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## **The Ebbs and Flows of Attachment: Within-Person Variation in Attachment Undermine Secure Individuals' Relationship Wellbeing Across Time**

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# The Ebbs and Flows of Attachment: Within-Person Variation in Attachment Undermine Secure Individuals' Relationship Wellbeing Across Time

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Although attachment security is relatively stable over time, individuals do experience significant within-person variation in their attachment security across time. No research to date, however, has assessed the relational consequences of within-person variation (fluctuations) in attachment security toward a *specific* attachment figure. Study 1 ( $N = 409$ ) first examined whether attachment security was associated with individuals' expectations that their current intimate relationship would be stable and consistent over time (vs. inconsistent and unstable). Studies 2 and 3 extended this by examining the prevalence and consequences of actual within-person variation (fluctuations) in relationship-specific attachment security toward an intimate partner in 2 multiwave longitudinal studies that assessed individuals (Study 2,  $N = 324$ ) and couples (Study 3,  $N = 171$  dyads). The results indicate that secure individuals (those low in attachment anxiety or attachment avoidance) expect their current relationship to remain relatively stable and consistent over time (Study 1). However, Studies 2 and 3 demonstrated that most individuals do experience fluctuations in their relationship-specific attachment security. Moreover, greater fluctuations predict declines in relationship satisfaction (Studies 2 and 3) and increases in relationship distress (Study 3) over time, but primarily for secure individuals (those low in baseline attachment anxiety or attachment avoidance). This set of findings highlight the importance of examining within-person fluctuations in attachment security, which are associated with declines in trajectories of relationship wellbeing, particularly for secure individuals who anticipate greater stability in their relationships.

**Keywords:** attachment insecurity, intimate relationships, within-person fluctuations, within-person variation

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Attachment security is one of the most widely studied individual differences given the strong impact it has on relationship processes and wellbeing (Mikulincer & Shaver, 2016). An individual's degree of attachment security develops, and sometimes changes,

across the life span in response to how they have been treated by significant others, beginning with early caregivers, but then extending to close friends and romantic partners (see Scharfe, 2003, for a review). These cumulative experiences generate relatively

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stable, enduring expectations and beliefs (i.e., working models) of what close relationships should be like in adulthood. However, theory (Bowlby, 1973; Collins & Allard, 2001) and research also suggest that attachment security operates as a dynamic system that responds to changes in the interpersonal environment. Indeed, there is a reasonable amount of within-person variation in attachment security across different attachment figures (La Guardia, Ryan, Couchman, & Deci, 2000; Pierce & Lydon, 2001; Sibley & Overall, 2008, 2010) and specific attachment figures, such as peoples' romantic partners (Fraley et al., 2011). No research to date, however, has explored the relational consequences of within-person variation (fluctuations) in attachment security toward a *specific attachment figure* across time. This is a significant gap in our knowledge in light of the fact that romantic partners tend to be peoples' primary caregivers during adulthood (Bowlby, 1973; Hazan & Shaver, 1987; Shaver, Hazan, & Bradshaw, 1988), and the quality of these primary relationships can strongly affect peoples' health and wellbeing (e.g., Dush & Amato, 2005; Holt-Lunstad, Birmingham, & Jones, 2008).

One central tenet of attachment theory is that individuals require consistent and responsive care (Bowlby, 1969). When individuals feel insecure in their relationships, this strongly undermines relationship wellbeing (see a meta-analysis by Hadden, Smith, & Webster, 2014; for a major review, see Mikulincer & Shaver, 2016). Greater within-person variation (fluctuations) in relationship-specific attachment reflect inconsistent evaluations of relationship partners as responsive and available, which should also undermine relationship wellbeing. However, greater fluctuations should have a stronger effect on more secure individuals, who expect dependable and predictable partners (Baldwin et al., 1993; Collins & Read, 1990) and have more stable relationships (Arriaga et al., 2006; Cooper, Totenhagen, McDaniel, & Curran, in press; Feeney, 2016). Thus, we hypothesize that greater within-person variation (fluctuations) in attachment security toward an intimate partner would be associated with declines in relationship wellbeing over time, but that this effect would be particularly pronounced for secure individuals (i.e., those scoring low in attachment anxiety or attachment avoidance), who anticipate greater stability in their current relationship. In the current research, we test these hypotheses by (a) first assessing whether relatively more secure individuals expect greater stability and consistency in their current intimate relationships (Study 1), and (b) then examining the prevalence and relationship consequences of small versus large within-person variations in relationship-specific attachment security toward current intimate partners (Studies 2 and 3).

### Within-Person Stability Versus Fluctuations in Attachment Security

Bowlby (1969, 1973, 1980) theorized that experiences with caregivers across the life span shape the development of working mental models, which affect how individuals regulate their emotions in response to stressful situations or events. Individuals high in *attachment avoidance* have histories of receiving cold and rejecting care and, as a result, they distrust current relationship partners and assume they will be unavailable or undependable in times of need. To prevent further rejection and hurt, highly avoidant individuals typically eschew closeness and intimacy and, instead, prioritize being independent and self-reliant (Bowlby,

1973). In contrast, individuals high in *attachment anxiety* have histories of receiving inconsistent or unpredictable care, which leads them to develop negative self-worth and believe they are not worthy of love. To restore and maintain a sense of felt security, highly anxious individuals become hypervigilant to signs of possible rejection, crave reassurance, and yearn for evidence that they are loved by their partners (Bowlby, 1973). Individuals low in both attachment avoidance and attachment anxiety are *secure*. Secure individuals have received responsive and available care and, accordingly, they develop trusting expectations and positive views of themselves and close others. Secure individuals, who believe that close others will be available and responsive when needed, also are comfortable with dependence and intimacy in their relationships (Bowlby, 1973).

Researchers have traditionally viewed attachment security as being relatively stable over time because individuals' repeated experiences with caregivers from infancy into adulthood typically reinforce and sustain their working models (Fraley & Brumbaugh, 2004). Working models comprise of expectations, beliefs, goals, and memories about what relationships tend to be like and how they typically function (Bowlby, 1973; Collins & Allard, 2001). An individual's level of attachment security, therefore, is often construed as being chronic, automatic, and rather resistant to change (Bowlby, 1980; Collins & Allard, 2001). Consistent with this view, Scharfe (2003; also see Davila & Cobb, 2004) confirmed that attachment orientations do tend to be relatively stable over time. For example, 65% to 80% of adults report having the same global categorical attachment style (orientation) over times ranging from 1 week to 4 years (e.g., Baldwin & Fehr, 1995; Fuller & Fincham, 1995; Kirkpatrick & Hazan, 1994), and some report stability from childhood into adulthood (e.g., Iwaniec & Sneddon, 2001; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Additionally, adult romantic attachment scores show moderately high test-retest reliability over times ranging from 2 weeks to 27 years (e.g., Brennan & Shaver, 1995; Fuller & Fincham, 1995; Hammond & Fletcher, 1991; Klohnen & Bera, 1998; Levy & Davis, 1988; Scharfe & Bartholomew, 1994).

Although the degree of attachment security tends to be relatively stable, the attachment system would be maladaptive if it did not respond to changes in relationships, interpersonal experiences, or situations that occur in the social environment (Fraley & Brumbaugh, 2004; Simpson, Rholes, Campbell, & Wilson, 2003). Supporting this, prior research has investigated changes in global attachment security across major life transitions. Novel interpersonal experiences that occur in chronically stressful situations which strongly contradict existing attachment-related beliefs or expectations about close others (working models) should alter those beliefs/expectations (see Bowlby, 1980; Simpson, Rholes, Campbell, & Wilson, 2003b). Indeed, at least 40% of people experience changes in their global form of attachment security during their lives (Scharfe & Cole, 2006; also see recent evidence by Chopik, Edelstein, & Grimm, 2017). These changes are often in response to major stressors or important life transitions (Davila & Cobb, 2004), such as when infants or adolescents encounter stressful or negative life events (Hamilton, 2000; Waters et al., 2000; Weinfield, Sroufe, & Egeland, 2000), when adults enter or leave important romantic relationships (Feeney & Noller, 1992; Kirkpatrick & Hazan, 1994; Scharfe & Cole, 2006), or when couples encounter stressful life or role changes, such as the transition to

marriage (Crowell, Treboux, & Waters, 2002) or parenthood (Feeney, Alexander, Noller, & Hohaus, 2003; Simpson, Rholes, Campbell, & Wilson, 2003b). Thus, important life stressors and transitions serve as diagnostic situations about close others' availability and responsiveness, which can either increase attachment security (such as when close others are reliably there through tough times) or trigger greater insecurity (such as when close others let their partners down or abandon them).

Changes in the level of attachment security, however, can also occur when routine relationship interactions activate and modify the attachment system. Baldwin and colleagues, for example, found that most people have secure and insecure schemas that become accessible when they are exposed to certain environmental cues (Baldwin & Fehr, 1995; Baldwin, Keelan, Enns, & Koh-Rangarajoo, 1996). For instance, priming individuals to think about past situations when they felt secure, anxious, or avoidant activates corresponding attachment representations at that moment (e.g., Baldwin et al., 1993; Baldwin et al., 1996; Gillath & Shaver, 2007; La Guardia et al., 2000). Although these priming studies do not capture changes in attachment over time, they reveal that the attachment system is flexible to change in response to attachment-relevant events in everyday interpersonal contexts. Supporting this, stressful relationship contexts in which partners fail to provide adequate support increases global attachment anxiety and avoidance over time, but individuals become less avoidant when their partners are responsive and provide higher levels of support (Simpson, Rholes, Campbell, & Wilson, 2003b). In addition, avoidant individuals experience reductions in insecurity when they perceive their partners as more trustworthy, whereas anxious individuals become less insecure when they feel validated by their partners (Arriaga et al., 2014).

