

# Growing Desire or Growing Apart? Consequences of Personal Self-Expansion for Romantic Passion

Kathleen L. Carswell<sup>1</sup>, Amy Muise<sup>2</sup>, Cheryl Harasymchuk<sup>3</sup>, Rebecca M. Horne<sup>4</sup>, Mariko L. Visserman<sup>4</sup>, and Emily A. Impett<sup>4</sup>

<sup>1</sup> Department of Psychology, Durham University

<sup>2</sup> Department of Psychology, York University

<sup>3</sup> Department of Psychology, Carleton University

<sup>4</sup> Department of Psychology, University of Toronto Mississauga

Romantic passion represents one of the most fragile and elusive elements of relationship quality but one that is increasingly valued and tied to relationship and individual well-being. We provide the first examination of whether experiencing *personal* self-expansion—positive self-change and personal growth without a romantic partner—is a critical predictor of passion. Previous research has almost exclusively examined the consequences of couples' sharing novel experiences (i.e., relational self-expansion) on romantic relationships. Instead, the consequences of personal self-expansion for romantic relationships remain largely unexamined even though most positive self-growth may occur without a romantic partner (e.g., at work). We investigated the consequences of personal self-expansion for passion in three studies including two 21-day experience sampling studies of community couples and a study in a context likely to elicit heightened personal self-expansion: during job relocation. Within-person increases in daily personal self-expansion were associated with greater passion through greater positive emotions (Studies 1 and 2). In contrast, high between-person levels of personal self-expansion were associated with lower passion through lower levels of intimacy, suggesting that individuals may drift apart from their partners with more chronic personal self-expansion (Studies 1, 2, and 3). That is, consistently growing outside of the relationship in ways that are not shared with a romantic partner may reduce feelings of closeness and connection, and ultimately passion. Results also suggest that chronic personal self-expansion may be a double-edged sword for individual well-being, simultaneously associated with lower passion, but greater fulfillment of competence needs. Results controlled for relational self-expansion and time together.

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“We are not the same persons this year as last; nor are those we love. It is a happy chance if we, changing, continue to love a changed person.” (Maugham, 2020)


—W. Somerset Maugham


Maintaining passionate feelings in a relationship is an often sought after but hard-to-attain goal. Passion typically peaks early in relationships and then precipitously declines over time (Acker &


Davis, 1992; Carswell et al., 2019; Traupmann & Hatfield, 1981; Tucker & Aron, 1993). In the face of this rather bleak prognosis for what is arguably one of the most rewarding and exciting elements of relationship quality (Aron et al., 2005), the self-expansion model (Aron & Aron, 1986) offers one avenue for combating this decline. According to this model, self-expansion—positively growing and expanding one's self-concept—is a fundamental human motivation (Aron & Aron, 1986). Self-expansion can be achieved either through or in tandem with a romantic partner in *relational self-expansion*, or outside of a romantic relationship in *personal self-expansion*. A growing body of empirical research has found that engaging in relational self-expansion (e.g., novel, personal growth experiences with a romantic partner), in particular, can increase passionate feelings toward a romantic partner (Aron & Aron, 1986; Aron et al., 2000; Muise et al., 2019; Sheets, 2014; Welker et al., 2014).

Engaging in relational self-expansion, however, often requires joint coordination. Partners might not agree upon or have the time and resources to engage in such shared growth experiences (Fitzsimons et al., 2015; Gere & Impett, 2018). The vast majority of self-expansion experiences may therefore occur outside of one's


Kathleen L. Carswell  <https://orcid.org/0000-0001-9442-280X>

Amy Muise  <https://orcid.org/0000-0002-9000-4106>

Cheryl Harasymchuk  <https://orcid.org/0000-0002-9872-0035>

Rebecca M. Horne  <https://orcid.org/0000-0003-2982-8779>

Mariko L. Visserman  <https://orcid.org/0000-0001-8747-3852>

Emily A. Impett  <https://orcid.org/0000-0003-3348-7524>

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Correspondence concerning this article should be addressed to Kathleen L. Carswell, Department of Psychology, Durham University, Upper Mountjoy, South Road, Durham DH1 3LE, United Kingdom. Email: [kathleen.carswell@durham.ac.uk](mailto:kathleen.carswell@durham.ac.uk)

relationship in *personal self-expansion*—personal growth that does not involve or derive from one's partner (Graham, 2008). Although relational self-expansion appears to be almost universally positive in its influence on both relationship quality and individual well-being (see Aron et al., 2013 for a review), the consequences of engaging in personal self-expansion are less clear. A small body of emerging work suggests there may be potential benefits of engaging in personal self-expansion for individual well-being (Gordon & Baucom, 2009; Gordon & Luo, 2011; Mattingly & Lewandowski, 2013a, 2013b, 2014; Xu et al., 2010), but existing research does not afford clear conclusions for relationship well-being.

Personal self-expansion could easily have positive or negative effects on relationship quality and, notably, romantic passion. On the one hand, engaging in personal self-expansion may increase feelings of romantic passion as the rewarding experience of growing as an individual, even without the involvement of a romantic partner, may carry over into the relationship. Personal self-expansion may also help to create new self-aspects and experiences that can be later shared with a partner and enhance relational self-expansion or create new opportunities to develop intimacy. On the other hand, growing in ways that do not involve a partner may lead couples to drift apart, leading to a loss of intimacy and closeness that results in declines in romantic passion. We explore these two possibilities, as well as potential consequences for individual well-being, in the present investigation.

### Romantic Passion

Romantic passion, or passionate love, is most commonly defined as “an intense longing for union with the other” (Hatfield & Walster, 1978, p. 9).<sup>1</sup> Romantic passion is increasingly valued in individualistic, Western cultures, and is now paramount in decisions to enter or end marriages, as well as a critical determinant of relationship quality and individual well-being (Allgeier & Wiederman, 1991; Hatfield & Rapson, 2006; Hatfield et al., 2007). For example, one common assumption is that divorce arises from conflictual and unhappy marriages; however, recent research suggests that almost half of all divorces arise from low-conflict, relatively happy marriages (Amato & Hohmann-Marriott, 2007). Instead, the absence of especially positive experiences, and notably a lack of romantic passion, is an increasingly critical predictor of relationship dissolution (Gable & Reis, 2001; Hatfield et al., 2007; Simpson et al., 1986). Marital boredom, a proxy for low passion, is one of the main reasons people cite for seeking divorce (Gigy & Kelly, 1992), and according to one study, almost half of men and women believe that the loss of love is a sufficient reason to end a marriage (Simpson et al., 1986). Divorces from low-conflict marriages are also especially likely to wreak havoc on the individual well-being of both divorcees and their children, who suffer greater reductions in life happiness and self-esteem following divorce than those from high-conflict marriages (Amato, 2003; Amato & Hohmann-Marriott, 2007).

Romantic passion is also associated with greater relationship satisfaction, commitment, and reduced rates of infidelity (Carswell & Finkel, 2018; Tsapelas et al., 2009). Similarly, satisfaction with life, positive emotions, and health outcomes tend to be higher among those passionately in love (Kim & Hatfield, 2004; Traupmann & Hatfield, 1981). Unfortunately, despite the myriad of

benefits associated with romantic passion and cultural importance placed on it, romantic passion is especially fragile and difficult to maintain compared with other elements of relationship quality (e.g., commitment, intimacy), with a normative tendency to rapidly and continuously decline after the first few years of a relationship (Acker & Davis, 1992; Carswell et al., 2019; Traupmann & Hatfield, 1981; Tucker & Aron, 1993).

### The Self-Expansion Model

One effective way to combat declines in passion is through self-expansion, which is theorized to be a primary source of romantic passion (Aron & Aron, 1986; Aron et al., 2000; Muise et al., 2019). According to the self-expansion model (Aron & Aron, 1986), individuals possess a fundamental motivation to grow and add positive content to their self-concept in a process referred to as *self-expansion*. Self-expansion is theorized to result from engaging in any number of life experiences, including engaging in new activities, or acquiring new identities, perspectives, or abilities. Most previous research and original theorizing have examined how self-expansion can be achieved through close relationships (Mattingly & Lewandowski, 2014).

Developing new romantic relationships is theorized to be a primary means by which individuals increase their self-concepts, which is why early stage relationships are often typified by high levels of romantic passion. New romantic partners provide novel perspectives, traits, and resources that individuals incorporate into their own self-concept. Engaging in new shared experiences (e.g., interesting dates) with romantic partners can likewise serve to expand the self. As a rewarding and positive experience, such relational self-expansion is theorized to ignite feelings of passion toward romantic partners who provide opportunities for self-expansion (Aron & Aron, 1986; Aron et al., 2013). Indeed, correlational and experimental studies provide evidence for a link between relational self-expansion and increased romantic passion (Aron et al., 2000; Coulter & Malouff, 2013; Muise et al., 2019; Sheets, 2014; Welker et al., 2014).

Unfortunately, like romantic passion, relational self-expansion is theorized to decline over time in a relationship with greater familiarity (Aron & Aron, 1986; Baumeister & Bratslavsky, 1999). As partners come to know one another and have already adopted each other's traits and resources, opportunities for relational self-expansion may decline. In support of this prediction, a cross-sectional study found that individuals who are in longer (as opposed to shorter) duration relationships report lower levels of relational self-expansion; in turn, this reduced self-expansion was associated with reduced romantic passion (Sheets, 2014). Although increasing engagement in novel activities with a romantic partner can help to offset this decline (Aron & Aron, 1986; Aron

<sup>1</sup> Although this can and often does include a longing for sexual union in the form of sexual desire—for example, passionate love and sexual desire are often strongly correlated (see Hatfield et al., 2012 for a review)—passionate love also includes a strong desire for emotional union and closeness with a romantic partner, and it activates separate brain regions than sexual arousal and desire (Aron et al., 2005; Fisher, 1998, 2006; Fisher et al., 2002). However, given how closely linked sexual desire is to romantic passion in modern, Western contexts, for the present investigation, we will combine assessments of passion and sexual desire in-line with previous research (Muise et al., 2019).

et al., 2000; Coulter & Malouff, 2013; Muise et al., 2019; Welker et al., 2014), it may not always be easily achievable. Engaging in shared novel activities (e.g., planning an especially exciting date) requires joint coordination. Couples need to agree upon the types of activities to pursue and have the overlapping time and resources to participate in these activities together (Fitzsimons et al., 2015; Gere & Impett, 2018). While couples increasingly look to their partners to fulfill their growth and self-expansion needs, historical trends suggest that they also now spend less time together to achieve these goals (Finkel et al., 2014). Thus, engaging in personal self-expansion may serve as another potentially easier way to achieve passion or a complementary way to offset declines in passion.

## Personal Self-Expansion

### Personal Self-Expansion and Romantic Passion

Given these restrictions on relational self-expansion, most personal growth opportunities and experiences likely occur *outside* of one's relationship in *personal self-expansion* (e.g., learning a new skill at work, volunteering in a soup kitchen). In an experience sampling study (Graham, 2008), participants reported the highest levels of psychological activation (i.e., higher levels of alertness, involvement, activity, and excitement), a proxy for self-expansion, when engaging in paid work and activities that occurred in the presence of work colleagues, suggesting that many self-expansion experiences occur at work without a romantic partner present. However, we know far less about how these growth experiences that do not involve a romantic partner influence one's relationship and feelings of romantic passion. Given that personal self-expansion is not derived from or shared with a romantic partner, it is not immediately clear how personal self-expansion might subsequently influence feelings toward a romantic partner.

On the one hand, we might expect that such personal growth outside of the relationship would *increase* romantic passion. As an inherently rewarding and positive experience, positive emotions and excitement related to personal growth—even without a partner's involvement—might color later thoughts and interactions with a romantic partner, resulting in increased passion. Suggestive of this possibility, a dispositional tendency toward self-expansion broadly (either inside or outside one's relationship) was found to be indirectly associated with greater relationship satisfaction through more positive emotions (Gordon & Baucom, 2009; Gordon & Luo, 2011). Similarly, individuals with more creative personalities—who have a tendency toward self-expansion—both report and are observed to experience more passion for their partners and are more apt to maintain passion over time compared to less creative individuals (Carswell et al., 2019). Theoretical perspectives on work-family facilitation also suggest that personal growth at work (a setting that typically does not involve the romantic partner), including the acquisition of new skills, knowledge, values or perspectives, can carry over and enhance family and romantic relationships (Wayne et al., 2007).

Growing outside of the relationship may also help to create space to reignite feelings of passion. According to the rate of change in intimacy model (Baumeister & Bratslavsky, 1999; Rubin & Campbell, 2012), a primary source of romantic passion is experiencing a rise in intimacy and closeness. Specifically, akin to the self-expansion model, achieving greater levels of intimacy—

sharing aspects of the self with a partner and having those self-aspects be accepted and met warmly by a partner, as well as having or expressing greater warm, positive feelings toward each other—promotes feelings of romantic passion. However, once couples achieve high levels of closeness and intimacy, achieving even greater levels of closeness and intimacy becomes challenging as novel self-disclosures become increasingly rare (Aron & Aron, 1986; Baumeister & Bratslavsky, 1999; Perel, 2007). Personal self-expansion may help to alleviate such intimacy plateaus. By developing new self-aspects and experiences that can be later shared and accepted by a romantic partner, personal self-expansion may allow for further rises of intimacy and promote passion. Thus, we suggest that engaging in personal self-expansion may be associated with increased romantic passion potentially through greater positive emotions and/or increased intimacy.

