

CHAPTER I

*Love as Expansion of the Self**Arthur Aron and Jennifer M. Tomlinson***What Is Love? And How Can the Self-expansion Model Help Us Understand It?**

The self-expansion model of love was developed in the 1980s (Aron & Aron, 1986; for a recent review, see Aron, Lewandowski, Mashek, & Aron, 2013). It emerged from an integration of two diverse worlds of knowledge. The first world of knowledge was relevant social-psychological theories of basic human motivation, and the little research that existed at the time on attraction and relationships. The second world of knowledge was from classical concepts of love. From Western philosophy, for example, Plato's *Symposium* on love emphasizes the ultimate goal of growth from loving a specific person to universality. From Eastern philosophy, for example, the Upanishad discusses how close relationships lead to this kind of universality: "the love of the husband is not for the sake of the husband, but he is loved for the sake of the self which, in its true nature, is one with the Supreme Self" (and then continues the same for love of the wife, of children, and even of wealth).

Our focus then was mainly on romantic love, although since then the model has been applied much more widely, both to diverse types of love, and beyond love to fields such as intergroup relations and individual motivation. In this chapter, our focus is on romantic love, both intense passionate love and close relationships more generally.

We first describe key principles of the model, and then turn in more detail to its implications, focusing on initial attraction, the neural basis of being intensely in love, and the trajectories of romantic relationships over the lifespan. We then turn to implications for maintaining and enhancing relationships; then to understanding diverse problems that arise in relationships; and finally, briefly to other kinds of love. We conclude with examples of how the self-expansion model relates to some other major theories and discussion of future directions. We consider our model not

as a competitor to other approaches, but rather as a partner, with the self-expansion model in some cases helping to deepen (or even “expand”) other models, and in other cases, with other models helping to deepen and expand our model (and, of course, in some cases both).

The Self-expansion Model

What is the self-expansion model? The model has two key principles:

1. *Motivational principle*: People seek to expand their potential efficacy, to increase their ability to accomplish goals. That is, a fundamental human motive is what other scholars have described as exploration, effectance, self-improvement, curiosity, competence, or a broadening of one’s perspective. (And experiencing rapid self-expansion should be particularly rewarding.) The motivational principle was influenced by White’s (1959) work, arguing that the drive for efficacy or competence is similar to drives for basic needs such as hunger and thirst. Deci and Ryan’s (1987) theory of intrinsic motivation, Bowlby’s (1969) theory of secure base support for exploration, and Fredrickson’s (2001) broaden-and-build model all touch on related motivational principles. See Aron, Aron, and Norman (2004) for a more detailed discussion.
2. *Inclusion-of-other-in-the-self principle*: One way 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.

And what does all of this mean for love? Based on this model, we define love as “the constellation of behaviors, cognitions, and emotions associated with a desire to enter or maintain a close relationship with a specific other person” (Aron & Aron, 1991, p. 26). That is, love is the desire to expand the self by including a desirable other in the self.

Example Research Support for the Motivational Principle

Aron, Paris, and Aron (1995) conducted a study with undergraduates in two large classes, in which every two weeks over a ten-week quarter, students completed standard self-concept measures along with a measure of whether they had fallen in love in the last two weeks. Those who fell in love in the previous two weeks showed significantly greater self-esteem, self-efficacy, and more traits listed in response to “Who are you today?” (a kind of literal self-expansion). And perhaps the most direct example for making

clear what self-expansion motivation has to say about relationships is the consistent findings of greater relationship quality for those with higher scores on the widely used measure of relationship self-expansion, the Self-Expansion Questionnaire (SEQ; Lewandowski & Aron, 2002). Example 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?”