Additional work examining multiple assessments of attachment also suggests that people experience significant *within-person variation* (fluctuations) in their attachment security. People often hold different concurrent attachment orientations toward different attachment figures (e.g., La Guardia et al., 2000; also see Baldwin et al., 1996; Cook, 2000), but they are still hierarchically organized within related domains (Overall, Fletcher, & Friesen, 2003; Sibley & Overall, 2008, 2010). In fact, examinations of the degree of attachment security toward different attachment figures across several days indicates that most of the variation exists at the within-person level rather than the between-person level (Pierce & Lydon, 2001; Xu & Shrout, 2013). Furthermore, similar to the work on changes in attachment, Davila, Burge, and Hammen (1997) demonstrated that women who experience significant within-person variation in global attachment across time have more turbulent family histories, are more personally distressed, and have more personality disturbances.

Importantly, more recent work has indicated that many individuals also experience within-person variation (fluctuations) in attachment security toward *specific* attachment figures. For example, individuals experience significant within-person variation in their daily levels of felt security toward specific partners across one week (Haak et al., 2016), as well as relationship-specific attachment security toward romantic partners everyday over 30 days as well as weekly over one year (Fraleley et al., 2011). Furthermore, Hudson and colleagues (2014) examined changes in relationship-specific attachment security five times across one year and found that relationship partners experience coordinated fluctuations in

their relationship-specific attachment across time (Hudson et al., 2014). Taken together, even though global attachment security tends to be fairly stable across time, the attachment system is an adaptive, dynamic one in which individuals experience 'ebbs and flows' in their *relationship-specific* level of attachment security, especially during difficult interactions, events, or life transitions.

### The Impact of Fluctuations in Relationship-Specific Attachment Security on Relationship Wellbeing

Given that intimate partners tend to be peoples' primary source of support, love, and intimacy (Bowlby, 1973; Hazan & Shaver, 1987; Shaver et al., 1988), assessing how fluctuations in *relationship-specific* attachment security impact relationship quality is critical for understanding relationship processes, but also the downstream implications that relationship quality has on health and wellbeing (Dush & Amato, 2005; Holt-Lunstad et al., 2008). So how might within-person variation in *relationship-specific* attachment security affect relationship wellbeing? A central tenet of attachment theory emphasizes that humans crave security and safety, and thus require consistent and responsive care (Bowlby, 1969). Because attachment security reflects the degree to which individuals feel that their attachment figures are responsive and available during times of need (Bowlby, 1973; Mikulincer & Shaver, 2016), it is not surprising that greater attachment security is robustly associated with better relationship wellbeing (see meta-analysis by Hadden et al., 2014; for a major review, see Mikulincer & Shaver, 2016). Greater fluctuations in *relationship-specific* attachment security, however, capture inconsistencies in feeling one's intimate partner is a stable source of support and care. Thus, significant fluctuations in relationship-specific attachment security should interfere with the stable and consistent feelings of relationship security that individuals crave, thereby undermining relationship wellbeing across time.

The relational uncertainty and turbulence model (Knobloch, 2007; Solomon & Knobloch, 2004) explains how changes within a relationship can generate greater uncertainty, culminating in negative outcomes. Although this model primarily focuses on the transitional period from casual dating to serious romantic involvement, it suggests that greater turbulence in the form of more negative emotions and irritations that occur during difficult transition periods escalates doubts and increases feelings of uncertainty about the relationship (Knobloch & Theiss, 2010). This, in turn, produces strong emotional reactions (Afifi & Reichert, 1996; Knobloch & Solomon, 2005), negative appraisals of the partner (Solomon & Knobloch, 2004), and lower relationship quality (Knobloch & Knobloch-Fedders, 2010). Experiences of turbulence (i.e., fluctuations) in an individual's degree of attachment security toward a specific intimate partner should have similar implications for relationship wellbeing, in that larger fluctuations should make it more difficult for individuals to remain confident about their partners' ultimate availability and support, undercutting their relationship wellbeing over time.

Empirical work also suggests that within-person variation or fluctuations in attachment and relationship dynamics can undermine personal and relational wellbeing. La Guardia and colleagues (2000) linked greater within-person variation in attachment security across *different* attachment figures to more detrimental wellbeing outcomes. Although people experience greater security to

ward attachment figures who fulfill their basic psychological needs, those who experience greater within-person variation in their models of others reported poorer wellbeing (La Guardia et al., 2000). This work was the first to highlight that within-person variation in attachment security across different attachment figures is detrimental, perhaps because it represents instability in individuals' views about others' availability and responsiveness. Conceptually related work examining fluctuations in relationship dynamics has also documented that fluctuations in relationship satisfaction, relationship commitment, and perceptions of partners' commitment predict higher probability of relationship dissolution over time (Arriaga, 2001; Arriaga et al., 2006; Knopp et al., 2014), as well as more detrimental personal outcomes, such as more depressive symptoms, greater physiological distress, and lower life satisfaction over time (Whitton et al., 2014; Whitton & Whisman, 2010). This is likely because larger fluctuations trigger doubts or uncertainty about the relationship (Kelley, 1983; Whitton, Rhoades, & Whisman, 2014). However, no studies that we are aware of have investigated the impact that larger fluctuations (i.e., more within-person variation) in attachment security toward a *specific attachment figure* (i.e., relationship-specific attachment security) have on relationship wellbeing.

The extent to which larger fluctuations in *relationship-specific* attachment security undermine relationship wellbeing should, however, also depend on an individual's expectations about the stability of their relationship across time. Prior work has examined individuals' expectations of partners' dependability and predictability in response to stressors. For example, Collins and Read (1990) demonstrated that individuals low in attachment anxiety or attachment avoidance feel that their partners are more predictable and dependable in times of need (see the Trust Scale by Rempel, Holmes, & Zanna, 1985). Similarly, compared with anxious and avoidant individuals (both of whom have more volatile relationship experiences), secure individuals have more positive expectations about relationship partners being available and caring (Baldwin et al., 1993; Rowe & Carnelley, 2003), have more positive and stable relationship experiences and outcomes (Feeney, 2016), and experience fewer fluctuations in relationship satisfaction and quality across time (Arriaga et al., 2006; Cooper et al., in press; Whitton et al., 2014). Thus, we hypothesize that secure individuals (i.e., those who score low in attachment anxiety or attachment avoidance) will expect their relationship to be more stable and consistent across time.

Experiencing larger fluctuations in relationship-specific attachment may, however, challenge both the security and stability expectations that secure individuals have. If so, this should undermine their relationship wellbeing, perhaps even more than the wellbeing of insecure individuals when they experience equally large fluctuations (Arriaga et al., 2006; Cooper et al., in press; Whitton et al., 2014). This would be expected since part of being insecure (i.e., higher in attachment anxiety or avoidance) rests on a foundation of not expecting others to consistently provide desired security. Supporting this general process, McNulty and Karney (2004) demonstrated that when people have more stable and positive expectations about their relationships, but have fewer positive relationship experiences, it reduces their relationship satisfaction over time. Similarly, individuals who have higher relationship standards, but report more relationship problems and conflict, also experience lower satisfaction over time (McNulty,

2016). Thus, we hypothesize that individuals who are secure at the beginning of our studies (i.e., those who score low in baseline relationship-specific attachment anxiety or relationship-specific attachment avoidance), but who experience larger fluctuations in relationship-specific attachment security across time (that violate expectations of stable and secure relationships) should report larger declines in relationship wellbeing.

## The Current Research

To our knowledge, no research has assessed the consequences of within-person variation (fluctuations) in *relationship-specific* attachment security. In the current research, we focused on individuals' current intimate partner, who often serves as the primary attachment figure for most adults (Bowlby, 1973; Hazan & Shaver, 1987; Shaver et al., 1988). Our primary hypothesis was that greater within-person fluctuations in relationship-specific attachment anxiety or attachment avoidance *toward the current partner* would predict lower relationship wellbeing. This effect, however, should be most pronounced for secure individuals (i.e., those who score low in baseline attachment anxiety or attachment avoidance) who anticipate greater stability in their current relationship.

To test these hypotheses, we drew on two existing multiwave longitudinal data sets that assessed relationship-specific attachment security and relationship wellbeing. However, these data sets did not include measures assessing peoples' expectations about relationship stability. Thus, in Study 1, we first tested a key assumption underlying our hypotheses: that secure individuals do, in fact, anticipate greater stability in their relationships. Tapping into a large sample of individuals involved in intimate relationships, Study 1 assessed participants' relationship-specific attachment anxiety and avoidance and how stable/consistent they expected their current relationship would be. Although we were predominately interested in within-person variations in *relationship-specific* attachment security, we also assessed global attachment in Study 1 to rule out any relationship-specific dynamics in regard to individuals' current partner to assess more enduring beliefs about the stability of close relationships in general. We predicted that more securely attached individuals (those scoring low in global as well as relationship-specific attachment anxiety or attachment avoidance) would expect greater relationship stability.