On the other hand, growing outside of a relationship in a way that does not involve a romantic partner may cause couples to grow apart and *decrease* romantic passion. Research from the organizational literature finds that individuals with an obsessive involvement with work often report increased work-family conflict (Caudroit et al., 2011; Houliort et al., 2018), suggesting that rewarding personal growth experiences that do not involve the partner, such as those at work, could add strain to a relationship. Some individuals also resist or are generally unsupportive of their partner changing, even positively, for fear they must change themselves or be left behind, resulting in lower relationship quality for both partners (Emery et al., 2018; Fivecoat et al., 2015). In fact, “growing apart” is a common reason cited for divorce (Gigy & Kelly, 1992). Thus, we suggest that personal self-expansion may be equally likely to be associated with reduced rather than increased romantic passion, potentially through reduced relationship intimacy.

### Personal Self-Expansion and Individual Well-Being

Although it is possible that personal self-expansion may influence the *relationship* in either positive or negative ways, based on emerging work, we predict that personal self-expansion will largely be associated with positive outcomes for the *self* and greater individual well-being. Recent research has found personal self-expansion to be associated with greater self-efficacy, persistence, and motivation, as well as greater positive emotions (Gordon & Baucom, 2009; Gordon & Luo, 2011; Mattingly & Lewandowski, 2013a, 2013b; Xu et al., 2010, 2017). These parallel more established findings documenting a positive association between relational self-expansion and individual well-being (Aron et al., 1995). One reason relational self-expansion is associated with greater individual well-being is that such personal growth experiences with a partner help meet basic psychological needs (McIntyre et al., 2019). Specifically, according to self-determination theory (SDT; Ryan & Deci, 2000), individuals possess fundamental psychological needs for relatedness, competence, and autonomy, and the fulfillment of these needs is critically tied to individual well-being. McIntyre et al. (2019) found that relational self-expansion helps to fulfill each of these needs, which, in turn, are associated with increased individual well-being and psychological health.

Given that the meeting of basic psychological needs may underlie the link between relational self-expansion and individual well-being, we might similarly anticipate that personal self-expansion is associated with greater individual well-being by also fulfilling each of these

needs. For example, given recent work suggesting that engaging in personal self-expansion increases feelings of self-efficacy (Mattingly & Lewandowski, 2013a, 2013b), one might anticipate that engaging in personal self-expansion would increase fulfillment of competence needs, which would, in turn, increase individual well-being. Personal self-expansion may also increase fulfillment of autonomy needs. By definition, personal self-expansion occurs without the involvement of a romantic partner. Without the restriction of having to agree upon and coordinate such experiences with a romantic partner, individuals may feel that these behaviors and experiences are more autonomous and freely chosen. Finally, although such experiences are not shared with a romantic partner, they may be shared with individuals other than their romantic partner. To the degree that such personal self-expansion experiences involve others, engaging in personal growth with or through other individuals may increase feelings of relatedness as such experiences grow or strengthen feelings of connectedness in their social network. Thus, in addition to examining the association of personal self-expansion with relationship quality and specifically romantic passion, the present research also aims to replicate and extend previous findings showing that personal self-expansion is associated with greater individual well-being by examining whether it is associated with increased need fulfillment of some, if not all, of these basic psychological needs.

### Hypotheses and Research Overview

We conducted three studies that employ a variety of methods including cross-sectional, daily experience sampling, and longitudinal designs. In Studies 1 and 2, participants completed a 21-day daily diary in which they reported on their daily personal and relational self-expansion experiences, as well as daily romantic passion. The daily diary design of Studies 1 and 2 afforded us the opportunity to examine the associations between both daily within-person fluctuations and chronic between-person differences in personal self-expansion with romantic passion and test our competing predictions about how personal self-expansion (both in the moment and more chronically) is associated with passion. The daily diary components of Studies 1 and 2 were also followed by a 3-month follow-up questionnaire to assess longer-term changes in passion. In Study 3, we examined the effects of personal self-expansion during a period when more intensive personal and relational self-expansion opportunities arise: within 12 months of moving with a romantic partner. To rule out the possibility that any observed associations between personal self-expansion and romantic passion were due to individuals not desiring or being unable to spend time with their romantic partner, we also assessed and controlled for daily time spent with their romantic partner.

In addition to these two competing hypotheses, we also sought to examine the potential mechanisms through which personal self-expansion might be associated with higher or lower romantic passion. Specifically, we examined whether personal self-expansion might increase feelings of passion through heightened positive emotions that carry over into the relationship, as well as whether personal self-expansion might allow for additional increases in intimacy and, thus, passion. To test these potential mechanisms, Studies 1 and 2 included assessments of daily positive emotions and relationship intimacy, and Study 3 included assessments of general levels of relationship intimacy. The assessment of intimacy also enabled us to examine whether

personal self-expansion might decrease passion through couples drifting or growing apart, as evidenced by lower levels of intimacy.

Although our primary interest was to examine the effects of personal self-expansion on romantic passion, we also sought to replicate and extend existing research suggesting personal self-expansion is associated with greater individual well-being (Gordon & Baucom, 2009; Gordon & Luo, 2011; Mattingly & Lewandowski, 2013a, 2013b; Xu et al., 2010, 2017). Although there is the potential for personal self-expansion to have negative consequences for the relationship, we hypothesize that even under these circumstances, the pursuit of personal self-expansion may be worthwhile for the self due to potential benefits to individual well-being. Therefore, in Study 2 we included a daily assessment of individual subjective well-being, as well as a more general assessment of individual subjective well-being in Study 3. In Study 3, we include assessments of the degree to which participants' relatedness, competence, and autonomy needs were being met to test whether meeting these needs might play a critical role in the association between personal self-expansion and greater individual well-being. Finally, we include a meta-analytic summary across studies of the main between-person associations between chronic personal self-expansion and passion.

### Study 1

As an initial test of the role of personal self-expansion in shaping romantic passion, we conducted a 21-day daily diary study in which couples reported the extent to which they had experienced personal and relational self-expansion using adapted and established scale measures, as well as their romantic passion for their partner at the end of each day.<sup>2</sup> Three months later, participants also completed a follow-up assessment of their romantic passion so that we could assess the potential for longer-term changes in passion. We also sought to examine whether potential positive associations between personal self-expansion and passion were due to either positive experiences of self-expansion transferring to the relationship or by allowing for further increases in intimacy. Thus, we measured participants' daily positive emotions and intimacy, respectively. Similarly, we also sought to examine whether a potential negative association between personal self-expansion and passion might be due to couples drifting apart, again by measuring participants' daily intimacy.

### Method

#### Participants

A total of 122 couples were recruited to participate in an online 21-day daily diary study with a baseline survey and 3-month longitudinal follow-up (age:  $M = 31.53$ ,  $SD = 9.46$  years old; race: 78.3% White, 6.8% Latin American, 4.3% East Asian, 2.6% South Asian, 2.1% Black, 6.0% bi- or multiethnic/racial or self-identified as "other"). Participants were recruited through advertisements on the websites Reddit and Kijiji (posted in five major

<sup>2</sup> Studies 1 and 2 also included a measure assessing whether participants had engaged in sexual activity with their partner each day. However, because this assessment had to be analyzed largely at the couple-level and because there are numerous reasons why passion and sexual desire might not translate into sexual activity, we chose to summarize these analyses in Appendix S.A of the online supplemental materials.

Canadian cities), as well as through advertisements posted in various public locations (e.g., libraries, community centers, coffee shops) in a major Canadian city. Couples had to be in an exclusive, monogamous romantic relationship, have been together for at least 2 years, be currently living together, and both agree to take part in the study to participate (relationship length:  $M = 8.24$ ,  $SD = 7.10$  years; relationship status: 56.2% married, 21.6% engaged, 22.2% seriously dating relationship and living together; sexual orientation: 86% heterosexual, 7% gay/lesbian, 5% bisexual, 2% "other"). We initially aimed to recruit at least 100 couples as part of a larger study on romantic relationships following the recommendations of Kenny et al. (2006) plus additional couples to account for potential attrition or missing data.<sup>3</sup> By recruiting 122 couples, we surpassed this goal. As this study included a daily diary component, a total of 4,775 days were collected in the current study.

### Procedure and Materials

As part of a larger study on romantic relationships, participants completed a daily questionnaire at the end of each day for 21 consecutive days, which included scale assessments of their personal and relational self-expansion each day, as well as daily assessments of positive emotions, relationship intimacy, passion for their romantic partner, and time spent with their romantic partner.<sup>4</sup> On the day prior to the first day of the daily diary and 3 months after the daily diary, participants also completed background and follow-up questionnaires, respectively. These questionnaires included assessments of romantic passion that afforded tests of long-term change in romantic passion. Table 1 depicts correlations among measures.

**Daily Personal Self-Expansion Scale.** Participants completed a five-item adapted scale assessment of how much they had experienced self-expansion that day (adapted from Lewandowski & Aron, 2002). Specifically, participants answered the questions: "How much did you feel a greater awareness of things?"; "How much did you expand your sense of the kind of person you are?"; "How much do you feel a sense of excitement?"; "How much did you feel that you have a larger perspective on things?"; and "How much did you increase your knowledge?" (1 = *not very much* to 7 = *very much*;  $Rc = .89$ ,  $M = 3.30$ ,  $SD = 1.76$ ).<sup>5</sup> To assess personal self-expansion, we then controlled for participants' reported relational self-expansion that day in our analyses to isolate effects of self-expansion that specifically did not involve their partner. We chose to isolate personal self-expansion from general self-expansion by controlling for relational self-expansion rather than explicitly asking about their experience of personal self-expansion not involving their romantic partner due to concerns that participants might interpret such items negatively.

**Daily Relational Self-Expansion Scale.** Participants completed the six-item self-expansion scale (Muise et al., 2019), which measured the extent to which they had expanded their sense of self through their romantic partner that day. Specifically, participants answered the questions: "How much did being with your partner result in you having new experiences?"; "Did you feel a greater awareness of things because of your partner?"; "How much did being with your partner expand your sense of the kind of person you are?"; "How much did your partner provide you with a source of excitement?"; "How much did you feel you gained a larger perspective on things because of your partner?"; and "How much

did your partner increase your knowledge?" (1 = *not very much* to 7 = *very much*;  $Rc = .91$ ,  $M = 3.07$ ,  $SD = 1.79$ ).

**Daily Passion.** Participants completed a two-item assessment of their passionate love each day (adapted from Hatfield & Sprecher, 1986). Specifically, participants rated their agreement with the items, "Today I experienced powerful attraction to my partner" and "Today I wanted my partner in my life more than anybody else" (1 = *strongly disagree* to 7 = *strongly agree*;  $Rc = .70$ ,  $M = 5.76$ ,  $SD = 1.35$ ).<sup>6</sup> They also completed a one-item abbreviated assessment of the passion subscale of the Perceived Relationship Quality Components Inventory (PRQC; Fletcher et al., 2000; i.e., "How passionate was your relationship?"; 1 = *not at all* to 7 = *extremely*;  $M = 4.99$ ,  $SD = 1.83$ ).<sup>7</sup> We also assessed participants' daily level of sexual desire with one face-valid item (i.e., "I felt a great deal of sexual desire for my partner today"; 1 = *strongly disagree* to 7 = *strongly agree*;  $M = 4.38$ ,  $SD = 1.75$ ), as in previous research (e.g., Muise et al., 2016). Given how closely related these passion and sexual desire assessments are both theoretically and empirically (see Hatfield et al., 2012 for a review), we aggregated these three scales to create a composite measure of passion ( $Rc = .69$ ,  $M = 5.04$ ,  $SD = 1.41$ ).<sup>8</sup>

**Daily Intimacy.** Participants completed a one-item abbreviated assessment of the intimacy subscale of the PRQC (Fletcher et al., 2000; i.e., "How connected were you to your partner?"; 1 = *not at all* to 7 = *extremely*;  $M = 5.94$ ,  $SD = 1.31$ ).<sup>9</sup>

**Daily Positive Emotions.** Participants rated their agreement at the end of each day with three items measuring positive emotions used in previous research (Impett et al., 2010), including whether they felt, "happy, pleased, joyful," "interested, attentive," and "amused, having fun" (1 = *strongly disagree* to 7 = *strongly agree*;  $Rc = .88$ ,  $M = 5.24$ ,  $SD = 1.41$ ).

**Daily Time With Partner.** Participants responded to the question "Approximately how much time did you spend with your partner today?" (1 = *less than 1 hr*; 2 = *1 to 2 hr*; 3 = *2 to 3 hr*;

<sup>3</sup> See Impett et al. (2019) and Muise et al. (2019) for a more detailed discussion of the larger study.

<sup>4</sup> This study and subsequent studies also included assessments of relationship satisfaction. In the interest of brevity, we only present findings for romantic passion and its proxies given that this was our primary construct of interest. However, a similar pattern of results was found across studies for relationship satisfaction.

<sup>5</sup> Due to statistical constraints, the reliability of change coefficients here and across studies account for nesting of multiple responses within individuals (see Bolger & Laurenceau, 2013), but do not account for nesting of individuals within couples. To the best of our knowledge, statistical techniques that account for a two-level crossed design have yet to be developed for reliability of change coefficients.

<sup>6</sup> In previous scale validity analyses (Hendrick & Hendrick, 1989), these two items of the passionate love scale were found to be among the top loading items of the passionate love scale ( $\lambda = .79$  and  $\lambda = .82$ , respectively), which is the most widely accepted measure of romantic passion.

