging from including concrete objects to including God in the self.

Clearly, the idea appears to have found broad usefulness within and beyond the close relationship domain. Nevertheless, many directions for future research remain unexplored, to which we turn in the next major section.

Future Directions

In this section, we speculate on potentially fruitful future directions for research on the self-expansion model, in terms of the motivational aspect and the inclusion aspect and their relation to each other.

Motivational Principle

Within the various contexts of relationship development, there are a number of both theoretical and practical domains in which research on the motivational principle offers substantial possibilities. In terms of initial attraction, which has been studied primarily in terms of romantic and friendship attraction, perceived opportunity to self-expand would seem to be an important factor in many other potential-attraction contexts, in which interaction may be required but real closeness is not, such as between collaborators on a project or between relatives, including in-laws. Little is known from any theoretical perspective about how and why people chose to make a relationship that exists in a formal sense into one that is actually close, but a major factor may well be perceived (or initial experiences of) opportunities for self-expansion through the other. Regarding the specific experience of falling in love, as reviewed earlier, we have learned a great deal about the self-expansion motivation predicted neural and cognitive correlates of that experience in romantic relationships. But again, we know much less about what may well be parallel processes of "falling in friendship" or even what is often called "falling in love" with a new child.

The application of the self-expansion motive to building and maintaining closeness may apply, even using some of the same methods, to the other contexts we considered. For example, shared exciting activities of parents with children may well build positive family relationships; support for a collaborator's self-expansion opportunities may well strengthen the reciprocal commitment to the collaboration; experiencing self-expansion in an exclusive adolescent best friendship may well reduce interest in potential alternative friends; and reactions to the loss of a close loved one through death, after the initial response, may well be substantially moderated by the extent to which that person was a source of self-expansion in one's life. And of course, there are considerable opportunities for considering the role of self-expansion outside of relationships entirely, especially during transitions to new life phases (e.g., the degree to which the level of the desire to self-expand at that time makes the transition appealing or threatening, as when a young person goes to college or an older person retires) or in regard to specific life activities, such as consumer behavior or seeking out or avoiding various experiences and opportunities of all kinds. Further, as real-world applications of the self-expansion principle are made, such as in relationship education, clinical and policy interventions, or contexts such as the workplace or classroom, it will be important to research not only the outcomes but also best evaluation methods and the underlying processes.

There are also important potential moderators of the role of self-expansion motivation across relationship contexts that have been only minimally studied to date, including cultural and class variables and diverse individual differences. For example, people in some cultural or social class contexts or some individuals may be dispositionally more strongly self-expansion motivated. More generally, a number of theoretical predictions have had minimal attention to date. In addition to the strong desire to expand, we hypothesized from the outset (Aron & Aron, 1986) an equally strong desire to integrate expansion experiences and make sense of them, a desire for wholeness or coherence that sometimes preempts the desire for expansion until it is satisfied to some degree. Expansion and integration are two steps in a general pattern of movement toward self-expansion. Further, although minimally studied to date, the model also proposes that if self-expansion proceeds at a rate faster than it can be integrated, it will be stressful.

Inclusion-of-Other Principle

Unlike the motivational principle, the inclusion-of-other-in-the-self principle has been examined, or at least assessed, in a great diversity of relationship contexts and even to some extent cross-culturally. Nevertheless, most work has been done in the romantic and friendship context, with much less known about family and other relationships (e.g., mentoring, coworkers) in which it might be especially relevant. For example, is more inclusion of the mentor or the coworker associated with better outcomes, and is this a simple linear relationship? Similarly, although there have been several cross-cultural studies, most have relied entirely on the IOS Scale. But employing cognitive and neural measures would seem a quite promising opportunity, particularly for understanding the generalizability of the underlying dynamics.

Other specific areas that have only begun to be explored are the relation of psychological inclusion of the other with physical closeness, the question of sometimes being “too close,” and the inclusion of a close other’s perceived rewards and costs. Also, there has been comparatively little work on the operation of individual differences (beyond the valuable work on interdependent self-construal) in moderating the relation of inclusion to other variables. Perhaps most important, as emphasized when discussing the measures, existing work could be greatly deepened by employing cognitive measures of inclusion that, in addition to generally being nonobvious and thus less susceptible to response biases, presumably would reveal in other ways the underlying processes.

In terms of theory in particular, cognitive work would be valuable in sorting out the role of including others in the structure of the self. Computational modeling of the structural links could be a quite promising direction. Another is to investigate its links with theory of mind and to further explore its role in empathic and imitative processes (here, analyses of mirror neurons and related neural indicators of empathic processes might be particularly valuable). From yet another perspective, one might consider the extent to which the inclusion principle may be the key mechanism (parallel in a sense to Cooley’s, 1902, notion of the looking glass self), in which the self is initially and continuously constructed from interaction with others. (Who I am, thus, would be a combination of all those with whom I have relationships.) Indeed, the developmental aspects of inclusion more generally have received little attention.