Following this, we drew on existing data sets that involved multiwave longitudinal studies (Studies 2 and 3) that examined individuals and couples (i.e., both partners) involved in intimate relationships. Both studies investigated the degree to which individuals experienced within-person variation in *relationship-specific* attachment anxiety and attachment avoidance and the consequences of larger within-person variation on relationship wellbeing. Examining a sample of individuals involved in sexual relationships, Study 2 assessed participants' relationship-specific attachment anxiety and avoidance and their relationship satisfaction every 4 months for a year. Study 3 aimed to replicate the hypothesized effects in a more committed sample of couples experiencing the transition to parenthood. It assessed relationship-specific attachment anxiety and attachment avoidance, relationship satisfaction, and relationship distress six weeks prior to the birth of each couple's first child, and then every six months for two years. For both studies, we predicted that greater fluctuations in relationship-specific attachment anxiety or attachment avoidance

(i.e., more within-person variation) would predict declines in relationship satisfaction over time, but these declines would be steeper for securely attached individuals (i.e., those scoring low in attachment anxiety or attachment avoidance at the start of each study).

We also control for important alternative explanations in Studies 2 and 3. First, although fluctuations in attachment security reflect shifts in individuals' feelings about whether their partner is responsive and available to their needs, the hypothesized effects might be explained by fluctuations in the personal and interpersonal environment itself (see Arriaga, 2001; Arriaga et al., 2006; McNulty, 2016; McNulty & Karney, 2004). Thus, to adjust for the general turmoil in people's environment, we control for fluctuations in personal and interpersonal situations, including fluctuations in the number of sexual partners across the year (Study 2) and fluctuations in depressive symptoms and negative relationship interactions across 2 years (Study 3). Second, secure individuals who experience fluctuations in attachment security may also have personal and family histories that put them at risk for greater fluctuations (see Davila et al., 1997). Hence, in Study 3, we also explore whether secure individuals who experience greater fluctuations report more depressive symptoms or family histories involving greater distress at the beginning of the study compared with secure individuals who experience relatively fewer fluctuations in attachment security. Finally, the dyadic design of Study 3 also allows us to control for partners' baseline, within-person fluctuations, and within-person trajectories in attachment security to rule out often robust associations between partners' attachment security and individuals' relationship wellbeing (Butzer & Campbell, 2008; Carnelley, Pietromonaco, & Jaffe, 1996; Simpson, 1990) and changes in attachment that can occur between couple members (Hudson et al., 2014; Simpson, Rholes, Campbell, & Wilson, 2003b).

### Study 1

Study 1 was designed to test a key assumption underlying our hypotheses: whether individuals who score low in global and relationship-specific attachment anxiety and avoidance (i.e., secure individuals) do, in fact, expect their current intimate relationships to be more stable and consistent. Participants reported both their global and relationship-specific attachment anxiety and attachment avoidance along with their expectations of stability with regard to their current intimate relationship.

### Method

**Participants and procedure.** Four hundred nine participants (61.1% female, 37.4% male, 1.5% other) were recruited from Amazon's Mechanical Turk (MTurk) and given monetary compensation (\$1.00 USD) to complete the study. The eligibility criteria included living in the United States and having a successful completion rate on MTurk of at least 90%. We sought to recruit approximately 500 individuals, based on a predetermined amount of available funding. Of the initial study sample ( $N = 526$ ), 17 participants were excluded for not correctly answering the questionnaire, and 100 single individuals were excluded because they could not complete the relationship-related questions in this study, leaving 409 partic-

ipants. Approximately 40.9% of participants were between 18 and 30 years old, and 59.1% were over 30 years of age. Participants were involved in long-term relationships ( $M = 8.58$  years,  $SD = 10.15$ ). They described their relationships as married (46.4%), engaged (10.1%), living together (18.4%), dating exclusively (21.9%), dating casually (2.7%) or other (.5%). With regard to racial/ethnic composition, the sample was composed predominately of participants who identified themselves as White/Caucasian (74.8%), but it also had Black/African American (8.6%), Asian (6.8%), Multiracial (3.2%), American Indian/Alaska Native (1%) and Native Hawaiian/Other Pacific Islander (.2%) participants (5.4% of the participants did not provide information about their ethnic/racial identity).

#### Materials.

**Relationship-specific attachment security.** Participants completed the Revised Experiences in Close Relationships Scale (Fraley et al., 2011) with regard to their current partner. Six items assessed attachment avoidance (e.g., "I prefer not to show my partner how I feel deep down,"  $\alpha = .92$ ), and three items assessed attachment anxiety (e.g., "I often worry that my partner does not really care for me,"  $\alpha = .93$ ; 1 = *strongly disagree*, 7 = *strongly agree*).

**Global attachment security.** Participants also completed the Revised Experiences in Close Relationships Scale (Fraley et al., 2011) with regard to close relationships in general. Six items assessed attachment avoidance (e.g., "I prefer not to show others how I feel deep down,"  $\alpha = .89$ ), and three items assessed attachment anxiety (e.g., "I often worry that other people do not really care for me,"  $\alpha = .93$ ; 1 = *strongly disagree*, 7 = *strongly agree*).

**Expectations about relationship stability.** Although a scale to assess expectations about partners' dependability and predictability during times of need or uncertainty about the relationship exists (e.g., the Trust Scale by Rempel et al., 1985; see also Collins & Read, 1990), we sought to assess individuals' forecasted expectations about the stability of their romantic relationships across time. Drawing on core features of attachment theory (Mikulincer & Shaver, 2016; Simpson, 1990), we developed a new scale to assess expectations about consistency and stability regarding relationship quality, feelings of intimacy and love, and support and availability.

Participants completed 12 items that assessed their expectations of how stable and consistent their current relationship would be in the future. They reported on aspects of their current relationship (e.g., "The quality of my current relationship will be relatively stable over time," "My current relationship will probably be unstable and unpredictable at times."), their partner ("My partners' love and care for me will remain stable over time," "My partner will consistently be there for me when I need him/her"), and the self ("My feelings for my partner are likely to go up and down a lot," "I will be consistently there for my partner when he/she needs me"; 1 = *strongly disagree*, 7 = *strongly agree*). Tests for structural validity indicated that one of the items did not have sufficiently high internal validity, and was therefore dropped from the final scale. The final 11 items were all keyed in the same direction and then averaged, with higher values representing greater expectations about relationship stability ( $\alpha = .88$ ). Detailed information about the scale, and evidence for good convergent, discriminant, and incremen-

tal validity of the scale, are available in the Online Supplementary Materials (OSM).

## Results

Table 1 displays descriptive statistics and correlations for the various attachment scores and expectations about relationship stability. We regressed individuals' expectations about relationship stability on their relationship-specific attachment anxiety and relationship-specific attachment avoidance. All predictors were grand-mean centered. To test for possible gender differences, we also modeled the main effect and interaction effects of gender (coded  $-1 =$  women,  $1 =$  men). Gender did not moderate any effects of attachment security on relationship expectations ( $t_s = -.01$  to  $1.73$ ,  $p_s = .87$  to  $.08$ ). As predicted, individuals who scored lower in relationship-specific attachment anxiety ( $B = -.17$ ,  $SE = .03$ ,  $t = -4.87$ ,  $p < .001$ ,  $95\%$  CI =  $-.24$  to  $-.10$ ,  $r = .24$ ) or lower in relationship-specific attachment avoidance ( $B = -.42$ ,  $SE = .04$ ,  $t = -9.94$ ,  $p < .001$ ,  $95\%$  CI =  $-.50$  to  $-.34$ ,  $r = .45$ ) expected their current relationship to be more stable and consistent. An analogous model also revealed that individuals who scored lower in global attachment anxiety ( $B = -.16$ ,  $SE = .03$ ,  $t = -4.85$ ,  $p < .001$ ,  $95\%$  CI =  $-.22$  to  $-.09$ ,  $r = .24$ ) or lower in global attachment avoidance ( $B = -.08$ ,  $SE = .04$ ,  $t = -1.97$ ,  $p = .05$ ,  $95\%$  CI =  $-.16$  to  $.00$ ,  $r = .10$ ) expected their current relationship to be more stable and consistent across time, suggesting that these expectations reflect more ingrained attachment-related expectations.<sup>1</sup>

## Discussion

Study 1 examined whether individuals who were low in attachment anxiety or attachment avoidance expected their relationships to be more stable and consistent over time. As predicted, individuals who scored lower in relationship-specific or global attachment anxiety or avoidance expected their current relationship to be more stable and consistent in the future. Study 2 sought to extend these findings by determining whether greater within-person variation (fluctuations) in level of attachment security has detrimental consequences for individuals who are securely attached, who anticipate greater stability in their relationships.

### Study 2

Extending the findings of Study 1, Study 2 drew on existing data to examine whether the consequences of within-person fluctuations in relationship-specific attachment security are more detrimental for secure individuals. We examined within-person fluctuations in relationship-specific attachment in a sample of individuals involved in sexual relationships, which are likely to undergo periods of relational uncertainty as partners navigate from more casual, non-monogamous relationships to more exclusive, serious romantic involvements (see the relational uncertainty and turbulence model; Knobloch, 2007; Solomon & Knobloch, 2004). Individuals reported their relationship-specific attachment anxiety and avoidance and their relationship satisfaction with their primary sexual partner every four months for an entire year (i.e., four waves of data). We predicted that larger fluctuations in attachment anxiety or attachment avoidance (i.e., more within-person variation) would

predict declines in relationship satisfaction over time, but declines would be steeper for secure individuals (i.e., those who scored low in baseline attachment anxiety or avoidance), who anticipate greater stability in their relationships (as demonstrated in Study 1). We also controlled for fluctuations in the number of sexual partners reported by individuals across the year to discount the possibility that the effects of fluctuations in attachment security were driven by turmoil in individuals' interpersonal environment more generally.