<sup>7</sup> This one item measure of passion similarly loaded highly onto a passion subscale in previous scale validity analyses of this common passion scale ( $\lambda = .75$ ; Fletcher et al., 2000).

<sup>8</sup> We observed the same pattern of results when each assessment was investigated separately. However, the between-person associations of personal self-expansion with the two-item passionate love assessment and the one item sexual desire assessment were only marginally significant when investigated on their own ( $p = .054$  and  $p = .064$ , respectively).

<sup>9</sup> As with the one-item assessment of passion, previous factor analyses found this intimacy item to load highly on the intimacy factor of this established scale ( $\lambda = .84$ ; Fletcher et al., 2000).

**Table 1**  
*Correlations Among Variables in Study 1*

Measures	1	2	3	4	5	6	7	8
1. Daily General Self-Expansion Scale	—							
2. Daily Relational Self-Expansion Scale	.79***	—						
3. Daily passion	.47***	.38***	—					
4. Daily positive emotions	.41***	.41***	.56***	—				
5. Daily intimacy	.37***	.28***	.73***	.51***	—			
6. Daily time with partner	.24***	.13***	.24***	.21***	.24***	—		
7. Background passion	.30***	.24***	.58***	.35***	.42***	.14***	—	
8. Follow-up passion	.30***	.26***	.55***	.35***	.42***	.15***	.68***	—

Note. Correlations ignore nesting.

\*\*\*  $p < .001$ .

4 = 3 to 4 hr; 5 = 4 to 5 hr; 6 = 5 to 6 hr; 7 = 6 to 7 hr; 8 = more than 7 hr;  $M = 5.51$ ,  $SD = 2.30$ ).

**Background and Follow-Up Passion.** To test for longer-lasting associations between personal self-expansion and romantic passion, as well as residualized changes in passion, participants additionally completed the three-item passion subscale of the PRQC (Fletcher et al., 2000) at baseline ( $\alpha = .90$ ,  $M = 4.76$ ,  $SD = 1.48$ ) and approximately 3 months after the daily diary component of the study ( $\alpha = .96$ ,  $M = 4.54$ ,  $SD = 1.74$ ). Specifically, they answered the questions, “How passionate is your relationship?”; “How lustful is your relationship?”; and “How sexually intense is your relationship?” (1 = *not at all* to 7 = *extremely*).

## Results

### Data Analytic Strategy

To examine whether personal self-expansion was associated with higher or lower romantic passion during the daily diary portion of the study, we conducted multilevel modeling. We used mixed models in SPSS to account for the nested nature of the data. Specifically, we treated dyads as indistinguishable, including two redundant dummy codes to represent each couple member as two random intercepts nested within couples in the random statement (Kashy et al., 2008).<sup>10</sup> In the repeated statement we further specified that, for each couple, there was one response for each couple member each day. We specified the residual error structure as compound symmetric for both the random and repeated statements.

The repeated nature of the daily diary allowed us to examine the distinct influence of both within- and between-person effects of personal self-expansion. As such, to determine the within-person effect of daily increases in personal self-expansion on passion beyond an individual’s typical or chronic levels of personal self-expansion, we within-person centered personal self-expansion. To determine the between-person effect of being chronically high in personal self-expansion on passion, we included each person’s average level of personal self-expansion across the 21-days (grand-mean centered) in our model. All of our analyses also control for within-person centered and aggregate levels of relational self-expansion. Finally, to ensure that effects of personal self-expansion are not merely due to increased time apart from a romantic partner and instead due to personal growth outside of the relationship, all of our analyses control for within-person centered and aggregate levels of daily time spent with their romantic partner.

To test our hypothesized mechanisms for the potential associations between personal self-expansion and either higher or lower romantic passion, we conducted multilevel mediation in which we examined both within-person (i.e., a “1–1–1” mediation model with all variables at Level 1) and between-person (i.e., a “2–2–2” mediation model with all variables at Level 2) mediation pathways concurrently (Zhang et al., 2009). Specifically, we tested a simultaneous, dual pathway model in which we included positive emotions and intimacy as simultaneous mediators of both the within- and between-person associations between personal self-expansion and romantic passion. To determine path coefficients and significance levels, we used the same multilevel procedures as the daily passion analysis to account for nesting, as well as included both person-average and within-person centered predictor variables. We estimated 95% confidence intervals (CIs) for the indirect effects using the Monte Carlo Method for Assessing Mediation (MCMAM; Selig & Preacher, 2008) with 20,000 resamples.<sup>11</sup>

### Daily Passion

Results revealed a significant within-person association between personal self-expansion and daily romantic passion (see Table 2). Consistent with the hypothesis that personal self-expansion sparks greater romantic passion, on days when individuals experienced more personal self-expansion than usual, they experienced greater romantic passion for their partner. However, the results also revealed a significant between-person association between personal self-expansion and daily passion in the opposite direction. Consistent with the hypothesis that personal self-expansion leads to lower

<sup>10</sup> Across studies and analyses, we did not find consistent moderation by gender. In all analyses we therefore collapsed across gender and treated dyads as indistinguishable.

<sup>11</sup> Given that methods of multilevel mediation for two-level crossed models, to the best of our knowledge, are still in development and that all slopes were treated as fixed in this model, we felt the MCMAM represented a reasonable proxy for determining confidence intervals of the indirect effect while still being able to treat couples as indistinguishable and collapse across gender. However, this method does not fully account for all multilevel covariances across estimates of the indirect effect. As such, we also conducted additional mediation analyses using the MLMED macro (Rockwood & Hayes, 2017) as an alternative method of analysis. This method fully accounts for the multilevel covariance structure of the a and b pathways, but does not accommodate two-level crossed models, so results are split by gender. See Appendix S.B of the online supplemental materials for this auxiliary analysis.

**Table 2**  
*Passion Analyses in Studies 1, 2, and 3 (Scale)*

Predictor	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>df</i>	<i>p</i>
<b>Study 1</b>						
Personal Self-Expansion Scale (within-person)	.08	.01	[.06, .10]	6.77	3921.95	<.001
Personal Self-Expansion Scale (between-person)	-.23	.10	[-.43, -.04]	-2.33	199.28	.021
Relational Self-Expansion Scale (within-person)	.18	.01	[.16, .21]	13.83	4256.26	<.001
Relational Self-Expansion Scale (between-person)	.61	.10	[.41, .80]	6.20	208.07	<.001
Time together (within-person)	.06	.01	[.05, .08]	8.88	3666.34	<.001
Time together (between-person)	.12	.04	[.03, .21]	2.71	232.25	.007
<b>Study 2</b>						
Personal Self-Expansion Scale (within-person)	.06	.02	[.02, .10]	3.01	2088.17	.003
Personal Self-Expansion Scale (between-person)	-.16	.08	[-.33, .003]	-1.94	141.40	.055
Relational Self-Expansion Scale (within-person)	.43	.02	[.39, .47]	20.92	2025.63	<.001
Relational Self-Expansion Scale (between-person)	.70	.08	[.54, .86]	8.71	128.33	<.001
Time together (between-person)	-.02	.01	[-.04, .01]	-1.35	129.93	.180
<b>Study 3</b>						
Personal Self-Expansion Scale (between-person)	-.10	.05	[-.19, -.003]	-2.02	384.00	.044
Relational Self-Expansion Scale (between-person)	.51	.05	[.42, .61]	10.78	384.00	<.001

romantic passion by causing partners to grow apart, individuals who were chronically high in personal self-expansion across the 21 days experienced lower overall levels of romantic passion for their partner. Thus, although experiencing a temporary increase in personal self-expansion appeared to be associated with enhanced passion, doing so more chronically was associated with reduced passion. In additional analyses in which we controlled for the previous day's passion, we drew identical conclusions for both within- and between-person associations. These results suggest that daily increases in personal self-expansion predict not only greater passion that day, but an increase in passion from the previous day.<sup>12,13</sup>

### Mediation

We next examined the hypothesis that the positive within-person association between personal self-expansion and daily passion might be mediated by either greater positive emotions and/or intimacy. That is, whether the positivity and excitement of personal self-expansion experiences spill over into the relationship and enhance feelings of passion, or whether personal self-expansion allows space for greater intimacy and, in turn, passion. In addition to investigating potential explanations for the positive within-person association, we also sought to examine whether the negative between-person association between personal self-expansion and passion might be mediated by lower intimacy. That is, whether more chronic personal self-expansion leads individuals to grow apart from their partner and, in turn, is associated with lower passion.

First examining the within-person simultaneous mediation model (i.e., the 1-1-1 model), the indirect effect of personal self-expansion on passion through positive emotions was significant ( $b = .037$ ; 95% CI [.030, .044]; see the top panel in Figure 1). Consistent with our hypotheses, on days when participants experienced more personal self-expansion than they typically did, they experienced significantly greater positive emotions,  $b = .22$ ,  $t(4310.69) = 14.47$ ,  $p < .001$ , and positive emotions were, in turn, associated with greater romantic passion,  $b = .17$ ,  $t(4404.23) = 16.12$ ,  $p < .001$ . Examining the alternative, simultaneous mediation pathway through intimacy, this indirect effect was also significant ( $b = .023$ ; 95% CI [.012, .034]). On days when

participants experienced more personal self-expansion than they typically did, they also experienced significantly greater intimacy,  $b = .05$ ,  $t(4171.88) = 3.90$ ,  $p < .001$ , and intimacy was, in turn, associated with significantly greater feelings of romantic passion,  $b = .42$ ,  $t(4464.09) = 37.30$ ,  $p < .001$ . The direct effect of within-person daily increases in personal self-expansion on passion was positive and significant,  $b = .02$ ,  $t(4168.75) = 2.24$ ,  $p = .025$ .

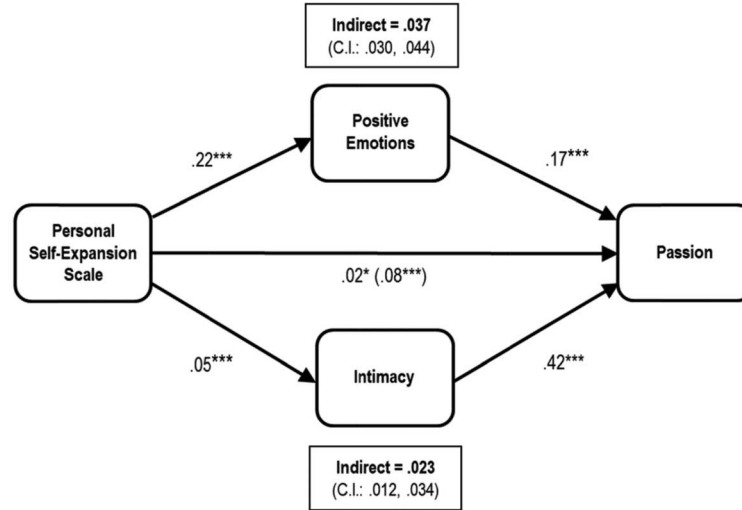
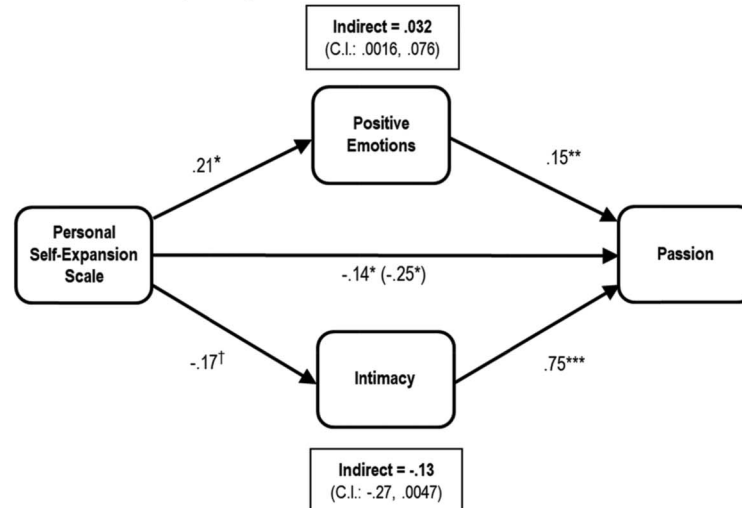
Next examining the between-person mediation model (i.e., the 2-2-2 model), the indirect effect of personal self-expansion on passion through positive emotions was significant ( $b = .032$ ; 95% CI [.0016, .076]; see the bottom panel in Figure 1). However, rather than explaining the negative between-person association of high chronic levels of personal self-expansion and lower passion, this indirect pathway was positive. Individuals chronically high in personal self-expansion experienced significantly greater positive emotions across the 21 days,  $b = .21$ ,  $t(220.73) = 2.13$ ,  $p = .035$ , and these positive emotions were associated with greater feelings of romantic passion for their partner,  $b = .15$ ,  $t(222.43) = 2.94$ ,  $p = .004$ . Examining the alternative, simultaneous mediation pathway through intimacy, the indirect effect was marginally significant ( $b = -.13$ ; 95% CI [-.27, .0047]). Consistent with our hypotheses, participants who were chronically high in personal

<sup>12</sup> Across studies, we did not observe a consistent pattern of moderation by relationship duration, however, our samples were mainly of individuals in established relationships. Although relationship duration did not consistently moderate the associations, there may still be different associations of personal self-expansion in the early stages of relationships that we were not able to capture.