Example Research Support for Inclusion-of-Other-in-the-Self

The inclusion principle has actually received the most scientific attention. The basic idea is that in a close relationship your mental construction of yourself (the way you spontaneously think of yourself) overlaps with your mental image of your close other. This has been shown in a particularly direct way by the “me-not-me response-time procedure”: You rate yourself and a close other on various traits, and then later in another context, you are shown each trait on a computer screen and asked to press a “yes” or a “no” button for whether the trait is or is not true of yourself. The greater closeness between you and your close other, the slower you are in pressing the button for traits on which you and your close other differ. Other studies have shown, for example, that closeness predicts difficulty in distinguishing memories relevant to the self and the other, greater spontaneous sharing of resources with the others, and more overlapping neural areas when hearing the names of the self and the other. Indeed, a pictorial self-report measure of perceived overlap of the self and the other, the inclusion of the other in the Self Scale (Aron, Aron, & Smollan, 1992) has been used successfully in literally hundreds of studies to date (see Figure 1.1).

Implications for Different Types/Stages of Romantic Love*Attraction and Falling in Love*

With whom are you likely to fall in love? Many studies on the predictors of initial interpersonal attraction have documented the importance of reciprocal liking (the other person liking you), desirable characteristics, and seeing the other as similar (see Zhou, Chelberg, & Aron, 2016, for a review). It feels good to be liked by others and it is also rewarding to be around others who validate our worldviews (Byrne, 1971). The findings on reciprocal liking and similarity taken together suggest that perceptions of

Please circle the picture below which best describes your relationship

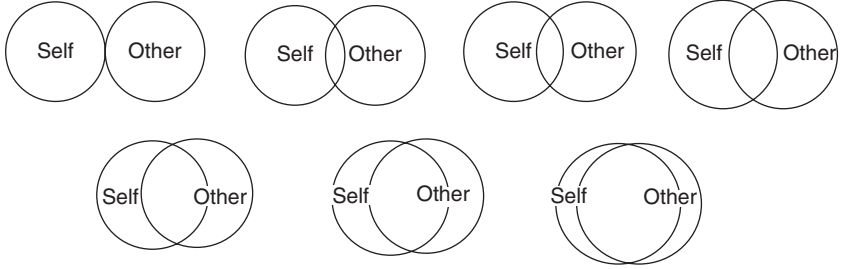


Figure 1.1 The inclusion of the other in the Self Scale.
 (Originally printed in Aron et al., 1992.)

how others feel about the self are crucial in deciding with whom to engage in a relationship. The self-expansion model also sheds light on the processes of interpersonal attraction, suggesting that the standard situation works in part because reciprocal liking and similarity suggest a relationship (and thus expansion) is likely; and desirable characteristics are desirable at least in part because they are qualities that would expand the self if you had a relationship with this person. (Indeed, research going beyond attraction, examining people's experiences of falling in love, found that the most common situation was one in which a desirable other did something that indicated they liked the self; e.g. Riela, Rodriguez, Aron, Xu, & Acevedo, 2010.)

In addition, the model has pointed out some situations where, after reciprocal liking is established (and a relationship seems likely), opposites might attract. In one experiment, participants were given a measure of interests and a week later were shown the interest results of a supposed other person whom they were either told they were likely to get along with or about whom they were given no information. The first condition created an expectation for relationship certainty, establishing the idea that reciprocal liking was likely to occur. As predicted, based on the notion that different interests, if a relationship is possible, offer greater expansion of the self, participants in the relationship certainty condition reported liking dissimilar others more than similar others (Aron, Steele, Kashdan, & Perez, 2006).

Being Intensely in Love

So, you have now fallen in love. What does it mean to be passionately in love? One way researchers have explored this question is with brain imaging. We

consider self-expansion (and especially the perceived opportunity for rapid expansion) through a relationship to be a powerful motivation. Passionate love specifically represents the intense desire for self-expansion through a relationship with the beloved (and thus, including him or her in oneself). Brain imaging can provide a clear picture of the degree of intense motivation experienced when one is in love.

Over the last dozen years, several functional magnetic resonance imaging (fMRI) studies have consistently demonstrated greater activation in the brain's key reward system when in-love individuals viewed a facial photo (or even when they were subconsciously presented with the name) of their romantic partner versus a facial photo of a familiar acquaintance. These findings have been replicated cross-culturally and across sexual orientation (for a review, see Acevedo, 2015). The key areas found again and again represent what is known as the dopamine reward system, the same brain areas that respond to cocaine. (Although the notion that romantic love is fundamentally a reward-based process is consistent in a general way with many models of love, it specifically supports the self-expansion model notion that passionate love should be considered more from a motivational than an emotional perspective, that it is associated more with expansion than survival, and that it is not primarily a more-specific brain system.)