## Method

**Participants and procedure.** Three hundred twenty-four participants (52.2% female) were drawn from a larger study examining relationship dynamics, the Project on Partner Dynamics (POPD). POPD is a longitudinal study that examined men and women involved in heterosexual relationships who were at risk for HIV infection. Participants were recruited from clinics and community locations in East Los Angeles, California. Each participant completed four in-person interviews at 4-month intervals over the course of one year.

At the first assessment wave, participants' ages ranged from 18 to 30 years ( $M = 23.34$ ,  $SD = 3.68$  years). Just over half of them indicated they were involved in an exclusive dating relationship (57.4%, with 18.5% dating causally, 8.6% just friends, 7.7% engaged to be married, 4.6% married, and 3.1% other). The average duration of their sexual relationship was 1.81 years ( $SD = 2.55$  years). With regard to racial/ethnic composition, the sample had roughly equivalent numbers of participants who identified as White, Black, and Hispanic (27.2%, 25.6%, and 28.7%, respectively, with 5.7% multiracial and 12.7% other). Furthermore, at Time 0, 47.7% of participants reported having had sex with only their current partner within the past 4 months (Time 1 = 63.6%, Time 2 = 78.4%, Time 3 = 81.3%), and 84.8% of participants said they were involved in only a sexual relationship with their current partner (Time 1 = 84.2%, Time 2 = 89.4%, Time 3 = 92.2%).

In-person computer-assisted interviews lasting approximately one hour were administered using the Questionnaire Development System (QDS) software program. For sensitive questions, participants were given the option of entering their answers directly into the computer. The initial POPD sample ( $N = 536$ ) was recruited, enrolled, and administered the baseline interview over a 23-month period. Overall sample size was sufficiently large so as to allow for the analysis of both sex differences and ethnic/racial differences in obtained results. Over the course of one year, participants then completed four in-person interviews at 4-month intervals (Time 0-Time 3). At Time 1, Time 2, and Time 3, 436, 377, and 330 individuals were interviewed, respectively, for a retention rate

<sup>1</sup> Although the expectations about relationship stability scale had high internal reliability, the subscales may have unique effects because attachment theory predicts different evaluative models of the self and the other. However, additional analyses found identical effects across all subscales. Greater levels of security on relationship-specific and global attachment anxiety or attachment avoidance predicted more stable expectations about the relationship ( $t_s = -2.17$  to  $-7.04$ ,  $p_s = .03$  to  $< .001$ ), self ( $t_s = -2.21$  to  $-8.73$ ,  $p_s = .027$  to  $< .001$ ), and partner ( $t_s = -4.72$  to  $-8.58$ ,  $p_s < .001$ ), with two exceptions: global attachment avoidance was marginally associated with expectations about the partner,  $t = -1.80$ ,  $p = .073$  and not associated with expectations about general relationship stability,  $t = -1.04$ ,  $p = .30$ .

Table 1  
Means (Standard Deviations) and Correlations of All Measures (Study 1)

Measure	M (SD)	1	2	3	4
1. Relationship-specific attachment anxiety	2.50 (1.63)	—			
2. Relationship-specific attachment avoidance	2.40 (1.32)	.624***	—		
3. Global attachment anxiety	3.17 (1.82)	.585***	.318***	—	
4. Global attachment avoidance	3.19 (1.38)	.163***	.354***	.287***	—
5. Expectations about relationship stability	5.19 (1.12)	-.560***	-.671***	-.286***	-.204***

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

from Time 1 of 81%, 70% and 62%. Participants were compensated \$30, \$35, \$40, and \$45 for the Time 0 through Time 3 interviews, respectively. The Institutional Review Boards of all POPD-associated institutions approved the study protocol and materials.

During each interview, participants provided data on all of the sexual relationships (identified by initials or nickname) they had engaged in during the previous four months, including measures of relationship-specific attachment and relationship satisfaction. One hundred and 21 participants did not provide enough longitudinal data to be included in the current study (see the eligibility criteria below). Given the aims of the study, we selected participants' primary relationship on which they reported at least 2 time points to assess *within-person variation* in attachment security and *changes* in relationship satisfaction over time. Two hundred sixteen participants did not meet this eligibility requirement (i.e., they never reported on the same partner more than once) and were excluded from the analyses, leaving us with 324 participants. Comparing the mean levels of attachment anxiety and attachment avoidance for excluded individuals (calculated by averaging attachment scores reported with respect to all sexual partners) versus retained individuals (calculated by averaging repeated assessments of attachment scores with the primary partner) revealed that the excluded participants were generally lower in attachment anxiety (excluded:  $M = 2.25$ ,  $SD = 1.07$ ; retained:  $M = 2.36$ ,  $SD = 1.22$ ,  $t = 2.09$ ,  $p = .04$ ) and higher in attachment avoidance (excluded:  $M = 3.06$ ,  $SD = 1.34$ ; retained:  $M = 2.30$ ,  $SD = 1.12$ ,  $t = -13.33$ ,  $p < .001$ ) compared with those retained for our analyses.

#### Materials.

**Relationship-specific attachment security.** Participants completed the Revised Experiences in Close Relationships Scale (Fraley et al., 2011) with regard to their primary partner. Six items assessed attachment avoidance (e.g., "I prefer not to show this person how I feel deep down,"  $\alpha = .88$ , calculated at each time

point and then averaged across time points), and three items assessed attachment anxiety (e.g., "I often worry that this person doesn't really care for me,"  $\alpha = .82$ , calculated at each time point and then averaged across time points; 1 = *strongly disagree*, 7 = *strongly agree*).

**Relationship satisfaction.** Participants rated 5 items developed by Rusbult, Martz, and Agnew (1998) that assessed their relationship satisfaction (e.g., "I feel satisfied with our relationship" and "My relationship is close to ideal," 0 = *do not agree at all*, 8 = *completely agree*). The items were averaged to index overall relationship satisfaction ( $\alpha = .94$ , calculated at each time point and then averaged across time points).

**Sexual partners.** Participants also reported on the number of people they had sex with during the last 4 months, and the number of people they are having a sexual relationship with currently.

## Results

Table 2 presents the descriptive statistics for all measures at each assessment wave. Although the mean levels of attachment remained relatively stable across the assessment waves, there was considerable between-person variation at each assessment wave.

**Do individuals experience within-person variation (fluctuations) in relationship-specific attachment security?** To assess within-person variation (fluctuations) in attachment security, we calculated within-person standard deviations in attachment anxiety and attachment avoidance across the year. Individuals experienced considerable within-person variation in both their relationship-specific attachment anxiety ( $M = .71$ ,  $SD = .61$ , range = 0 – 4.24) and relationship-specific attachment avoidance ( $M = .57$ ,  $SD = .48$ , range = 0 – 3.54). Notably, individuals higher in attachment security, compared with those with greater attachment insecurity, tend to have more stable relationships (Arriaga et al., 2006; Cooper et al., in press; Feeney, 2016) that are less susceptible to fluctuations in attachment security (Davila et al., 1997). Thus, we wanted to ensure that indi-

Table 2  
Means (and Standard Deviations) of All Measures at Each Assessment Wave (Study 2)

Measure	Scale range	Data range	Assessment wave			
			Baseline ( $N = 277$ )	4 Months ( $N = 298$ )	8 Months ( $N = 227$ )	12 Months ( $N = 165$ )
Relationship-specific attachment anxiety	1–7	1–7	2.46 (1.45)	2.31 (1.35)	2.35 (1.44)	2.29 (1.53)
Relationship-specific attachment avoidance	1–7	1–7	2.37 (1.38)	2.33 (1.24)	2.23 (1.27)	2.21 (1.12)
Relationship satisfaction	0–8	0–8	5.54 (1.93)	5.53 (1.85)	5.72 (1.95)	5.65 (1.90)
Number of sexual partners in the last 4 months	—	1–14	2.01 (1.51)	1.72 (1.30)	1.44 (1.36)	1.36 (.96)
Number of current sexual partners	—	1–9	1.20 (.54)	1.26 (.83)	1.16 (.53)	1.11 (.40)



viduals experienced attachment fluctuations, regardless of their level of attachment security—for example, that individuals who were relatively more secure at baseline also experience greater fluctuations in attachment security, and that those who are relatively more insecure at baseline also experience fewer fluctuations in attachment security across time. To explore this, we created scatterplots of (a) individuals' baseline relationship-specific attachment anxiety and fluctuations in relationship-specific attachment anxiety, and (b) individuals' baseline relationship-specific attachment avoidance and fluctuations in relationship-specific attachment avoidance. Figure 1 illustrates the scatterplots for attachment anxiety (see Study 2, top left figure) and attachment avoidance (see Study 2, bottom left figure). The scatterplots generally show random scatter, indicating that there was a wide range of within-person fluctuations (range across the *y* axis) across the different levels of attachment security (range across the *x* axis). Indeed, there were individuals low in attachment anxiety or attachment avoidance who experienced greater within-person fluctuations in attachment security along with individuals high in attachment anxiety or attachment avoidance who experienced fewer within-person fluctuations in attachment security.

**Analytic strategy.** To determine whether these fluctuations in attachment security are meaningful, we next used growth curve analyses to test whether changes in relationship satisfaction over time depended on (a) individuals' baseline attachment anxiety ( $M = 2.42$ ,  $SD = 1.43$ ) and subsequent fluctuations in their attachment anxiety, or (b) individuals' baseline attachment avoidance ( $M = 2.31$ ,  $SD = 1.30$ ) and subsequent fluctuations in their attachment avoidance.<sup>2</sup> We ran separate models for attachment anxiety and attachment avoidance, controlling for the opposite attachment orientation in each model (see more specific information below). In this section, we provide details about the analytic strategy we used based on the first model, which was conducted for attachment anxiety. Following this, we present the results of an analogous model for attachment avoidance.