<sup>13</sup> Given that Studies 1 and 2 included a dyadic sample, we were also able to explore possible partner effects of personal self-expansion on passion. Across both studies, we did not observe significant partner effects of personal self-expansion on passion, positive emotions, or intimacy. The only exceptions were in Study 2, where we did observe marginally significant associations between within-person fluctuations in partner's daily personal self-expansion and passion,  $b = .04$ ,  $t(2004.37) = 1.76$ ,  $p = .079$ , as well as intimacy,  $b = .03$ ,  $t(2014.58) = 1.94$ ,  $p = .053$ . Because we did not generally observe partner effects across these two studies, in the interest of preserving resources, we therefore did not choose to collect a dyadic sample in Study 3 and chose to only focus on personal experiences of passion and individual well-being.

**Figure 1**

*Study 1: Simultaneous Multilevel Mediation by Positive Emotions and Intimacy of Both the Within-Person (i.e., the 1-1-1 Model; Top Panel) and Between-Person (i.e., the 2-2-2 Model; Bottom Panel) Effect of Personal Self-Expansion on Romantic Passion*

**WITHIN-PERSON (1-1-1)****BETWEEN-PERSON (2-2-2)**

*Note.* Values in parentheses refer to unstandardized multilevel regression coefficients for the effect of personal self-expansion on passion without controlling for the indirect path. Relational self-expansion and time spent with their partner are controlled for in these analyses. Asterisks indicate statistical significance.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

self-expansion on average experienced marginally lower levels of intimacy in their relationship,  $b = -.17$ ,  $t(204.47) = -1.88$ ,  $p = .061$ , and lower intimacy was associated with lower feelings of passion for their partner,  $b = .75$ ,  $t(235.25) = 13.61$ ,  $p < .001$ . The direct effect of between-person differences in chronic personal self-expansion across the daily diary on passion was negative and significant,  $b = -.14$ ,  $t(208.07) = -2.06$ ,  $p = .040$ .

**Passion at the 3-Month Follow-Up**

Finally, we examined whether the negative association between higher between-person chronic personal self-expansion across the 21-day daily diary study and lower passion extended to longer-term reductions in passion. We again conducted multilevel modeling using mixed models in SPSS to account for individuals being



nested within couples. We regressed passion at the 3-month follow-up on each individual's average personal and relational self-expansion, as well as average time spent with their partner, across the 21-day diary study (grand-mean centered). To assess residualized change in passion, we additionally controlled for baseline passion. Results revealed a nonsignificant association between personal self-expansion and residualized change in passion,  $b = -.01$ ,  $t(184.51) = -.03$ ,  $p = .973$ .<sup>14</sup> Full results of these analyses are shown in Table S.1 in the online supplemental materials.

## Discussion

Study 1 provided an initial examination of the association between personal self-expansion—personal growth not involving a romantic partner—and romantic passion. The daily diary design allowed us to isolate the influences of both within-person daily fluctuations in personal self-expansion, and between-person differences in individuals' average or chronic levels of personal self-expansion. Providing support for the idea that personal self-expansion can both enhance and detract from relational passion, we found within- and between-person associations between personal self-expansion and daily passion to be in the opposite direction of one another. On the one hand, individuals who experienced a within-person increase in daily personal self-expansion reported significantly greater romantic passion for their partner, with significant indirect effects of this association through greater positive emotions and intimacy with their partner that day. On the other hand, individuals who had chronically higher levels of average personal self-expansion across the 21 days reported lower romantic passion for their partner, with a marginally significant indirect effect of this association through lower average intimacy. Although there was a significant between-person indirect effect of chronic personal self-expansion on passion through positive emotions, this indirect effect was positive rather than negative, and therefore did not help to explain the negative association between chronic personal self-expansion and passion. Rather than decreasing positive emotions, which might reduce feelings of passion, higher chronic personal self-expansion was associated with greater positive emotions, which were associated with heightened passion. Thus, Study 1 showed that although a brief increase in personal self-expansion may have benefitted feelings of romantic passion by increasing both positive emotions and intimacy, experiencing personal self-expansion more chronically may have had more deleterious effects for romantic passion as couples may have begun to grow apart. These results also emerged while controlling for the amount of time individuals reported spending with their partner each day, suggesting that the negative association between chronic personal self-expansion and passion was not due to such individuals merely not wanting to or not being able to spend time with their partner, but due to specifically experiencing personal growth that did not involve their romantic partner.

However, we did not observe a significant long-term effect of chronic personal self-expansion on changes in passion 3 months later in a follow-up survey. Thus, although engaging in personal self-expansion more chronically may potentially lead couples to grow apart, this effect may have been temporary and isolated to the period of personal self-expansion in this study.

## Study 2

In our second study, we sought to replicate our findings from Study 1. Study 2 included an online 21-day daily diary component with two follow-up surveys: 1 day immediately following the daily diary study, as well as 3 months later. In addition to reporting on their general levels of personal and relational self-expansion each day using the same assessments as Study 1, participants also answered questions about specific personal and relational self-expansion events that they may have experienced each day. Question prompts for this second personal self-expansion assessment referred to a specific self-expansion event that did not involve their romantic partner. Rather than deriving personal self-expansion from general self-expansion by controlling for relational self-expansion, as was done for daily experiences, the assessment of personal self-expansion events instead directly specified that the events did not involve a romantic partner. This method of assessment had the benefit of providing a more precise and direct measure of personal self-expansion, but as previously mentioned, may have had the drawback of having a slightly negative connotation and/or being perceived as an activity that was not healthy for the relationship. We felt that a multimethod approach across studies, however, would help improve the generalizability of our findings.

In Study 1 we found that experiencing chronically high levels of personal self-expansion across a 21-day period was associated with lower feelings of passion. This finding may suggest that individuals should avoid engaging in chronic personal self-expansion for risk of reducing intimacy and passion in their relationship. However, we were also interested in whether such chronic personal self-expansion was equally deleterious to individual well-being. Recent studies have documented that personal self-expansion is associated with improved self-efficacy and individual well-being (Mattingly & Lewandowski, 2013a, 2013b; Xu et al., 2010), as well as greater positive emotions (Gordon & Baucom, 2009; Gordon & Luo, 2011), as we also observed in Study 1. Thus, in Study 2, we included a daily assessment of individual well-being to explore the possibility that chronic personal self-expansion may simultaneously reduce romantic passion and intimacy but increase individual well-being.

## Method

### Participants

A total of 118 mixed-sex couples were recruited to participate in an online 21-day daily diary study with an initial baseline survey, and a 1-day and 3-month longitudinal follow-up (age:  $M = 31.5$ ,  $SD = 10.4$  years old; race: 55% White/European, 14% African American, 8% Asian, 1% Indian, 5% Latino, 3% Native American, and 14% self-identified as "other"). Participants were recruited through advertisements on the website Craigslist in 12 major U.S. cities. Couples had to be in a romantic relationship, living together, and at least 18 years old to participate (relationship length:  $M = 4.9$ ,  $SD = 5.3$  years; relationship status: 37% married, 19% engaged). Of these initial participants, 107 couples (214 individuals)

<sup>14</sup> Identical conclusions were drawn when baseline passion was not controlled for.

completed the daily diary component of the study. As in Study 1, we aimed to recruit at least 100 couples, but exceeded this goal. At the daily level, there were 3,421 days in the current study.

### Procedure and Materials

As part of a larger study on romantic relationships,<sup>15</sup> following a similar structure as Study 1, participants completed a daily questionnaire at the end of each day for 21 consecutive days. On the day before the first day of the daily diary, participants also completed a background questionnaire. Participants completed two follow-up surveys 1 day after completing the diary study and 3 months later.

Participants completed the same daily scale measures as Study 1 of both their personal self-expansion (adapted from Lewandowski & Aron, 2002;  $R_c = .94$ ,  $M = 3.78$ ,  $SD = 1.89$ ) and relational self-expansion (Muise et al., 2019;  $R_c = .93$ ,  $M = 3.86$ ,  $SD = 1.93$ ). In addition to these scale assessments of personal and relational self-expansion, participants also reported each day whether or not they had experienced a specific personal and/or relational self-expansion event. Due to time constraints, daily passion was assessed with a shorter measure than that used in Study 1 as described below. Participants rated their daily positive emotions with the same measure as Study 1 (Impett et al., 2010;  $R_c = .93$ ,  $M = 5.40$ ,  $SD = 1.44$ ) and relationship intimacy with a slightly longer scale (described below) that encapsulated more varied components of intimacy including mutual disclosure and affection. Time spent with their romantic partner was again assessed as a control but using a free response rather than a scale assessment.

To test for longer-term effects of personal and relational self-expansion on changes in romantic passion, participants reported their romantic passion as they did in Study 1 with the three-item passion subscale of the PRQC (Fletcher et al., 2000) at baseline ( $\alpha = .93$ ,  $M = 5.31$ ,  $SD = 1.39$ ), 1 day after the daily diary component ( $\alpha = .94$ ,  $M = 5.26$ ,  $SD = 1.51$ ), and 3 months after the diary ( $\alpha = .95$ ,  $M = 4.94$ ,  $SD = 1.52$ ). Table 3 depicts correlations among measures.

**Personal Self-Expansion Events.** Participants also reported whether they had experienced a specific *personal self-expansion event* each day by responding to the question “Can you think of something specific that you did WITHOUT YOUR ROMANTIC PARTNER TODAY that resulted in you feeling a sense of excitement, a greater awareness of things around you, an expansion of your sense of self, and/or an increased knowledge of yourself and the world around you?” (0 = *no*; 1 = *yes*;  $M = .34$ ,  $SD = .47$ ). Consistent with Graham (2008), events included topics such as work-related activities, food preparation, and engagement in various entertainment, social, and recreation activities.

**Relational Self-Expansion Events.** Participants also reported whether or not they had experienced a specific *relational self-expansion event* that day by responding to the question “Thinking about your responses to the questions above, can you think of something specific that you did WITH YOUR ROMANTIC PARTNER TODAY that resulted in you feeling a sense of excitement, a greater awareness of things around you, an expansion of your sense of self, and/or an increased knowledge of yourself and the world around you?” (0 = *no*; 1 = *yes*;  $M = .45$ ,  $SD = .50$ ).

**Daily Passion.** Participants completed two face-valid items assessing passion and sexual desire. Specifically, participants rated their agreement with the items “I felt a lot of passion in my relationship today” (Fletcher et al., 2000) and “I felt a great deal of sexual desire for my partner today” (Impett et al., 2008; Muise et al., 2013; 1 = *strongly disagree* to 7 = *strongly agree*;  $R_c = .89$ ,  $M = 5.00$ ,  $SD = 1.77$ ).

**Daily Intimacy.** Participants completed a longer five-item measure of daily relationship intimacy that included items assessing mutual disclosure and affection, in addition to general feelings of closeness. Specifically, participants rated the items “I felt a lot of closeness and intimacy toward my partner today,” “Today, I disclosed my thoughts and emotions to my partner,” “Today, my partner disclosed his/her thoughts and emotions,” “Today, I was affectionate with my partner,” and “Today, my partner was affectionate toward me” (1 = *strongly disagree* to 7 = *strongly agree*;  $R_c = .89$ ,  $M = 4.95$ ,  $SD = 1.64$ ).

**Daily Individual Well-Being.** Participants completed a one-item, face-valid assessment of individual well-being (adapted from Diener et al., 1985). Specifically, they rated their agreement with the statement, “I was satisfied with my life today” (1 = *strongly disagree* to 7 = *strongly agree*;  $M = 5.37$ ,  $SD = 1.54$ ).<sup>16</sup>

**Daily Time With Partner.** Participants reported how many hours they spent with their partner each day by responding to the same question as Study 1, but in this study, participants listed the exact number of hours and minutes rather than selecting a time range according to a scale ( $M = 10.72$ ,  $SD = 9.90$  hr). Unfortunately, changing this question to a free response prompt highly reduced the response rate to this item. In order to not unnecessarily reduce our degrees of freedom for analyses, we included each individual’s average time with their partner across the 21 days in analyses rather than time at the daily level.

## Results

### Daily Passion

Using the same data analytic procedures and replicating Study 1, results revealed a significant within-person association between personal self-expansion and daily romantic passion (see Table 2). Consistent with the hypothesis that personal self-expansion is associated with greater romantic passion, on days when individuals experienced more personal self-expansion than usual, they experienced greater romantic passion for their partner. Also replicating Study 1, the between-person association between personal self-expansion and passion was in the opposite direction, although this effect was only marginally significant. Consistent with the hypothesis that personal self-expansion leads to lower romantic passion, individuals who were chronically high in personal self-expansion across the 21 days experienced marginally lower levels of romantic passion for their partner.

<sup>15</sup> See Muise et al. (2019) for a more detailed discussion of this larger study.

<sup>16</sup> Although only one item, in previous scale validity analysis of the satisfaction with life scale (a common measure of individual well-being; Diener et al., 1985), this item had one the highest factor loadings ( $\lambda = .83$ ), suggesting this item is highly representative of the overall scale in addition to having face validity.