This neural pattern has even been found in a study of long-term married individuals reporting high levels of passionate love (Acevedo, Aron, Fisher, & Brown, 2011). This study also explicitly measured key self-expansion model variables, and found that (a) activation of the dopamine system was correlated with greater inclusion of the other in the self (as measured by the IOS Scale) and that (b) participants also showed stronger dopamine system activation in association with greater relationship self-expansion (measured by the SEQ). Other fMRI studies provide further support for the centrality of this motivational system in passionate love. For example, when individuals experiencing intense romantic love are shown images of their partner (versus neutral acquaintances), it reduces brain responses to physical pain (Younger et al., 2010). And in a study of habitual smokers who are in love, viewing images of the beloved significantly reduced the brain's response to images of cigarettes (versus of pencils) (Xu, Wang, et al., 2012).

Ongoing Love and Relationship Closeness

Love as including each other in each other's self. In a love relationship, the identities of two partners become intricately intertwined. For

example, partners know what the other is thinking, can finish each other's sentences, and have difficulty remembering what belongs to whom. As we noted earlier, describing the "me-not-me" procedure, this can happen so much so that reaction-time studies have shown that it takes longer to decide whether a trait belongs to yourself if it doesn't also belong to your partner; mental representations of the self include elements of close others. There are many studies showing this self-other overlap in a variety of ways. For example, Aron, Aron, Tudor, and Nelson (1991) asked participants to rate the extent to which they and a non-close other possessed pairs of traits (e.g. "carefree-serious"). Participants were given the option to report that only one trait, both traits, or neither trait applied to themselves and a non-close other. People reported both traits applied more when rating the self compared to a non-close other, because people are less likely to make dispositional attributions (seeing a person as all one-way) about the self compared to others (Sande, Goethals, & Radloff, 1988). Aron et al. (1991) showed that individuals also chose more "both apply" options when rating close others (similar to when rating the self). These results suggest that people treat close others in the same way that they treat themselves, spontaneously showing to some extent the same self-other dispositional bias for a close other as for the self. When in a close relationship, people demonstrate cognitive interdependence as well, which means they are more likely to use pronouns such as 'we' and 'us' compared to 'me' and 'my' (Agnew, Van Lange, Rusbult, & Langston, 1998). In addition, people are better at inferring intentions of close others compared to non-close others, owing to the activation of brain areas related to familiarity (Cacioppo, Juan, & Monteleone, 2017).

In such deeply interdependent relationships, perceived partner responsiveness, or the sense that the partner understands, validates (gets you), and cares for you, is central (Reis, Clark, & Holmes, 2004). One study suggests that perceptions of how much your partner includes you in their self are important in determining the extent to which you are willing to also include your partner in your own self (Tomlinson & Aron, 2013).

Love over time. Love and general relationship satisfaction consistently show typical declines over time (e.g. Karney & Bradbury, 1997; O'Leary, Acevedo, Aron, Huddy, & Mashek, 2012; Tucker & Aron, 1993). The self-expansion model argues that passion arises from the intensity of the rapid self-expansion that occurs in the formation of a relationship as one comes to include the other in the self; but once the other is largely included, the rate of expansion inevitably slows down. Indeed, in a large representative

sample, how much passionate love one feels was associated with self-expansion in relationships over time (Sheets, 2014). The benefits of self-expansion are likely owing to increases in positive affect (Graham & Harf, 2015; Strong & Aron, 2006) and decreases in boredom (Tsapelas, Aron, & Orbuch, 2009). (As an aside, in a sense, passionate love is selfish in that it is focused on my feelings of self-expansion, but it is also unselfish in that because I include the other in the self, his or her self-expansion is also experienced as my own. So, we should be motivated to want the other to expand, and both partners should experience rapid self-expansion, but this has not been directly tested.)