Following Kenny, Kashy, and Cook's (2006) methods for analyzing repeated-measures over time data, we ran a growth curve analysis using the MIXED procedure in SPSS 24. Growth curve analyses utilize multiple assessments to (a) model time as a random effect, (b) examine naturalistic linear changes in relationship satisfaction over 1 year (rather than assuming that changes occur in small and equivalent increments across the assessments), and (c) provide specific information about the nature of change (i.e., whether there are increases, decreases, or maintenance of relationship satisfaction over time) and the differences in trajectories and end-points for participants who experience low versus high fluctuations in attachment security.<sup>3</sup> Furthermore, Restricted Maximum Likelihood (REML), the default estimation technique when using the MIXED procedure in SPSS, accounts for missing data without excluding participants who completed only 2 or 3 time points by weighting the extent to which the effect for each participant contributes to the total effect, given the reliability of the slope (i.e., the number of measurements; see Kenny et al., 2006).

The multiple ratings of relationship satisfaction were modeled as a function of an intercept and a slope representing time. Time was coded as 0 = initial wave of assessment through to 3 = 12-month follow-up. Thus, the intercept represents relationship satisfaction at baseline, and the slope for time represents change in relationship satisfaction across the year. Individuals' baseline relationship-specific attachment anxiety, fluctuations in relationship-specific attachment anxiety, and the interaction between baseline relationship-specific attachment anxiety and fluctuations in relationship-specific attach-

ment anxiety were entered as predictors of the intercept (level of relationship satisfaction) and the effect of time (change in relationship satisfaction across time). Our primary prediction was tested by whether individuals' baseline attachment anxiety and fluctuations in attachment anxiety interact to predict changes in relationship satisfaction (Time  $\times$  Baseline Attachment Anxiety  $\times$  Fluctuations in Attachment Anxiety).

One concern when modeling within-person fluctuations in attachment security across time is that secure individuals (who score low in attachment anxiety or low in attachment avoidance) might be more likely to report increases in attachment insecurity over time. This is because secure individuals have more room to shift toward insecurity, whereas insecure individuals, who score closer to the midpoint of their scales, might move more easily in either upward or downward directions. To account for this, we followed recommendations by Raudenbush and Bryk (2002) and extracted each individual's empirical Bayes time slope for relationship-specific attachment anxiety—that is, individuals' within-person trajectories in attachment anxiety (and similarly for attachment avoidance).<sup>4</sup> Following this, we in-

<sup>2</sup> Baseline attachment in Study 2 refers to each individual's first assessment of relationship-specific attachment with a sexual partner. For the majority of participants ( $N = 277$ ), baseline attachment was assessed at Time 0, but some participants entered into new relationships at Time 1 ( $N = 35$ ) or Time 2 ( $N = 12$ ).

<sup>3</sup> We also tested for curvilinear effects, which might reveal how quickly fluctuations in relationship-specific attachment impacts relationship wellbeing across time. Specifically, we reran all the original analyses in Studies 2 and 3 including the curvilinear effect of time (Time<sup>2</sup> = Time  $\times$  Time) and all high-order interactions. Only 3 of the 6 models revealed a significant curvilinear effect. In Study 2, both the effects of attachment anxiety ( $B = -.09$ ,  $SE = .04$ ,  $t = -2.21$ ,  $p = .028$ ) and attachment avoidance ( $B = -.11$ ,  $SE = .06$ ,  $t = -1.88$ ,  $p = .061$ ) predicted curvilinear changes in relationship satisfaction across time. In Study 3, only attachment anxiety predicted marginal curvilinear changes in relationship satisfaction across time ( $B = .001$ ,  $SE = .003$ ,  $t = 1.80$ ,  $p = .072$ ). The other effects of attachment anxiety on distress ( $B = -.000$ ,  $SE = .002$ ,  $t = -.15$ ,  $p = .88$ ) and attachment avoidance on relationship satisfaction ( $B = -.005$ ,  $SE = .005$ ,  $t = -1.05$ ,  $p = .29$ ) and distress ( $B = .001$ ,  $SE = .003$ ,  $t = .38$ ,  $p = .70$ ) were nonsignificant. Plotting the significant curvilinear effects did not indicate dramatic differences in relation to the linear models, so we do not report the curvilinear models here. However, additional figures are provided in the OSM.

<sup>4</sup> To extract within-person trajectories in attachment anxiety and attachment avoidance, we used HLM 7 and ran two separate models: (a) time  $\rightarrow$  attachment anxiety and (b) time  $\rightarrow$  attachment avoidance. Importantly, running a 2-level HLM model allowed us to most appropriately extract within-person trajectories in attachment security given the dependence in the data (i.e., repeated assessments nested within individuals). For both of the attachment anxiety and attachment avoidance models, we allowed the intercept and slopes of time to vary. Next, following recommendations by Raudenbush and Bryk (2002), we saved the level-2 residual file for each model, which allowed us to extract each individual's empirical Bayes time slope, giving us each individual's trajectory for attachment anxiety and attachment avoidance over time. Importantly, empirical Bayes estimates have the advantage of providing more stable estimates when the number of individuals is large and the number of within-person assessments are small or moderate (see Raudenbush & Bryk, 2002, for a more detailed discussion). These level-2 residuals reflect between-person differences from the overall slope effect, so we added the fixed effect of the time slope to each individual's score to estimate an overall slope effect for each individual. These values were grand-mean centered and added to our models to control for individuals' within-person trajectories in attachment anxiety and avoidance. We used the same analytic method in Study 3 to extract each individual's trajectory of attachment anxiety and attachment avoidance across time, with one key difference: We ran a 3-level HLM model to account for the dependence between each *dyad's* attachment trajectories across time (i.e., repeated assessments nested within individuals, nested within couples).

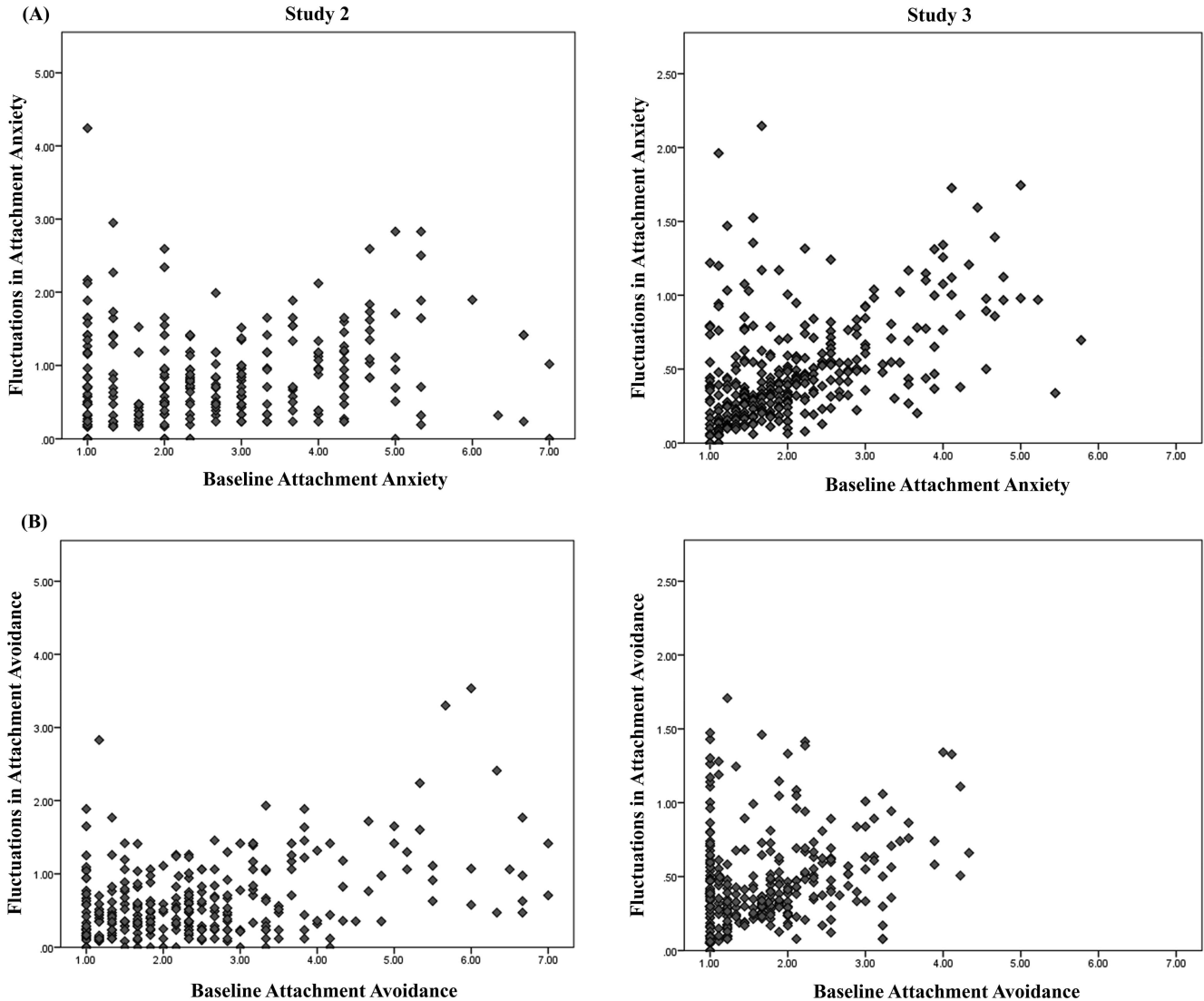


Figure 1. Scatterplots of (A) individuals' baseline relationship-specific attachment anxiety and fluctuations in relationship-specific attachment anxiety (top row), and (B) individuals' baseline relationship-specific attachment avoidance and fluctuations in relationship-specific attachment avoidance (bottom row) in Studies 2 and 3.

cluded individuals' within-person trajectories in relationship-specific attachment anxiety to control for any overall linear changes in attachment anxiety across time, thereby ruling out the possibility that declines in relationship wellbeing might be driven by secure individuals becoming more insecure over time.