**Table 3**  
Correlations Among Variables in Study 2

Measures	1	2	3	4	5	6	7	8	9	10	11	12
1. Daily General Self-Expansion Scale	—											
2. Daily Relational Self-Expansion Scale	.56***	—										
3. Daily personal self-expansion events	.41***	.10***	—									
4. Daily relational self-expansion events	.15***	.46***	.21***	—								
5. Daily passion	.28***	.56***	.02	.30***	—							
6. Daily positive emotions	.38***	.49***	.12***	.27***	.53***	—						
7. Daily intimacy	.32***	.62***	.03*	.32***	.74***	.49***	—					
8. Daily individual well-being	.38***	.46***	.13***	.25***	.50***	.78***	.46***	—				
9. Daily time with partner	.30***	.44***	-.16***	.14***	.33***	.32***	.39***	.25***	—			
10. Background passion	.12***	.24***	-.03	.05**	.36***	.15***	.28***	.11***	.13**	—		
11. 1-day follow-up passion	.15***	.31***	-.03	.09***	.45***	.18***	.39***	.18***	.35***	.70***	—	
12. 3-month follow-up passion	.18***	.31***	-.06**	.05*	.39***	.15***	.38***	.16***	.29***	.59***	.71***	—

Note. Correlations ignore nesting.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

In additional analyses in which we controlled for the previous day's passion, we drew identical conclusions, consistent with Study 1. Findings again suggest that daily increases in personal self-expansion predict not only greater passion that day, but an increase in passion from the previous day.

We next sought to examine the association between personal self-expansion and passion according to whether participants experienced a specific personal self-expansion event each day rather than according to their general experiences of personal self-expansion as assessed by the personal and relational self-expansion scales. In this and subsequent analyses, we followed the same analytic procedures as were conducted for the scale analyses, but with within-person experiences of personal and self-expansion events effects coded ( $-.5$  = no event reported and  $.5$  = event reported). In contrast to the scale analyses, the within-person association between personal self-expansion events and daily romantic passion was nonsignificant (see Table 4). On days when individuals experienced a personal self-expansion event, they experienced less romantic passion for their partner compared with when they did not, but not significantly so. Consistent with the scale findings, however, results revealed a marginally significant negative between-person association between personal self-expansion events and passion. Individuals who reported more frequent personal self-expansion events across the 21 days experienced marginally lower overall levels of romantic passion for their partner. In additional analyses in which we controlled for the previous day's passion, we drew identical conclusions.

### Mediation

Next, we examined our hypotheses that the positive within-person association between personal self-expansion and passion might be mediated by greater positive emotions and intimacy, and that the negative between-person association between personal self-expansion and passion might be mediated by lower intimacy. To test these hypotheses, we conducted multilevel mediation in which we examined both within-person (i.e., the 1-1-1 model) and between-person (i.e., the 2-2-2 model) mediation pathways concurrently according to the same data analytic procedures as Study 1.<sup>17</sup>

First examining the within-person mediation model (i.e., the 1-1-1 model), the indirect effect of personal self-expansion on

passion through positive emotions was significant,  $b = .039$ ; 95% CI [.029, .050] (see the top panel in Figure 2). Consistent with our hypotheses and Study 1, on days when participants experienced more personal self-expansion than they typically did, they experienced significantly greater positive emotions,  $b = .17$ ,  $t(2099.34) = 9.58$ ,  $p < .001$ , and positive emotions were, in turn, associated with greater romantic passion,  $b = .23$ ,  $t(2121.53) = 11.50$ ,  $p < .001$ . Examining the parallel simultaneous mediation pathway through intimacy, this indirect effect was also significant,  $b = .021$ ; 95% CI [.0028, .040]. On days when participants experienced more personal self-expansion than they typically did, they also experienced significantly greater intimacy,  $b = .04$ ,  $t(2107.81) = 2.28$ ,  $p = .023$ , and intimacy was, in turn, associated with significantly greater feelings of romantic passion for their partner,  $b = .55$ ,  $t(2116.96) = 26.36$ ,  $p < .001$ . The direct effect of within-person daily increases in personal self-expansion on passion was nonsignificant,  $b = -.001$ ,  $t(2108.54) = -.06$ ,  $p = .954$ .

Next examining the between-person mediation model (i.e., the 2-2-2 model), the indirect effect of personal self-expansion on passion through positive emotions was marginally significant,  $b = .039$ ; 95% CI [-.0072, .096] (see the bottom panel in Figure 2). However, consistent with Study 1, rather than explaining the negative, between-person association between chronically high average levels of personal self-expansion and lower passion, this indirect pathway was positive and therefore increased this association. Individuals chronically high in personal self-expansion on average experienced marginally greater positive emotions across the 21 days,  $b = .11$ ,  $t(145.54) = 1.67$ ,  $p = .098$ , and these positive emotions were significantly associated with greater feelings of romantic passion,  $b = .35$ ,  $t(151.59) = 4.23$ ,  $p < .001$ . Examining the parallel simultaneous mediation pathway through intimacy, the indirect effect was negative and significant,  $b = -.091$ ; 95% CI [-.19, -.00063]. Consistent with our hypotheses and Study 1, participants who were chronically high in personal self-expansion on average experienced marginally

<sup>17</sup> We also again include multilevel mediation analyses using the MLMED macro (Rockwood & Hayes, 2017) as an alternative method of analyses in the online supplemental materials.

**Table 4**  
*Passion Analysis in Study 2 (Events)*

Predictor	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>df</i>	<i>p</i>
Personal self-expansion events (within-person)	-.05	.07	[-.18, .08]	-.75	2165.27	.450
Personal self-expansion events (between-person)	-.81	.42	[-1.64, .01]	-1.95	159.89	.053
Relational self-expansion events (within-person)	.91	.06	[.78, 1.03]	14.16	2059.06	<.001
Relational self-expansion events (between-person)	1.10	.44	[.24, 1.96]	2.53	154.30	.012
Time together (between-person)	.01	.01	[-.01, .04]	1.07	120.92	.285

lower levels of intimacy in their relationship,  $b = -.14$ ,  $t(153.01) = -1.92$ ,  $p = .056$ , and this lower intimacy was associated with significantly lower feelings of passion for their partner,  $b = .64$ ,  $t(143.58) = 8.55$ ,  $p < .001$ . The direct effect of between-person differences in chronic personal self-expansion across the daily diary on passion was negative and marginally significant,  $b = -.12$ ,  $t(149.79) = -1.81$ ,  $p = .072$ .

### Daily Individual Well-Being

We next examined effects of personal self-expansion on individual well-being to see whether more chronic personal self-expansion might be associated with greater individual well-being while at the same time being associated with lower intimacy and passion, or whether such chronic personal self-expansion would also be associated with lower individual well-being. Using the same data analytic procedures as daily passion, results revealed a significant, positive within-person association between personal self-expansion and daily individual well-being (see Table 5). On days when individuals experienced more personal self-expansion than usual, they experienced greater individual well-being. Results also revealed a nonsignificant between-person association between personal self-expansion and individual well-being, although this effect trended positively. Individuals with chronically high levels of personal self-expansion across the 21 days experienced greater overall individual well-being, although not significantly.

However, in exploratory multilevel mediation analyses in which we controlled for the significant negative indirect effect of chronic personal self-expansion on individual well-being through lower passion,  $b = -.065$ ; 95% CI [-.14, .0010], the positive association of personal self-expansion with individual well-being became significant,  $b = .19$ ,  $t(150.06) = 2.53$ ,  $p = .013$  (see the bottom panel in Figure 3). This suggests a suppression effect such that chronic personal self-expansion is associated with greater individual well-being, especially after controlling for the association between chronic personal self-expansion and lower passion.

We also examined the association between personal self-expansion events and individual well-being. Consistent with the scale analyses, results revealed a significant within-person association between personal self-expansion events and daily individual well-being (see Table 6). On days when individuals experienced a personal self-expansion event, they experienced greater individual well-being that day compared with when they did not experience an event. The between-person association between experiencing a greater number of personal self-expansion events across the 21 days and individual well-being was nonsignificant, although if anything, was positively associated with individual well-being. Paralleling effects for general personal self-expansion, however, in multilevel mediation analyses in which we controlled

for the negative indirect effect of frequent personal self-expansion events on individual well-being through lower passion,  $b = -.41$ ; 95% CI [-.86, -.0094], the association between personal self-expansion events and individual well-being grew in magnitude,  $b = .40$ ,  $t(133.47) = 1.33$ ,  $p = .186$  (see the bottom panel in Figure 4), although this association was not significant. This again provides some suggestion of a suppression effect such that frequent personal self-expansion events are somewhat positively associated with greater individual well-being, especially after controlling for the association between frequent personal self-expansion events and lower passion.

### Passion at Follow-Up

To again examine whether the negative association between chronically high personal self-expansion across the 21-day daily diary study and lower passion extended to longer-term reductions in passion, we conducted multilevel modeling using the same data analytic procedures as Study 1. Similar to Study 1, results revealed a nonsignificant, but negative effect of personal self-expansion on residualized change in passion both one day after the daily diary,  $b = -.21$ ,  $t(75.70) = -1.25$ ,  $p = .216$ , and 3 months later,  $b = -.22$ ,  $t(71.63) = -1.28$ ,  $p = .206$ . See Tables S.1 and S.2 in the online supplemental materials for the results of the full model.<sup>18</sup>

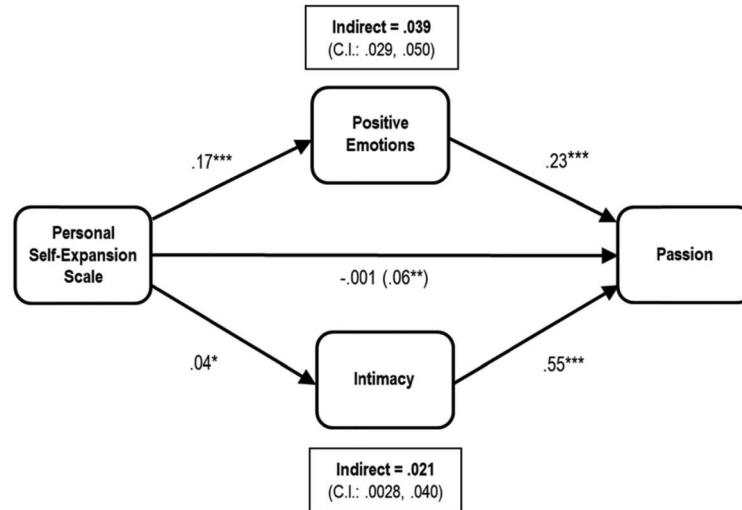
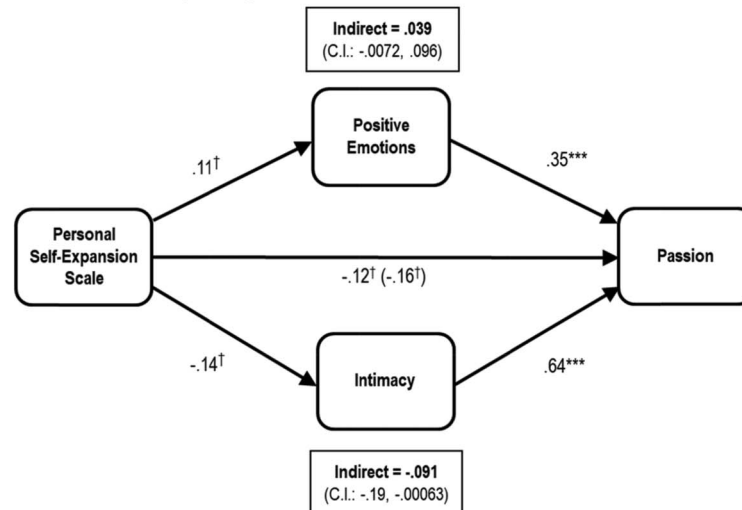
We next examined whether the association between more frequent personal self-expansion events across the 21-day daily diary and lower daily passion extended to longer-term reductions in passion. Experiencing more frequent personal self-expansion events across the 21 days was significantly associated with negative residualized change in passion at both the 1-day,  $b = -1.44$ ,  $t(83.80) = -2.28$ ,  $p = .025$ , and 3-month follow-ups,  $b = -1.58$ ,  $t(80.97) = -2.29$ ,  $p = .025$ .<sup>19</sup> That is, experiencing more frequent personal self-expansion events in the daily diary portion of the study was associated with a significant drop in passion from baseline to immediately after the diary survey, as well as 3 months later. See Tables S.3 and S.4 in the online supplemental materials for results of the full models.

<sup>18</sup> When not controlling for baseline passion, however, the effect of between-person personal self-expansion on passion was negative and significant ( $b = -.47$ ,  $p = .019$  and  $b = -.44$ ,  $p = .027$  at the 1-day and 3-month follow-ups, respectively).

<sup>19</sup> Identical conclusions were drawn when not controlling for baseline passion.

**Figure 2**

Study 2: Simultaneous Multilevel Mediation by Positive Emotions and Intimacy of Both the Within-Person (i.e., the 1-1-1 Model; Top Panel) and Between-Person (i.e., the 2-2-2 Model; Bottom Panel) Effect of Personal Self-Expansion on Romantic Passion

**WITHIN-PERSON (1-1-1)****BETWEEN-PERSON (2-2-2)**

Note. Values in parentheses refer to unstandardized multilevel regression coefficients for the effect of personal self-expansion on passion without controlling for the indirect path. Relational self-expansion and time spent with their partner are controlled for in these analyses. Asterisks indicate statistical significance.

$^\dagger p < .10$ .  $* p < .05$ .  $** p < .01$ .  $*** p < .001$ .