General Themes across Principles and Their Relationship

From a very general perspective, in addition to diverse relationship and cultural contexts and individual differences, the work on both the motivational and inclusion principles, as with most work in the social sciences, has minimally tapped the opportunity to benefit from animal models and genetic studies. Another crucial, central direction for both principles (and the model more generally) is deeper integration with (and differentiation from where necessary) other theoretical models.

Somewhat more specifically, future research should explore the links between these two principles. For example, research should examine the presumed cyclic nature of expansion and inclusion of the other in the self over the course of a relationship, especially the extent to which a partner’s self can become permanently integrated such that it no longer provides acute self-expansion. More generally, in the “Some Final Thoughts” section below, we discuss some central ways that the two aspects may be linked—ways that also provide opportunities for the next step in our expansion of research on the model.

Some Final Thoughts

Although we have divided this chapter and the self-expansion model into two parts, we would like to bring them together again here and speculate on potential new ways to think about the theory as a whole.

First, it seems that human development from infancy onward involves self-expansion, which primarily occurs through close relationships. Tronick and Beeghly (2011), in a seminal article, argue that infants are open, dynamic, meaning-making systems that have the goal of gathering information that increases their mental complexity and coherence. This is a process of self-expansion, and the more complexity and coherence they have, “the more flexible and better able [they are] to reorganize when challenged by perturbations” (p. 108). Perturbations that can be handled lead to growth, whereas those that cannot be handled lead to disorganization. The infant in a secure parent–child relationship joins its dynamic meaning-making system with an adult, who provides a scaffolding for integrating new information and making sense of it. All of this sounds like a cold system, but, in fact, it is a hot one, full of emotion that supports the motivation to expand. When the dyad is in sync, infants are observed to have relational affects of well-being,

pleasure, and joy; when the dyad is not in sync, they tend to be anxious and unhappy as their sense of coherence dissipates. The authors state, “Thus infants will seek feelings of expansion and connection and avoid anxious, fearful feelings associated with dissipation” (p. 111). That is, during human development, expansion and connection with others are almost synonymous.

An evolutionary perspective leads to a similar understanding. Wilson (e.g., 2002; Sober & Wilson, 1998) points out that humans, along with social insects, underwent a dramatic phase transition as species in their ability to cooperate and coordinate activities, almost becoming superorganisms. This leap made these species extraordinarily successful, occupying more and more niches, commanding more and more resources, and sometimes using other species for their own benefit. Individuals in these exceptionally social species enjoy a type of expansion by belonging to these communities, although in some situations, they also sacrifice their individual interest for the group. That is, they sometimes confuse themselves with the group or with close others in the group. But humans can also use their group and close others to scaffold new information and meaning making, such that personal self-expansion and connection with others are not in conflict but are in many ways almost the same.

Before the scientific revolution, humans developed potentially testable theories of human psychology that point to the same blending of self-expansion and close relationships. In particular, Eastern philosophy (*Brihadaranyaka Upanishad* 4.V.1) describes a self (small self, ego, the self experiencing only the surface of reality, affected by karma, etc.) and a Self (large self, that is or that experiences a very expanded awareness of the totality of existence, in states called *Brahman* or *Nirvana*, and this self or Self is somehow thereby freed from karma and suffering, etc.). According to this perspective, one fundamental motivation, whether conscious or not, is to expand from the small self toward the large Self through relationships. This process begins with the mother–child relationship and advances through other dyads such as marriage or the student–teacher relationship; it may also manifest itself through the desire to possess more and better things, including these in the self. In each case, the individual takes steps in meaning making and expansion toward the final relationship with the Self. Ultimately, the small self and large Self have included each other and become one.

In classic Western philosophy, Plato’s *Symposium* offers a similar perspective on love: “Begin from [love of] the beauties of earth and mount upwards for the sake of that other beauty, using these as steps only...from [love of] fair forms to fair practices, and from fair practices to fair notions, until from fair notions one arrives at the notion of absolute beauty, and at last knows what the essence of beauty is” (Translation from Jowett, 1892, pp. 581–582).

These four threads—developmental, evolutionary, Eastern, and Platonic—are offered as demonstrations of the ubiquity of the link between self-expansion and human connection, and certainly offer ample opportunity for the expansion of research and meaning making regarding close relationships.

Notes

1. Given these findings, one may also wonder whether the basic arousal-attraction effect in initial attraction is driven entirely or in part by shared novelty and arousal. To test this, Lewandowski and Aron (2004) replicated this experiment in the context of an initial meeting between opposite-sex strangers and found only the expected effect for arousal. This finding is consistent with the idea that, in the initial meeting context, there is sufficient novelty and challenge that adding the activity had little additional effect.

2. The plural pronoun method, however, seems to work best when describing a relationship or talking about it. In ongoing interactions, results are more mixed (see Slatcher, Vazire, & Pennebaker, 2008).

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