We also wanted to explore this issue further. Thus, we examined scatterplots of (a) baseline attachment security by within-person trajectories of attachment security to explore whether relatively more secure individuals have more positive trajectories in attachment over time, and (b) within-person trajectories by within-person fluctuations in attachment security to explore whether within-person fluctuations also capture relatively flat trajectories in attachment (i.e., symmetrical ups and downs) and not just linear trajectories. These scatterplots (which are available in the OSM along with more detailed

information) reveal that, although individuals who were relatively more secure at baseline (i.e., those low in attachment anxiety or attachment avoidance) did, in fact, experience increases in attachment insecurity over time, many secure individuals also experienced little change in their attachment security over time. This supports the notion that within-person fluctuations reflect not only average linear trajectories, but also symmetrical increases and decreases (ups and downs) in attachment security, which result in little or no directional change overall. Thus, the conceptualization and impact of within-person fluctuations in attachment security across time are unique and distinct from directional changes in attachment security across time.

Finally, we modeled the intercept and time as random effects, which allowed individuals to have different starting points on relationship satisfaction and allowed the trajectory of relationship

satisfaction to vary across individuals. We also permitted these random effects to covary using an unstructured error structure. All continuous predictors in the model were grand-mean centered prior to running the analyses. Furthermore, to account for the shared variance with attachment avoidance and to statistically adjust for greater attachment avoidance, we also included individuals' baseline relationship-specific attachment avoidance and fluctuations in relationship-specific attachment avoidance as predictors of the intercept and the effect of time, as well as within-person trajectories in relationship-specific attachment avoidance. Due to space restrictions, we do not report the results of these control variables in the tables. Lastly, to test for possible gender differences, we also modeled the main effect and interaction effects of gender (coded  $-1 =$  women,  $1 =$  men). We discuss one relevant gender difference below.<sup>5</sup>

**Do fluctuations in attachment anxiety predict changes in relationship satisfaction?** The results are displayed in the top section of Table 3. A significant 3-way interaction between Time  $\times$  Baseline Attachment Anxiety  $\times$  Fluctuations in Attachment Anxiety emerged (see Figure 2). We plotted the predicted values of relationship satisfaction at baseline (Time 0) and 12 months later (Time 3) for individuals who experienced low fluctuations ( $-1$  SD, solid line) versus high fluctuations ( $+1$  SD, dashed line) in attachment anxiety, and separately for individuals low ( $-1$  SD) versus high ( $+1$  SD) in baseline attachment anxiety. To evaluate each slope, we also calculated the simple effects for individuals who were low versus high in baseline attachment and low versus high in fluctuations in attachment (see Table 4) and associated differences at the end of the study (see Table 5).

Panel A in Figure 2 shows this interaction for individuals who had low ( $-1$  SD) baseline attachment anxiety. Individuals low in baseline attachment anxiety who experienced *fewer* ( $-1$  SD) fluctuations in attachment anxiety maintained their relationship satisfaction over time (see top left section of Table 4, Low Attachment Anxiety—Low Fluctuations). In contrast, individuals low in baseline attachment anxiety who experienced *greater* ( $+1$  SD) fluctuations in attachment anxiety reported clear declines in relationship satisfaction over time (see top left section in Table 4, Low Attachment Anxiety—High Fluctuations) and much lower relationship satisfaction a year later than did their more stable counterparts (see first column in Table 5, Low Attachment Anxiety Slope—Low vs. High Fluctuations). Notably, individuals low in baseline attachment anxiety who experienced greater fluctuations in attachment anxiety were not different in their relationship satisfaction at the end of the study compared with their insecure counterparts (see fourth column in Table 5, High Fluctuations Slope—Low vs. High Attachment Anxiety).

Panel B in Figure 2 shows this interaction for individuals who had high ( $+1$  SD) baseline attachment anxiety. Individuals high in attachment anxiety maintained low levels of relationship satisfaction over time, regardless of whether they experienced fewer ( $-1$  SD; see top right section of Table 4, High Attachment Anxiety—Low Fluctuations) or greater ( $+1$  SD, see top right section of Table 4, High Attachment Anxiety—High Fluctuations) fluctuations in attachment anxiety. There were no differences in relationship satisfaction experienced a year later (see second column in Table 5, High Attachment Anxiety Slope—Low vs. High Fluctuations).

### Do fluctuations in attachment avoidance predict changes in relationship satisfaction?

Next, we ran an analogous model for attachment avoidance. The results are displayed in the bottom section of Table 3. A significant 3-way interaction between Time  $\times$  Baseline Attachment Avoidance  $\times$  Fluctuations in Attachment Avoidance was found. Notably, this interaction was qualified by a gender difference ( $B = -.17$ ,  $t = -2.68$ ,  $p = .008$ ), which revealed a stronger effect for women ( $B = .61$ ,  $t = 6.26$ ,  $p < .001$ ) than men ( $B = .34$ ,  $t = 4.09$ ,  $p < .001$ ). However, the pattern of effects for men and women were virtually identical, so we present the pooled effect across gender in Figure 3.<sup>6</sup>

Panel A of Figure 3 displays this interaction for individuals who were low ( $-1$  SD) in baseline attachment avoidance. Individuals low in baseline attachment avoidance who experienced *fewer* ( $-1$  SD) fluctuations in attachment avoidance maintained their relationship satisfaction over time (see bottom left section of Table 4, Low Attachment Avoidance—Low Fluctuations). In contrast, individuals low in baseline attachment avoidance who experienced *greater* ( $+1$  SD) fluctuations in attachment avoidance experienced clear declines in relationship satisfaction (see bottom left section of Table 4, Low Attachment Avoidance—High Fluctuations). They also experienced much lower relationship satisfaction a year later compared with their more stable counterparts (see first column in Table 5, Low Attachment Avoidance Slope—Low vs. High Fluctuations). Notably, individuals low in baseline attachment avoidance who experienced greater fluctuations in attachment avoidance were not different in their relationship satisfaction at the end of the study compared with their insecure counterparts (see fourth column in Table 5, High Fluctuations Slope—Low vs. High Attachment Avoidance).

Panel B of Figure 3 shows this interaction for individuals who had high ( $+1$  SD) baseline attachment avoidance. Individuals high in attachment avoidance maintained their low levels of relationship satisfaction over time, regardless of whether they experienced fewer ( $-1$  SD, see bottom right section of Table 4, High Attachment Avoidance—Low Fluctuations) or greater ( $+1$  SD, see bottom right section of Table 4, High Attachment Avoidance—High Fluctuations) fluctuations in attachment avoidance. There were no differences in relationship satisfaction experienced a year later (see second column of Table 5, High Attachment Avoidance Slope—Low vs. High Fluctuations).

**Alternative explanation.** We wanted to ensure that the effects of fluctuations in attachment security were not driven by turbulent personal and interpersonal environments that also undermine relationship wellbeing (see Arriaga, 2001; Arriaga et al., 2006; McNulty, 2016; McNulty & Karney, 2004). Given the variables available to us in this dataset, we controlled for fluctuations in the number of sexual partners that individuals reported. Although

<sup>5</sup> There were no gender differences in the effects reported for attachment anxiety ( $t_s < 1.51$ ,  $p_s > .13$ ) or attachment avoidance ( $t_s < 1.65$ ,  $p_s > .10$ ) in Table 3, with one exception that is discussed in text with regard to the attachment avoidance effects.

<sup>6</sup> We also reran our models (without the main and interaction effects of gender), separately for men and women. The effects for men and women were virtually identical. In particular, the predicted effect (see Figure 3) that individuals low in initial avoidance who experience greater fluctuations in attachment avoidance experienced declines in relationship satisfaction over time was stronger for women ( $slope = -.86$ ,  $t = -6.72$ ,  $p < .001$ ) than men ( $slope = -.72$ ,  $t = -3.68$ ,  $p < .001$ ).