**Discussion**

Study 2 replicated and extended the findings of Study 1. In a direct replication of Study 1, individuals who experienced a within-person increase in daily personal-self-expansion reported significantly greater romantic passion for their partner, with significant indirect effects of this association via greater positive emotions and intimacy with their partner that day. Also consistent

with Study 1 and our predictions, being chronically high in personal self-expansion on average across the 21 days was marginally associated with lower passion for their partner, and there was a significant indirect effect of this association via lower intimacy. Thus, as in Study 1, whereas daily increases in personal self-expansion were associated with greater romantic passion, more chronic personal self-expansion may have reduced passion through

**Table 5**  
*Individual Well-Being Analyses in Studies 2 and 3 (Scale)*

Predictor	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>df</i>	<i>p</i>
Study 2						
Personal Self-Expansion Scale (within-person)	.18	.02	[.15, .22]	10.11	2102.18	<.001
Personal Self-Expansion Scale (between-person)	.12	.08	[−.04, .28]	1.52	145.99	.130
Relational Self-Expansion Scale (within-person)	.26	.02	[.22, .30]	13.83	2018.33	<.001
Relational Self-Expansion Scale (between-person)	.34	.07	[.19, .48]	4.48	132.64	<.001
Time together (between-person)	−.02	.01	[−.04, .01]	−1.40	132.54	.164
Study 3						
Personal Self-Expansion Scale (between-person)	.03	.04	[−.05, .12]	.72	384.00	.471
Relational Self-Expansion Scale (between-person)	.33	.04	[.25, .42]	7.68	384.00	<.001

couples growing apart. We again did not observe a significant long-term effect of chronic personal self-expansion on change in romantic passion at either follow-up.

Study 2 extended Study 1 by examining the associations between specific personal self-expansion events without the romantic partner and passion to provide a multimethod approach to assessing personal self-expansion. These analyses revealed similar findings with two notable exceptions. First, daily fluctuations in personal self-expansion events were not associated with significantly greater passion. However, consistent with daily personal self-expansion scale analyses, reporting more frequent personal self-expansion events across the 21 days was associated with marginally lower passion on average. A second notable difference was that experiencing more frequent personal self-expansion events was associated with significantly reduced romantic passion at the follow-ups, both the day after the daily diary study and 3 months later. This suggests that more frequent specific personal self-expansion events were associated with changes in passion over time, even if more general experiences measured with the personal self-expansion scale were not. Thus, overall the results for personal self-expansion events revealed slightly stronger evidence for a negative between-person effect of personal self-expansion, and slightly weaker evidence for a positive within-person effect of fluctuations in personal self-expansion compared to the personal self-expansion scale. This may have been due to the more precise method of assessment that directly asked about self-expansion experiences that explicitly did not involve the romantic partner. Another possibility is that, as a binary variable, fluctuations in within-person personal self-expansion events may have had reduced variability compared to the scale assessment that assessed the extent of personal self-expansion.

Further extending Study 1, we also examined effects of personal self-expansion on daily individual well-being. Daily increases in personal self-expansion, according to both general experiences and specific events, were associated with greater individual well-being. However, in contrast to the negative association between chronic personal self-expansion and passion, higher chronic levels of personal self-expansion, according to both general experiences and specific events, were not associated with lower individual well-being, and if anything were associated with greater individual well-being after controlling for the negative association with passion.

### Study 3

In our third study, we sought to replicate the between-person effect of more chronic personal self-expansion on lower romantic passion, especially given that this between-person association was only marginally significant in Study 2. Study 3 also employed a sample we thought would be particularly likely to be experiencing chronic personal growth and change and thus enhance our ability to detect effects: individuals who had recently relocated with their romantic partner and who would be likely engaging in a lot of personal growth and change. In addition to further examining the between-person association of high chronic personal self-expansion with lower romantic passion, we also sought to examine and further unpack the association between personal self-expansion and individual well-being. We hypothesized that chronic personal self-expansion may be a double-edged sword for individual well-being, simultaneously detracting from individual well-being by reducing feelings of romantic passion, but improving individual well-being by helping individuals meet their basic psychological needs. In Study 3, in addition to including measures of passion and intimacy, we also included assessments of the degree to which individuals' basic psychological needs of relatedness, competence, and autonomy were being met.<sup>20</sup> In Study 3, continuing with our multimethod approach, we used a more precise assessment of personal self-expansion, explicitly referring only to the time period since their recent move and to self-expanding experiences that did not involve their romantic partner.

### Method

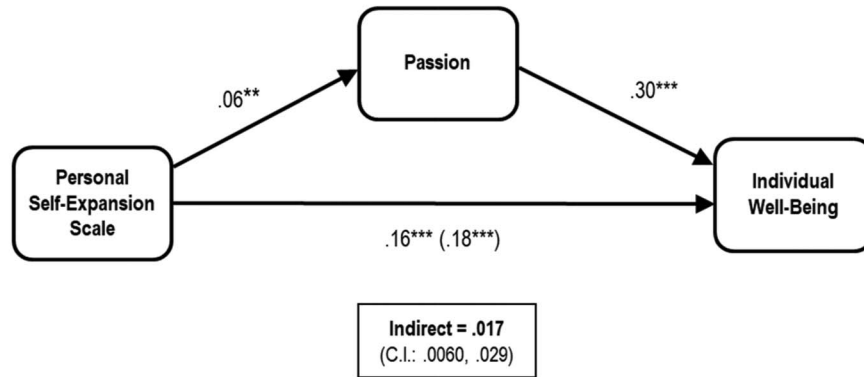
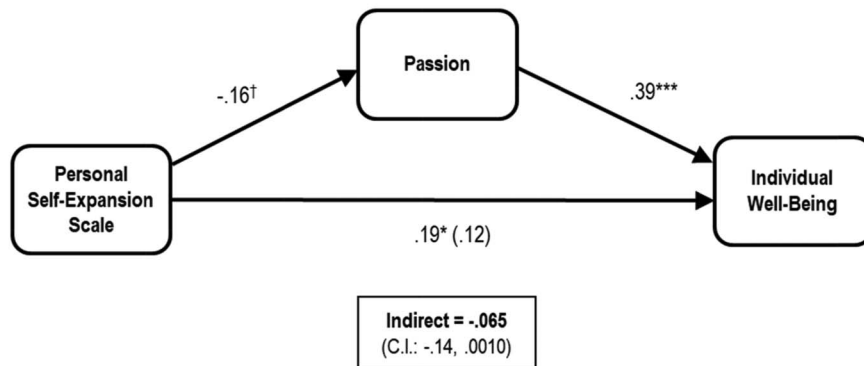
#### Participants

A total of 389 individuals were recruited to participate in an online study on Prolific (gender: 59.38% women, 40.10% men, .51% nonbinary; age:  $M = 32.44$ ,  $SD = 7.75$  years old; race: 74.04% White, 1.80% Black, 2.83% East Asian, 5.14% South Asian, 7.46% Latin American, .77% Native American/First

<sup>20</sup> Given that positive emotions did not help to explain the between-person effects of chronic personal self-expansion with lower levels of romantic passion in either Study 1 or 2, we did not include this measure in this study as it only examined between-person effects.

**Figure 3**

Study 2: Multilevel Mediation by Romantic Passion of Both the Within-Person (i.e., the 1–1–1 Model; Top Panel) and Between-Person (i.e., the 2–2–2 Model; Bottom Panel) Effect of Personal Self-Expansion on Individual Well-Being

**WITHIN-PERSON (1-1-1)****BETWEEN-PERSON (2-2-2)**

Note. Values in parentheses refer to unstandardized multilevel regression coefficients for the effect of personal self-expansion on individual well-being without controlling for the indirect path. Relational self-expansion and time spent with their partner are controlled for in these analyses. Asterisks indicate statistical significance.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Nations, 5.91% bi- or multiethnic/racial, 2.06% other).<sup>21</sup> Participants had to be in a romantic relationship, have relocated for their own or partner's job within the last year, and be at least 18 years old to participate (relationship length:  $M = 8.26$ ,  $SD = 5.35$  years; relationship status: 3.08% dating, 95.12% married, 1.80% other; sexual orientation: 1.03% gay, 1.29% lesbian, 7.97% bisexual, 88.43% heterosexual, 1.29% other).

### Procedure and Materials

As part of an online questionnaire regarding individuals' recent relocation with their partner, participants completed assessments of their level of personal and relational self-expansion since their recent move, as well as current levels of intimacy, passion, and individual well-being. To better understand how chronic levels of personal self-expansion may increase individual well-being, we also

had participants complete measures of psychological need fulfillment since relocating. Table 7 depicts correlations among measures.

**Personal Self-Expansion Scale.** Participants again completed a six-item assessment of how much they had experienced self-expansion, but in this study, the assessment was specific to the

<sup>21</sup> As a part of a larger study on relocation and relationships, we initially aimed to recruit at least 200 individuals who were relocating and 200 individuals who were following their relocating partners for a total target of 400 participants. A total of 389 individuals were successfully recruited and 74 (19%) of these individuals were also able to recruit their romantic partner to participate in this study. This brought the total number of participants to 463 (228 relocators and 235 trailing partners), which exceeded initial targets. Given that only a small percentage of romantic partners were recruited, however, we chose to only examine the initial 389 recruited participants.

**Table 6**  
*Individual Well-Being Analysis in Study 2 (Events)*

Predictor	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>df</i>	<i>p</i>
Personal self-expansion events (within-person)	.29	.06	[.17, .41]	4.83	2144.74	<.001
Personal self-expansion events (between-person)	.05	.35	[-.65, .75]	.15	133.63	.885
Relational self-expansion events (within-person)	.59	.06	[.47, .70]	10.09	2120.26	<.001
Relational self-expansion events (between-person)	.22	.38	[-.53, .97]	.59	143.60	.557
Time together (between-person)	.01	.01	[-.02, .03]	.51	134.00	.612

time period since their relocation, explicitly did not involve their romantic partner, and contained one additional question to more closely align with the relational self-expansion scale (adapted from Lewandowski & Aron, 2002). Specifically, participants answered the questions: “Since your move, how much have things that did not involve your partner result in you having new experiences?”; “Since your move, how much have you felt a greater awareness of things because of things that did not involve your partner?”; “Since your move, how much have things that did not involve your partner expand your sense of the kind of person you are?”; “Since your move, how much have things other than your partner provided you with a source of excitement?”; “Since your move, how much do you feel you have gained a larger perspective on life because of things that did not involve your partner?”; and “Since your move, how much have things that did not involve your partner increase your knowledge?” (1 = *not very much* to 7 = *very much*;  $\alpha = .90$ ,  $M = 4.52$ ,  $SD = 1.37$ ).

**Relational Self-Expansion Scale.** To measure relational self-expansion since moving, the six relational self-expansion items from Studies 1 and 2 were also adapted to be since the move (adapted from Muise et al., 2019). For example, participants were asked: “Since your move, how much has being with your partner expanded your sense of the kind of person you are?” and “Since your move, how much have you felt a greater awareness of things because of your partner?” (1 = *not very much* to 7 = *very much*;  $\alpha = .91$ ,  $M = 5.28$ ,  $SD = 1.38$ ). Supporting our intuitions that this sample may experience atypically high levels of self-expansion, the mean level of relational self-expansion was higher in Study 3 than in Studies 1 and 2 ( $M = 5.28$  compared with  $M = 3.07$  and  $M = 3.86$ , respectively).

**Passion.** Similar to Study 1, participants completed the same one-item abbreviated assessment of the passion subscale of the PRQC (Fletcher et al., 2000; i.e., “How passionate was your relationship?”; 1 = *not at all* to 7 = *extremely*;  $M = 4.94$ ,  $SD = 1.72$ ). We also assessed participants’ level of sexual desire with one face-valid item from the commonly used Hurlbert Index of Sexual Desire (Apt & Hurlbert, 1992; i.e., “My desire for sex with my partner is strong”; 1 = *strongly disagree*, 7 = *strongly agree*;  $M = 5.23$ ,  $SD = 1.62$ ). We again aggregated across these two items to create a composite measure of passion ( $r = .47$ ,  $M = 5.08$ ,  $SD = 1.44$ ).

**Intimacy.** Similar to Study 1, participants completed a one-item abbreviated assessment of the intimacy subscale of the PRQC (Fletcher et al., 2000; i.e., “How close do you and your partner feel?”; 1 = *not at all* to 7 = *extremely*;  $M = 5.84$ ,  $SD = 1.37$ ).<sup>22</sup>

**Individual Well-Being.** To capture multiple facets of individual well-being, in addition to rating their agreement with their current life satisfaction as they did in Study 2 (i.e., “On the whole,

I am satisfied with my life”;  $M = 5.21$ ,  $SD = 1.44$ ), participants also completed assessments of their current health (i.e., “All in all, I experience good health”;  $M = 5.43$ ,  $SD = 1.42$ ), stress level (i.e., “All in all, I experience low stress”;  $M = 3.63$ ,  $SD = 1.67$ ), and self-esteem (i.e., “On the whole, I am satisfied with myself”;  $M = 4.61$ ,  $SD = 1.64$ ) on 7-point scales (1 = *strongly disagree* to 7 = *strongly agree*). These four, face-valid items were then aggregated to create an overall assessment of individual well-being ( $\alpha = .82$ ,  $M = 4.72$ ,  $SD = 1.25$ ).

**Need Fulfillment.** We assessed the three basic psychological needs outlined by SDT (Deci & Ryan, 2000) by having participants complete four-item assessments of the degree to which they had fulfilled their needs of relatedness (e.g., “Feeling loved and cared about”;  $\alpha = .88$ ,  $M = 5.09$ ,  $SD = 1.28$ ), competence (e.g., “Feeling like a competent person”;  $\alpha = .92$ ,  $M = 4.84$ ,  $SD = 1.42$ ), and autonomy (e.g., “Feeling free to be who I am”;  $\alpha = .92$ ,  $M = 4.90$ ,  $SD = 1.40$ ) since the move (1 = *not fulfilled* to 7 = *totally fulfilled*; Chen et al., 2015).