Nevertheless, although passionate love (and satisfaction and love of all kinds) generally declines over time, the view that passionate love *inevitably* declines has not been demonstrated. It is clear that many long-term couples experience high levels of satisfaction. Indeed, in a four-year longitudinal study of newlyweds, Karney and Bradbury (1997) found that about 10% maintained or increased their level of satisfaction. Perhaps more surprising, in a representative US survey, 40% of individuals married for ten years or longer reported being “very intensely in love” with their partner (O’Leary et al., 2012). Further, interview data (Acevedo & Aron, 2005) suggests that at least some reports may correspond to how the relationship is actually being experienced and are not due merely to wanting to make a good impression or self-deception. These results were supported by fMRI data in partners reporting intense passionate love and married an average of 21.4 years, showing that brain activation is similar to that found in early stage passionate love (Acevedo et al., 2011). Further, brain activation in areas associated with passionate love and reward were positively correlated with satisfaction in long-term couples (Acevedo et al., 2011). There is also evidence that brain activation early on in a relationship predicts relationship stability and quality up to forty months later (Xu, Brown, et al., 2012).

Ways to Maintain/Enhance Love

How Can We Keep the Passion Alive?

Shared self-expansion activities. Once relationship partners can no longer gain substantial expansion from the initial development of the relationship, they can renew that sense to some extent by engaging in expanding activities together and thus associate the relationship and partner with the expansion from that shared expanding activity. Participation in shared self-expanding activities positively influences romantic relationship satisfaction

(Aron, Norman, Aron, McKenna, & Heyman, 2000). Reissman, Aron, and Bergen (1993) randomly assigned married couples to participate together each week in either an exciting or a pleasant but not exciting activity for ten weeks. The activities most often listed as exciting included things like attending musical concerts, plays, lectures, skiing, hiking, and dancing. Couples who participated in exciting activities had significantly greater increases in satisfaction after the ten weeks compared to those who participated in pleasant activities. Five other studies further established the impact of exciting activities above and beyond the effect of mundane activities on relationship satisfaction (Aron et al., 2000). For example, in three experiments, couples in the exciting condition participated in an obstacle course task together that included elements of novelty, challenge, and arousal. Further, a randomized clinical trial experiment asked couples to complete exciting activities for ninety minutes per week for four weeks (Coulter & Malouff, 2013). As in Reissman et al. (1993), couples chose the activities themselves after giving suggestions that were adventurous, passionate, sexual, exciting, interesting, playful, romantic, and spontaneous. Results showed that couples in the exciting group (compared to a waitlist control) had increased relationship excitement, positive affect, and satisfaction when tested four months later.

The self-expansion model suggests that exciting activities should be beneficial over more mundane or pleasant activities, but exactly what the exciting activities should look like has not been spelled out. The majority of the exciting activities that have been considered across studies contain elements of novelty, challenge, interest, and arousal (not necessarily sexual, but just general physical arousal). These initial studies did not identify which elements of excitement are most essential and if they vary by stage and type of relationship. Tomlinson, Hughes, Lewandowski, Aron, and Geyer (in press) sought to clarify this issue by comparing the effects of arousal and expansion in ongoing friendships and marriages. Across four studies, in both friend and married pairs, expansion was central to both individual and relationship outcomes, whereas arousal was not. These are only initial findings, but if future work continues to find this pattern, this suggests that elements of expansion, such as interest and fun, should be prioritized over physical arousal when selecting shared activities within ongoing relationships. That is, doing things together that are interesting and fun has more effect on love than just exercising together!

In addition to identifying the benefits of shared participation in exciting activities, research in this area also suggests that the mechanisms behind

the benefits of exciting activities are owing to increases in positive affect (Coulter & Malouff, 2013; Graham & Harf, 2015; Strong & Aron, 2006) and decreases in boredom (Aron et al., 2000; Tsapelas et al., 2009). Daily diary research suggests that the increases in positive affect and decreases in boredom while participating in exciting activities may occur because of a sense of flow or optimal engagement in the activity (Graham, 2008). For optimal engagement to occur, it is important that the couple's skill levels are matched with the challenge level of the task. If a task is too challenging (in such a way that exceeds skill), couples did not experience benefits (Graham & Harf, 2015).