Table 3

*The Effects of Baseline Relationship-Specific (RS) Attachment and Fluctuations in Relationship-Specific Attachment on Relationship Satisfaction Across Time (Study 2)*

	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI		<i>r</i>
				Low	High	
<b>Attachment anxiety</b>						
Intercept	5.69	.10	56.09***	5.49	5.89	.96
Baseline RS-attachment anxiety	-.16	.08	-2.02*	-.31	-.00	.11
Fluctuations in RS-attachment anxiety	.17	.17	1.03	-.16	.50	.06
Baseline RS-attachment anxiety × Fluctuations in RS-attachment anxiety	-.14	.11	-1.35	-.35	.07	.08
Time	-.11	.05	-2.30*	-.21	-.02	.15
Time × Baseline RS-attachment anxiety	.04	.03	1.16	-.03	.11	.08
Time × Fluctuations in RS-attachment anxiety	-.20	.08	-2.46*	-.36	-.04	.15
Time × Baseline RS-attachment anxiety × Fluctuations in RS-attachment anxiety	<b>.14</b>	<b>.05</b>	<b>2.94**</b>	<b>.05</b>	<b>.23</b>	<b>.18</b>
Trajectory over time for RS-attachment anxiety	-1.22	1.12	-1.09	-3.42	.99	.07
<b>Attachment avoidance</b>						
Intercept	5.67	.10	56.98***	5.47	5.86	.96
Baseline RS-attachment avoidance	-.75	.11	-6.86***	-.97	-.54	.35
Fluctuations in RS-attachment avoidance	-.27	.23	-1.17	-.72	.18	.07
Baseline RS-attachment avoidance × Fluctuations in RS-attachment avoidance	-.10	.11	-.88	-.32	.12	.05
Time	-.19	.05	-4.07***	-.28	-.10	.26
Time × Baseline RS-attachment avoidance	.11	.04	2.73**	.03	.20	.17
Time × Fluctuations in RS-attachment avoidance	-.38	.12	-3.21**	-.61	-.15	.18
Time × Baseline RS-attachment avoidance × Fluctuations in RS-attachment avoidance	<b>.46</b>	<b>.06</b>	<b>7.36***</b>	<b>.34</b>	<b>.59</b>	<b>.36</b>
Trajectory over time for RS-attachment avoidance	-2.34	1.29	-1.82	-4.87	.19	.11

*Note.* Predicted significant interaction effects are in bold. To account for the shared variance between attachment anxiety and attachment avoidance, each model controls for the within-person trajectory over time for the alternative attachment orientation. Baseline attachment and fluctuations in attachment were also entered as predictors of the intercept and the effect of time for the alternative attachment orientation. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula:  $r = \sqrt{(t^2 / t^2 + df)}$ . CI = confidence interval.

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

relationship exclusivity increased over time, there was still some within-person variation in the number of sexual partners individuals had both within the past 4 months ( $M = .51$ ,  $SD = .69$ ,  $Range = 0 - 4.95$ ) as well as their number of current sexual partners ( $M = .19$ ,  $SD = .46$ ,  $Range = 0 - 3.54$ ). We reran our original analyses controlling for the main effect, time interaction, and gender interactions for within-person variation in (a) the number of sexual partners within the past 4 months, or (b) the number of current sexual partners. Within-person fluctuations in both the number of sexual partners in the past 4 months ( $ts < 1.21$ ,  $ps > .23$ ) and current sexual partners ( $ts < -.58$ ,  $ps > .56$ ) were not associated with changes in relationship wellbeing over time, and controlling for these variables did not alter the focal results presented in Table 3 ( $ts = 2.72$  to  $7.33$ ,  $ps = .007$  to  $< .001$ ).<sup>7</sup>

## Discussion

Study 2 provides the first evidence that individuals experience meaningful fluctuations in relationship-specific attachment security in their intimate relationships. Furthermore, these fluctuations predict changes in relationship satisfaction over time, especially for secure individuals, who expect greater stability in their relationships. Among secure individuals (i.e., those who scored low in baseline attachment anxiety or attachment avoidance), larger fluctuations in attachment anxiety or attachment avoidance across time undermined their relationship satisfaction, resulting in (a) worse outcomes a year later compared with secure individuals who experienced fewer fluctuations and (b) as bad or worse outcomes a year later compared with *insecure* individuals who also experienced greater fluctuations.

## Study 3

Study 3 sought to replicate the central findings of Study 2—that greater fluctuations in attachment security undermine relationship satisfaction, particularly for secure individuals. However, Study 3 also extended Study 2 in four important ways. First, it assessed partners involved in more long-term, committed relationships to ascertain the reliability and generalizability of the Study 2 findings. Second, Study 3 examined romantic couples that were undergoing a major life transition—having a first child. The transition to parenthood is particularly relevant because changes in partners' responsiveness during chronically stressful situations are

<sup>7</sup> Controlling for how many people participants had sex with in the last 4 months or the number of their current sexual partners did not alter any of our focal effects in Table 3 ( $ts = 2.84$  to  $7.22$ ,  $ps = .005$  to  $< .001$ ). To test for moderation effects of relationship exclusivity, we recoded both relationship exclusivity variables to index exclusive versus nonexclusive relationships (coded  $-1 =$  exclusive,  $1 =$  nonexclusive) because of the highly skewed nature of both variables. Neither relationship exclusivity in the last 4 months nor current relationship exclusivity moderated any of the focal effects in the attachment anxiety model ( $B = .07$ ,  $t = 1.25$ ,  $p = .21$ ;  $B = -.13$ ,  $t = -1.19$ ,  $p = .24$ , respectively), but they did significantly moderate the focal effects in the attachment avoidance model ( $B = .18$ ,  $t = 2.46$ ,  $p = .014$ ;  $B = .19$ ,  $t = 2.16$ ,  $p = .03$ ). These moderation effects generally revealed similar effects for participants who were in exclusive (past 4 months:  $B = .17$ ,  $t = 1.62$ ,  $p = .11$ ; current:  $B = .29$ ,  $t = 3.54$ ,  $p < .001$ ) and in nonexclusive relationships (past 4 months:  $B = .61$ ,  $t = 5.77$ ,  $p < .001$ ; current:  $B = .64$ ,  $t = 3.42$ ,  $p = .001$ ), but do suggest that our focal effects might be slightly stronger for people with multiple sexual partners. Nonetheless, our focal effects are robust to differences in peoples' relationship exclusivity.

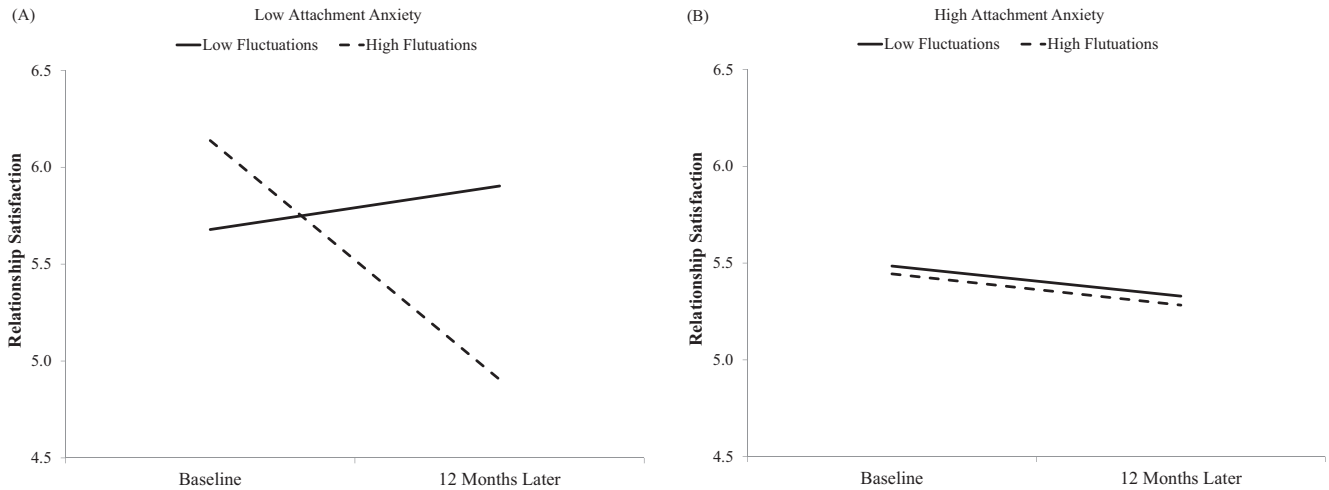


Figure 2. Linear changes in relationship satisfaction over time as a function of low (A) versus high (B) baseline relationship-specific attachment anxiety, moderated by low versus high fluctuations in relationship-specific attachment anxiety (Study 2). High and low values of attachment anxiety and fluctuations in attachment anxiety are indexed 1 *SD* below and above the mean.

more likely to induce changes in relationship-specific attachment, especially if they contradict existing attachment-related beliefs or expectations (see Bowlby, 1980; Feeney et al., 2003; Simpson, Rholes, Campbell, & Wilson, 2003b). Furthermore, this study allowed us to measure baseline attachment security *before* the occurrence of the stressor (the birth of each couple's first child), after which each couple was followed for two years. This design provides a clearer test of whether later fluctuations in relationship-specific attachment security undermine relationship satisfaction across a longer time-period (two years). Third, we expanded our outcome measures to include the amount of relationship distress experienced by each partner across the transition to parenthood to

assess whether larger fluctuations in attachment security exacerbate relationship problems, rather than just reduce satisfaction.