## Results

### Passion

Regressing passion on personal and relational self-expansion since the move, results revealed a significant main effect of personal self-expansion on romantic passion (see Table 2). Consistent with the between-person association of chronic personal self-expansion and romantic passion in Studies 1 and 2, individuals who had experienced higher overall levels of personal self-expansion during the time since the move reported significantly lower levels of passion for their partner.<sup>23</sup>

### Passion Mediation

We next examined whether this negative association might be mediated by lower intimacy, suggesting that chronically higher levels of personal self-expansion may have led individuals to drift apart from their partner. To test this hypothesis, we conducted mediation analysis using Model 4 of the PROCESS macro in SPSS (Hayes, 2017). Specifically, we conducted a mediation analysis in which we examined the direct and indirect pathways of personal self-expansion since relocating on current romantic passion with

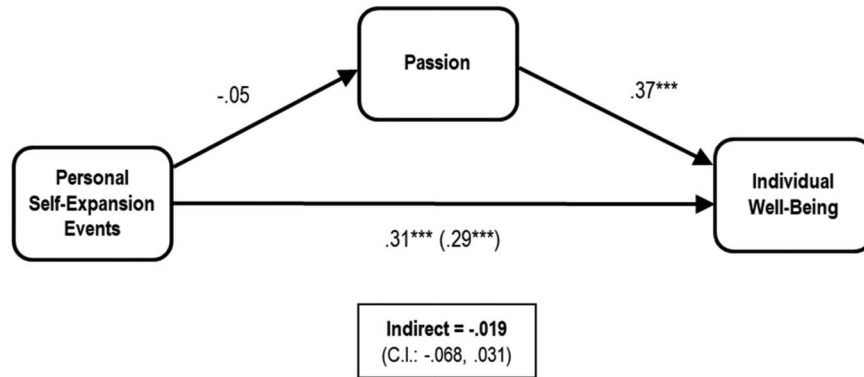
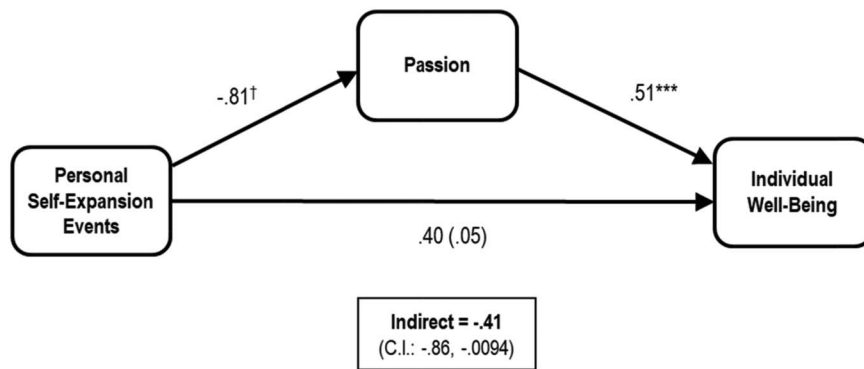
<sup>22</sup> Previous factor analyses found this intimacy item to load highly on the intimacy factor of this established scale ( $\lambda = .71$ ; Fletcher et al., 2000).

<sup>23</sup> The association of personal self-expansion with lower passion remained significant when we controlled for time since the move and whether the participant was the one to relocate or the trailing partner. This association was also not significantly moderated by time since the move or whether the participant was the relocating or trailing partner.



**Figure 4**

Study 2: Multilevel Mediation by Romantic Passion of Both the Within-Person (i.e., the 1–1–1 Model; Top Panel) and Between-Person (i.e., the 2–2–2 Model; Bottom Panel) Effect of Personal Self-Expansion Events on Individual Well-Being

**WITHIN-PERSON (1-1-1)****BETWEEN-PERSON (2-2-2)**

Note. Values in parentheses refer to unstandardized multilevel regression coefficients for the effect of personal self-expansion on individual well-being without controlling for the indirect path. Relational self-expansion events and time spent with their partner are controlled for in these analyses. Asterisks indicate statistical significance.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

current intimacy serving as a potential mediator of the indirect pathway. Relational self-expansion was controlled for in this analysis.

Consistent with our hypothesis and Studies 1 and 2, the indirect effect of personal self-expansion on passion through intimacy was negative and significant,  $b = -.05$ ; 95% CI  $[-.11, -.004]$  (see Figure 5). Participants who reported more personal self-expansion since the move reported significantly lower current levels of intimacy,  $b = -.10$ ,  $t(384) = -2.30$ ,  $p = .022$ , and lower intimacy was associated with significantly lower current feelings of passion for their partner,  $b = .52$ ,  $t(383) = 10.63$ ,  $p < .001$ . The direct effect of higher personal self-expansion since the move on current passion was not significant,  $b = -.04$ ,  $t(383) = -1.05$ ,  $p = .297$ .

**Individual Well-Being**

We next examined the association between personal self-expansion since the move and individual well-being. We therefore

regressed current individual well-being on personal and relational self-expansion since the move. Like Study 2, results revealed a nonsignificant, positive main effect of personal self-expansion (see Table 5). Thus, consistent with Study 2, although chronically high levels of personal self-expansion were associated with lower passion, they were not associated with lower individual well-being, and if anything, personal self-expansion was associated with greater individual well-being (although not significantly).

**Individual Well-Being Mediation**

Next, we aimed to more closely examine the null association between higher chronic levels personal self-expansion and individual well-being, and the possibility that passion and increased need fulfillment may compete in their influence on individual well-being. Given that more chronic personal self-expansion was associated with lower romantic passion, but not lower individual

**Table 7**  
Correlations Among Variables in Study 3

Measures	1	2	3	4	5	6	7	8
1. Personal Self-Expansion Scale	—							
2. Relational Self-Expansion Scale	.20***	—						
3. Passion	.01	.47***	—					
4. Intimacy	.01	.52***	.61***	—				
5. Individual well-being	.11*	.38***	.50***	.44***	—			
6. Relatedness need fulfillment	.10*	.43***	.44***	.45***	.52***	—		
7. Competence need fulfillment	.19***	.28***	.32***	.27***	.53***	.43***	—	
8. Autonomy need fulfillment	.13*	.37***	.30***	.32***	.52***	.48***	.56***	—

\*  $p < .05$ . \*\*\*  $p < .001$ .

well-being, we suggest that personal self-expansion may represent a double-edged sword—simultaneously causing partners to drift apart and reduce feelings of passion in their relationship, but perhaps also enabling them to fulfill important psychological needs.

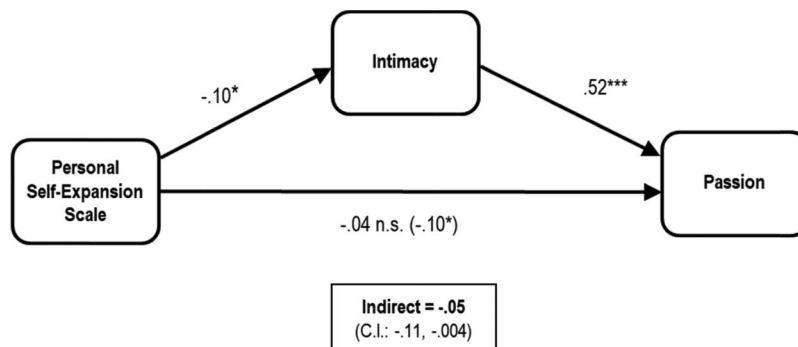
To test these ideas, we conducted mediation analyses testing indirect and direct effects of personal self-expansion on individual well-being again using Model 4 of the PROCESS macro in SPSS (Hayes, 2017), but including passion, relatedness need fulfillment, competence need fulfillment, and autonomy need fulfillment as four simultaneous mediators (see Figure 6). Relational self-expansion was again controlled for in this analysis.

Results revealed a marginal, negative indirect effect of personal self-expansion on individual well-being through passion,  $b = -.02$ ; 95% CI  $[-.05, .0005]$ . Participants who experienced high chronic levels of personal self-expansion experienced significantly lower levels of romantic passion,  $b = -.10$ ,  $t(384) = -2.02$ ,  $p = .044$ , and lower romantic passion was associated with significantly lower individual well-being,  $b = .23$ ,  $t(380) = 5.97$ ,  $p < .001$ . Thus, personal self-expansion appeared to have a negative potential influence on individual well-being through lower romantic passion.

Examining the parallel simultaneous mediation pathways through psychological need fulfillment, only the indirect pathway through competence was significant,  $b = .03$ ; 95% CI  $[.01, .06]$ . Here, personal self-expansion was significantly positively associated with individual well-being through greater fulfillment of competence needs. That is, participants who experienced high levels of personal self-expansion since the move also experienced greater competence need fulfillment,  $b = .15$ ,  $t(384) = 2.90$ ,  $p = .004$ , and greater competence need fulfillment was associated with significantly greater individual well-being,  $b = .20$ ,  $t(380) = 4.90$ ,  $p < .001$ .

In contrast, the indirect pathways through relatedness and autonomy need fulfillment were both nonsignificant,  $b = .003$ , 95% CI  $[-.02, .02]$  and  $b = .01$ , 95% CI  $[-.01, .03]$ , respectively. This was primarily due to personal self-expansion not being significantly associated with either greater relatedness or autonomy need fulfillment,  $b = .02$ ,  $t(384) = .34$ ,  $p = .732$  and  $b = .06$ ,  $t(384) = 1.15$ ,  $p = .251$ , respectively, although both relatedness and autonomy need fulfillment were significantly associated with greater individual well-being,  $b = .19$ ,  $t(380) = 4.06$ ,  $p < .001$ , and  $b = .18$ ,  $t(380) = 4.28$ ,  $p < .001$ , respectively. The direct effect of higher personal self-expansion

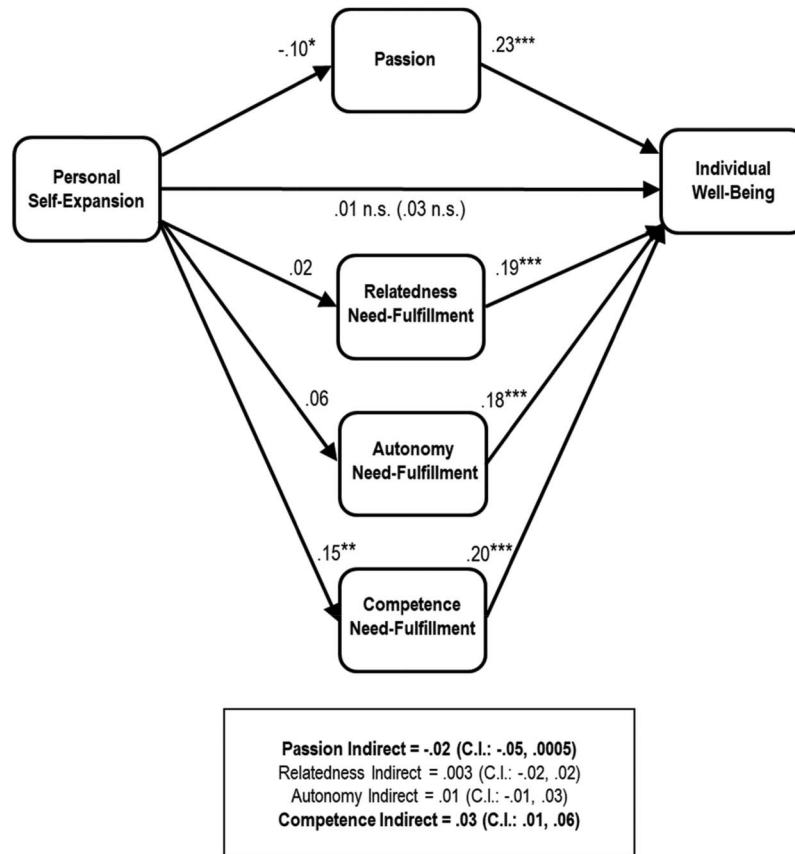
**Figure 5**  
Study 3: Mediation by Intimacy of the Effect of Between-Person Personal Self-Expansion on Romantic Passion



Note. Values in parentheses refer to unstandardized regression coefficients for the effect of personal self-expansion on passion without controlling for the indirect path. Relational self-expansion is controlled for in these analyses. Asterisks indicate statistical significance. †  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Figure 6**

*Study 3: Simultaneous Mediation by Passion, Relatedness Need Fulfillment, Autonomy Need Fulfillment, and Competence Need Fulfillment of the Between-Person Effect of Personal Self-Expansion on Individual Well-Being*



*Note.* Values in parentheses refer to unstandardized regression coefficients for the effect of personal self-expansion on individual well-being without controlling for the indirect path. Relational self-expansion is controlled for in these analyses. Asterisks indicate statistical significance.  $^{\dagger} p < .10$ .  $^* p < .05$ .  $^{**} p < .01$ .  $^{***} p < .001$ .

since the move on individual well-being was not significant,  $b = .01$ ,  $t(380) = .31$ ,  $p = .758$ .

Thus, although the total effect of high chronic levels of personal self-expansion on individual well-being was nonsignificant, this appeared to be due largely to two competing pathways. On the one hand, personal self-expansion was associated with lower feelings of passion, which was associated with lower individual well-being. Also, personal self-expansion was associated with greater feelings of competence, which was associated with greater individual well-being.

## Discussion

In a sample of individuals who we anticipated would be likely to have (and actually did experience) a period of particularly high self-expansion—individuals who had recently relocated with their romantic partner—we again found that higher levels of chronic personal self-expansion were associated with lower passion. There was a significant indirect effect of this association via lower levels

of intimacy suggesting that more chronic personal self-expansion may lead couples to grow apart.