One type of shared activity many couples choose to seek out is a double date with another couple. Recent research experimentally tested the effects of engaging in a shared self-expansion task with another couple (Slatcher, 2010; Welker et al., 2014). In these studies, reciprocal and escalating levels of self-disclosure across couples provide the vehicle for self-expansion. Couples engaged in a forty-five-minute closeness building task. (This procedure, developed by Aron, Mellinat, Aron, and Vallone (1997) and usually done with pairs of strangers, is widely used in research and is known as "Fast Friends." It has become popular in the broader culture as "The 36 Questions for Closeness." There are a series of questions that are increasingly self-disclosing; each of the four answers each question, before proceeding to the next; and this continues for about forty-five minutes.) Those who did the closeness task, compared to pairs of couples who did a similarly long small talk task, felt closer to the couple that they got to know through the task, and more importantly, felt closer to one another (Slatcher, 2010). In addition, couples who engaged in the closeness task (compared to couples who made small talk) with another couple experienced increases in positive affect (Slatcher, 2010) and passionate love (Welker et al., 2014). These results suggest that simply sharing deep conversation with another couple might provide a way of enhancing and maintaining relationships over time.

Individual self-expansion activities. Although there is a clear benefit to engaging in shared activities with a partner, couples also spend a substantial portion of their time apart and engaging in hobbies, work, friendships, and other activities. There is a growing body of research that suggests that individual activities can provide an excellent vehicle for individual self-expansion (e.g. Mattingly & Lewandowski, 2013). Across a variety of experiments, individuals who engaged in novel, exciting, and interesting

activities (compared to controls) experienced increased self-expansion and exerted greater effort (Mattingly & Lewandowski, 2013). Individual self-expansion activities lead to benefits because they increase the self-concept size and promote approach motivation (Mattingly & Lewandowski, 2014; Mattingly, McIntyre, & Lewandowski, 2012); a result that applies even in the work place (McIntyre, Mattingly, Lewandowski, & Simpson, 2014). By participating in individual self-expansion activities, whether they be leisure activities or a satisfying job, people can increase their own self-concepts and bring novel identities, perspectives, and resources back to the relationship and their partner.

Support for partner's self-expansion. Because participation in individual self-expansion activities has the potential to lead to relationship benefits, it would be advantageous for partners to encourage one another to seek out activities that might lead to expansion. Indeed, within long-term relationships, individuals whose partners actively encouraged them to seek out an opportunity for self-expansion (in comparison to those partners who only provided a passive acknowledgment) experienced increased relationship satisfaction (Fivecoat, Tomlinson, Aron, & Caprariello, 2015). In addition, people who perceive their partners to support their goal strivings experience increased feelings of capability of accomplishing the goal, which leads to self-growth, goal accomplishment, and self-esteem over time (Tomlinson, Feeney, & Van Vleet, 2016).

Self-expansion in retirement. Much of the research on self-expansion has been done with college students or relatively young married couples. However, there is evidence that older adults self-expand in a variety of life domains (Harris, Kemmelmeier, & Weiss, 2009). Retirement could be viewed as an opportunity to seek out activities that could lead to growth, which couples did not have time for while focusing on career goals. In a recent longitudinal study, we asked retirees to respond to the same question "Who are you today?" that we asked college students to answer in the Aron et al. (1995) study on falling in love. Interestingly, we found that during the transition to retirement, in general, people's self-concept size and diversity decreased, but partner support for self-expansion predicted an increase in self-concept size over a six-month period (Tomlinson, Yosaitis, Challenger, Brown, & Feeney, 2015). In addition, partner support for self-expansion predicted relationship satisfaction, satisfaction with retirement, self-efficacy, goal accomplishment, and health over time (Tomlinson & Feeney, 2016).