In addition to replicating the between-person results of Studies 1 and 2 for passion, in Study 3, we also replicated the null effect of personal self-expansion on individual well-being. Examining this association in more depth, however, revealed two potentially competing pathways through which personal self-expansion may influence individual well-being. More specifically, while personal self-expansion was associated with lower individual well-being through feeling less romantic passion, at the same time, personal self-expansion was also associated with greater individual well-being by helping to fulfill competence needs, but not autonomy or relatedness needs.

## Meta-Analytic Summary

To get a sense of the overall size and robustness of the between-person association between chronic personal self-expansion and passion, we conducted a meta-analysis across Studies 1, 2, and 3

to assess the robustness of this association using the metafor package in R (Viechtbauer, 2020). To calculate an overall meta-analytic effect, we first calculated standardized effect sizes by creating partial correlation coefficients for the between-person association of chronic personal self-expansion and passion in each study using the `escalc` function in R. To make analyses across studies as parallel as possible, we chose to include only associations for the personal self-expansion scale in Study 2 over associations for personal self-expansion events.<sup>24</sup> The overall meta-analytic association between chronic personal self-expansion and passion was negative and significant,  $\beta = -.12$ ,  $z = -4.21$ ,  $p < .001$ , 95% CI  $[-.18, -.06]$ .

We similarly calculated a meta-analytic effect for the association between chronic personal self-expansion and changes in romantic passion at follow-up in Studies 1 and 2 using the same meta-analytic procedures as for concurrent passion.<sup>25</sup> To again make analyses across these studies as parallel as possible, we chose to include the association of personal self-expansion with residualized change in passion at the 3-month follow-up over the 1-month follow-up in Study 2. The overall meta-analytic association between chronic personal self-expansion according to the scale assessment and change in passion 3 months later was negative, but nonsignificant,  $\beta = -.04$ ,  $z = -.93$ ,  $p = .354$ , 95% CI  $[-.12, .04]$ .

## General Discussion

Romantic passion has become increasingly critical to relationship decisions, relationship quality, and individual well-being (Allgeier & Wiederman, 1991; Amato, 2003; Amato & Hohmann-Marriott, 2007; Carswell & Finkel, 2018; Gigy & Kelly, 1992; Hatfield & Rapson, 2006; Hatfield et al., 2007; Tsapelas et al., 2009), but represents one of the most fragile aspects of relationships, generally declining precipitously over time in relationships (Acker & Davis, 1992; Carswell et al., 2019; Traupmann & Hatfield, 1981; Tucker & Aron, 1993). Across two daily diary studies of romantic couples and one cross-sectional study of individuals who had recently gone through a period of intense self-expansion after relocating, results suggested that, although temporary increases in personal self-expansion were associated with higher levels of this critical element of relationship quality, more chronic personal self-expansion was associated with lower romantic passion. Within-person mediation analyses across studies suggested that the association between daily increases in personal self-expansion and greater passion may be partially due to increased positive emotions and intimacy, which, in turn, help to spark feelings of romantic passion. This is in line with our hypothesis that personal self-expansion may help to increase feelings of romantic passion by allowing for positive emotions associated with this highly rewarding and exciting experience to carry over to the relationship. Likewise, it is in line with our hypothesis that personal self-expansion may help to create space for further increases in intimacy, providing new self-aspects that can be shared and validated by a romantic partner to help fuel feelings of passion. Between-person mediation analyses across studies also suggested that the link between sustained higher levels of personal self-expansion and lower passion may be partially due to lower intimacy—that is, engaging in personal self-expansion more chronically may lead individuals to drift apart from their partners, which

in turn was associated with lower passion. Thus, although temporarily engaging in personal self-expansion may create space for greater intimacy and in turn passion, engaging in personal self-expansion more chronically may create a less easily surmountable divide. In Study 2, we also examined how specific personal self-expansion events are associated with romantic passion. Although within-person differences in experiencing a personal self-expansion event or not were not significantly associated with greater passion, engaging in more frequent personal self-expansion events across the daily diary study was marginally significantly associated with lower romantic passion.

In Studies 1 and 2, we also examined the longer-term consequences of between-person differences in more chronic personal self-expansion by examining changes in passion from the beginning of the study to approximately 3 months later. Although higher sustained levels of daily personal self-expansion were not significantly related to reduced passion 3 months later, individuals who experienced more frequent personal self-expansion events across the daily diary component of the study experienced reductions in their levels of passion 3 months later.

Finally, in Studies 2 and 3, we also examined the association between personal self-expansion and individual well-being. The within-person associations of daily personal self-expansion and personal self-expansion events were significant and positive in Study 2, such that on days when people reported more personal self-expansion than typical, or on days with a personal self-expansion event, people reported greater individual well-being. Importantly, in contrast romantic passion, the associations between chronic personal self-expansion—as well as more frequent personal self-expansion events—and individual well-being were not negative. Although not significant, personal self-expansion was, if anything, positively associated with individual well-being in Studies 2 and 3, especially after controlling for the association between personal self-expansion and lower passion. Mediation analysis in Study 3 suggested that the overall null between-person association between greater sustained levels of personal self-expansion and individual well-being may be due to personal self-expansion representing a double-edged sword for individual well-being: It is associated with both greater fulfillment of competence needs (which is positively associated with individual well-being) and with lower feelings of passion in one's relationship (which is negatively associated with individual well-being).

## Implications

The current research builds on the relatively understudied, though growing body of research examining self-expansion outside of a romantic relationship by examining how personal self-

<sup>24</sup> Given that there currently exists disagreement on the correct method for calculating R-squared values and meta-analytic effects for multilevel data, we calculated between-person effects of chronic personal self-expansion in Study 1 and 2 by calculating the person-level aggregate of personal self-expansion across the 21-day diary and regressing passion across the 21-day diary on this aggregate. Nesting of person within couples was not accounted for in effect size calculations. Because Study 3 did not include a measure of time together, to make effect sizes comparable, time together was also not included in the calculation of effect sizes.

<sup>25</sup> Because time together was included in both Study 1 and 2, we did control for this in calculating partial correlations for each study.

expansion influences relational outcomes as opposed to individual outcomes, as has been the focus of previous work (Gordon & Baucom, 2009; Gordon & Luo, 2011; Mattingly & Lewandowski, 2013a, 2013b; Xu et al., 2010). Replicating previous findings demonstrating associations between personal self-expansion and greater self-efficacy and persistence—which represents the bulk of previous work on personal self-expansion (Mattingly & Lewandowski, 2013a, 2013b)—we found evidence that personal self-expansion was associated with greater fulfillment of competence needs. Fulfillment of competence needs in turn predicted greater individual well-being. Although we had thought that personal self-expansion might be equally likely to help fulfill relatedness and autonomy needs, personal self-expansion appeared to be unrelated to the fulfillment of these needs. The demonstration of a unique pathway through competence need fulfillment helps to elucidate how personal self-expansion might influence individual well-being.

The current studies also provide one of the first examinations of the specific personal self-expansion experiences and events that people experience in their daily lives. Previous work on personal self-expansion has largely examined individual differences in general dispositions or the desire to engage in self-expansion and has not clearly differentiated between self-expansion within and outside of the romantic relationship (Gordon & Baucom, 2009; Gordon & Luo, 2011). By employing daily diary and longitudinal procedures, as well as examining specific personal self-expansion experiences, we could examine not only cross-sectional between-person differences in personal self-expansion, but also longer-term and more short-lived within-person changes in personal self-expansion. This allowed us to identify different directional associations and mechanisms of personal self-expansion with romantic passion that may have been obscured in purely cross-sectional methods or assessments of dispositional preferences. Furthermore, although measures of personal preferences and dispositions that dominate previous examinations of personal self-expansion (e.g., Personal Expansion Questionnaire; Gordon & Luo, 2011), are useful tools, they may not always align with actual behavior and experience. By assessing daily experiences, we attained more proximal assessments of individuals' actual personal self-expansion experiences and events, rather than just their preference for these experiences, as well as isolated effects of self-expansion that specifically occur outside of the relationship from effects of self-expansion through the relationship.

In addition to building on prior work examining outcomes of personal self-expansion for the self and individual well-being (Gordon & Baucom, 2009; Gordon & Luo, 2011; Mattingly & Lewandowski, 2014), our findings also provide the first empirical demonstration of an association between personal self-expansion experiences and relationship outcomes, and the first evidence of associations between personal self-expansion and romantic passion in particular. Although prior work has demonstrated that relational self-expansion is almost universally beneficial to relationship quality (see Aron et al., 2013 for a review), we find that self-expansion is not universally positive for the relationship, and is associated with lower levels of passion when experienced chronically outside of the relationship.

More practically, the present work suggests that there may be tradeoffs involved in engaging in personal growth without or not involving a romantic partner. Although personal self-expansion

may be rewarding and improve feelings of competence, our findings suggest that chronic engagement in personal-self-expansion may have drawbacks for feelings toward a romantic partner that may ultimately negate these benefits. Given that a loss of intimacy appeared to be a potential driver of these negative associations, this work suggests that individuals may benefit from complementing such personal self-expansion experiences with activities that enhance intimacy.

Our third study also examined personal self-expansion in an understudied area of personal growth and change: during relocation. Our findings help to illuminate how experiences of personal growth—a relatively positive experience—during a move with a partner can have potentially negative consequences for romantic passion while at the same time being associated with greater feelings of competence. Given that individuals may be forced to experience personal growth during this period and rather than actively seeking it out, especially in the case of trailing partners, these findings also suggest that personal self-expansion may negatively influence romantic passion regardless of whether such growth is volitional.

### Limitations and Future Directions

Although the current studies are the first in the literature to document associations between personal self-expansion and both lower and greater romantic passion, they also had a number of limitations, including being largely correlational in nature. Although the use of daily diary and longitudinal designs helps to differentiate within-person fluctuations and between-person differences in personal self-expansion, as well as associations with residualized change in romantic passion, the current studies are limited in the extent to which causal conclusions can be drawn. Future studies may help to determine causal links by manipulating personal self-expansion or encouraging individuals to engage in personal self-expansion in intervention studies. Of course, given the negative association between chronic personal self-expansion and romantic passion, there may be ethical concerns for more long-term manipulations or interventions.

It is also notable, however, that the zero-order correlation between personal self-expansion and passion was not significant, but only after accounting for and controlling for relational self-expansion. Therefore, it may be growth outside of the relationship that is not accompanied by growth in the relationship that is particularly likely to lead individuals to drift apart and reduce passion. Identifying ways in which individuals might engage in personal self-expansion outside of the relationship that are particularly likely to lead to relational self-expansion in the relationship may be a promising avenue for future research, especially given the positive association between chronic personal self-expansion and the fulfillment of competence needs. For example, individuals might be encouraged to regularly share and communicate with their partner especially self-expanding experiences they have on their own. By paying attention to and identifying elements of these experiences that might be especially transferable (e.g., by taking photos and video recordings, collecting souvenirs or samples, making an effort to remember key anecdotes or facts from conversations), individuals may also be able to learn to more effectively turn personal self-expansion experiences into ones that can

ultimately also be self-expanding for their partner and more positively influence the relationship.

Another limitation of the current work is that, although we found some suggestive evidence that chronically higher levels of personal self-expansion were associated with lower passion due to lower levels of intimacy or drifting apart, there are many ways in which personal self-expansion might result in lower intimacy. For example, lower intimacy could result from individuals feeling they have outgrown their partner or that experiences outside of their relationship are more exciting than those in their relationship. Likewise, lower intimacy could be the result of having new self-aspects denied or resisted by one's partner, or partners may disagree on whether self-expansion is a positive change and this could lead to increased conflict about these changes. Thus, future research might examine this link more closely. For example, whether personal self-expansion positively or negatively influences romantic passion and overall relationship quality may depend on whether partners support one person's particular form of personal self-expansion. Some people may resist their partner's personal growth for fear that they have to change along with their partner or be left behind (Emery et al., 2018; Fivecoat et al., 2015). People might also be resistant to their partner being absorbed in things that do not involve them, or may feel unwanted or unneeded by their partner's choice to grow outside of the relationship, especially to the degree they believe they should be the source of their partner's self-expansion experiences. Thus, future research might examine whether certain personal self-expansion experiences are easier to accept than others, as well as whether partner support and desire to change along with a partner affect how personal self-expansion influences romantic passion.

Further, although we define personal self-expansion as self-expansion that occurs outside of the relationship, such self-expansion experiences could still be relational in nature. Although we know that these personal self-expansion experiences did not involve their romantic partner, we do not know whether they were experienced alone or with others, which might have implications for how such personal self-expansion is related to romantic passion. Whether personal self-expansion experiences with others detract or enhance romantic passion remains an open question. On the one hand, such experiences, especially brief and less frequent ones, may enhance passion. But on the other hand, these experiences may make a partner seem less exciting by comparison. Thus, future research might delve into whether personal self-expansion with another individual or group of individuals compared to solitary experiences might influence feelings of romantic passion differently.

## Conclusions

Across three studies, short-lived, within-person fluctuations in personal self-expansion experiences were associated with greater romantic passion and individual well-being. However, experiencing chronically high levels of personal self-expansion, although associated with the greater fulfillment of competence needs, was associated with lower levels of romantic passion. Thus, although engaging in personal growth outside the relationship may be a positive and rewarding personal experience, doing so more chronically may be potentially detrimental to feelings of romantic passion.

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