Lastly, we control for several alternative explanations for our focal effects, including whether they might be driven by tumultuous personal or relationship environments (e.g., fluctuations in depressive symptoms or negative relationship interactions) rather than fluctuations in attachment security (Arriaga, 2001; Arriaga et al., 2006; McNulty, 2016; McNulty & Karney, 2004). Second, we wanted to rule out that secure individuals who experience greater fluctuations in attachment security may have personal and family histories at the beginning of the study that put them at risk for experiencing greater fluctuations across the 2 years (Davila et al.,

Table 4

Simple Effects for the Interaction Between Baseline Attachment and Fluctuations in Attachment on Relationship Wellbeing Across Time (Studies 2 & 3)

Dependent variables	Figure	Low attachment anxiety						High attachment anxiety					
		Low fluctuation			High fluctuation			Low fluctuation			High fluctuation		
		Time slope	<i>t</i>	<i>p</i>	Time slope	<i>t</i>	<i>p</i>	Time slope	<i>t</i>	<i>p</i>	Time slope	<i>t</i>	<i>p</i>
Study 2													
Relationship satisfaction	2	.07	.98	.33	<b>-.41</b>	<b>-4.05</b>	<b>.00</b>	-.05	-.44	.66	-.05	-.72	.48
Study 3													
Relationship satisfaction	4	-.01	-.32	.75	<b>-.24</b>	<b>-7.86</b>	<b>.00</b>	.02	.64	.53	<b>-.10</b>	<b>-4.36</b>	<b>.00</b>
Relationship distress	5	.02	1.05	.30	<b>.12</b>	<b>6.03</b>	<b>.00</b>	<b>.05</b>	<b>1.95</b>	<b>.05</b>	<b>.08</b>	<b>5.68</b>	<b>.00</b>
Study 2													
Relationship satisfaction	3	.14	1.58	.11	<b>-.81</b>	<b>-7.35</b>	<b>.00</b>	-.15	-1.26	.21	.07	.88	.38
Study 3													
Relationship satisfaction	6	-.02	-.80	.42	<b>-.16</b>	<b>-5.82</b>	<b>.00</b>	-.02	-.67	.50	<b>-.08</b>	<b>-3.52</b>	<b>.00</b>
Relationship distress	7	.02	1.07	.29	<b>.11</b>	<b>6.16</b>	<b>.00</b>	<b>.05</b>	<b>1.98</b>	<b>.05</b>	<b>.08</b>	<b>5.79</b>	<b>.00</b>

Note. Low versus high levels of attachment and fluctuations in attachment are indexed 1 *SD* below and above the mean. Significant simple effects are in bold.

Table 5  
*Difference at End Points of the Studies for the Interaction Between Baseline Attachment and Fluctuations in Attachment on Relationship Wellbeing Across Time (Studies 2 & 3)*

Dependent variables	Figure	Low attachment anxiety slope: Low versus high fluctuations			High attachment anxiety slope: Low versus high fluctuations			Low fluctuations slope: Low versus high attachment anxiety			High fluctuations slope: Low versus high attachment anxiety		
		Slope	<i>t</i>	<i>p</i>	Slope	<i>t</i>	<i>p</i>	Slope	<i>t</i>	<i>p</i>	Slope	<i>t</i>	<i>p</i>
Study 2													
Relationship satisfaction	2	<b>-.81</b>	<b>-2.74</b>	<b>.01</b>	-.03	-.13	.90	-.20	-1.54	.13	.13	1.09	.28
Study 3													
Relationship satisfaction	4	<b>-6.79</b>	<b>-7.26</b>	<b>.00</b>	<b>-2.73</b>	<b>-3.21</b>	<b>.00</b>	-.24	-.62	.54	<b>1.23</b>	<b>4.38</b>	<b>.00</b>
Relationship distress	5	<b>2.60</b>	<b>4.04</b>	<b>.00</b>	.68	1.19	.24	<b>.57</b>	<b>2.24</b>	<b>.03</b>	-.12	-.61	.55
		Low attachment avoidance slope: Low versus high fluctuations			High attachment avoidance slope: Low versus high fluctuations			Low fluctuations slope: Low versus high attachment avoidance			High fluctuations slope: Low versus high attachment avoidance		
Study 2													
Relationship satisfaction	3	<b>-3.08</b>	<b>-7.23</b>	<b>.00</b>	.28	.83	.41	<b>-1.04</b>	<b>-6.38</b>	<b>.00</b>	.22	1.49	.14
Study 3													
Relationship satisfaction	6	<b>-3.24</b>	<b>-3.36</b>	<b>.00</b>	-.33	-.32	.75	<b>-3.23</b>	<b>-6.22</b>	<b>.00</b>	<b>-1.94</b>	<b>-5.50</b>	<b>.00</b>
Relationship distress	7	<b>1.97</b>	<b>2.97</b>	<b>.00</b>	<b>1.43</b>	<b>1.97</b>	<b>.05</b>	<b>1.57</b>	<b>4.40</b>	<b>.00</b>	<b>1.34</b>	<b>5.48</b>	<b>.00</b>

Note. Low versus high levels of attachment and fluctuations in attachment are indexed 1 SD below and above the mean. Significant simple effects are in bold.

1997). Finally, the dyadic design of this study also allowed us to control for partners' baseline, within-person fluctuations, and within-person trajectories in attachment security. This permitted us to rule out the possibility that secure individuals who experience greater fluctuations are experiencing declines in relationship wellbeing because of changes in their partners' insecurities that could be undermining their relationship wellbeing (Butzer & Campbell, 2008; Carnelley et al., 1996; Simpson, 1990) or because of co-occurring changes between partners (Hudson et al., 2014; Simpson, Rholes, Campbell, & Wilson, 2003b).

**Method**

**Participants.** One hundred ninety-two heterosexual couples were originally recruited for a study on the transition to parenthood. Because power calculations for dyadic data were not available when participants were recruited, the target sample size was determined by

examining prior transition studies (e.g., Cowan & Cowan, 2000) and determining how many couples were needed to detect small main effects (e.g., correlations in the teens) along with two-way and three-way interactions. Samples of 150 or more couples met these criteria.

Twenty-one couples of the original 192 did not provide enough longitudinal data to be included in the current study (see the eligibility criteria below). At the prenatal assessment wave (Time 0), 169 (98.8%) couples were married and had been married for a mean of 3.32 years (*SD* = 2.54), and two couples were cohabiting (but not married) and had been living together for a mean of 1.58 years (*SD* = .87). The data from these 171 couples were used in Study 3. Participants were between 19 and 45 years of age (*M* = 27.88 years, *SD* = 4.17 years). With regard to racial/ethnic composition, the sample was composed predominately of participants who identified as White (80.5%), but also included Asian (9.5%), Latino/Hispanic (7.5%) and

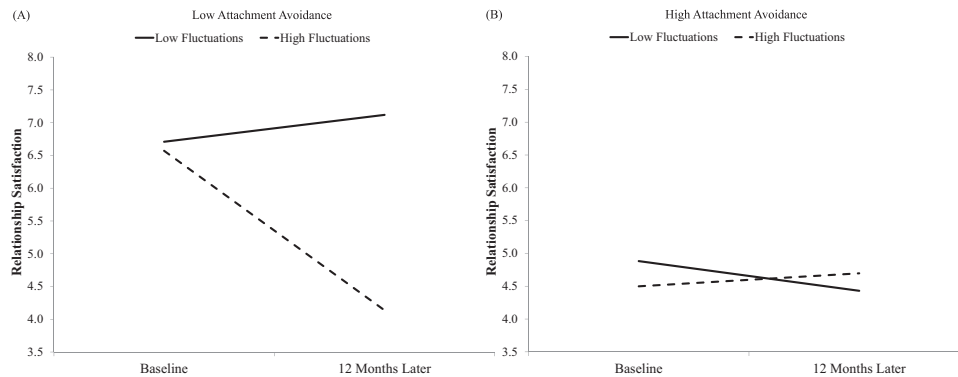


Figure 3. Linear changes in relationship satisfaction over time as a function of low (A) versus high (B) baseline relationship-specific attachment avoidance, moderated by low versus high fluctuations in relationship-specific attachment avoidance (Study 2). High and low values of attachment avoidance and fluctuations in attachment avoidance are indexed 1 SD below and above the mean.

Black (.3%; 2.2% of the participants did not provide information about their ethnic/racial identity).

**Procedure.** Couples were recruited from childbirth preparation classes and fliers distributed at local hospitals. To be eligible for the study, participants had to be expecting their first child and had to be married or cohabiting with their partners. At each wave of data collection, questionnaires were mailed to each partner in separate envelopes. Participants were told to complete their questionnaires independently (without consulting with their partners) and to return their responses in separate, prestamped envelopes that were sent to them. The self-report measures were completed 6 weeks before their expected due date (Time 0) and approximately 6 months (Time 1), 12 months (Time 2), 18 months (Time 3), and 24 months (Time 4) after their child was born. To minimize attrition, compensation was gradually increased across the study. Couples received \$50 for completing each of the Time 0, Time 1, and Time 2 questionnaires, \$75 for completing each of the Time 3 and Time 4 questionnaires, and were entered into a drawing for two \$500 cash prizes after completing all 5 waves of the study.

As in Study 2, we selected couples in which both partners responded to at least 2 time points to assess within-person variation in attachment security and changes in relationship wellbeing over time. Similar to Study 2, the excluded participants (the 21 couples mentioned above) scored lower in mean attachment anxiety scores (excluded:  $M = 2.24$ ,  $SD = 1.24$ ; retained:  $M = 2.10$ ,  $SD = .99$ ,  $t = -2.04$ ,  $p = .042$ ) and higher in mean attachment avoidance scores (excluded:  $M = 1.94$ ,  $SD = 1.09$ ; retained:  $M = 1.64$ ,  $SD = .73$ ,  $t = -4.97$ ,  $p < .001$ ) compared with the 171 couples retained for the current analyses.

#### Materials.

**Relationship-specific attachment security.** Participants completed an 18-item Experiences in Close Relationships Scale (Brennan, Clark, & Shaver, 1998) with regard to their current relationship partner/spouse. Nine items assessed attachment avoidance (e.g., "I prefer not to show my partner/spouse how I feel deep down," men:  $\alpha = .89$ ; women:  $\alpha = .87$ , calculated at each time point and then averaged across time points), and 9 items assessed attachment anxiety (e.g., "I worry about being abandoned by my partner/spouse," men:  $\alpha = .87$ ; women:  $\alpha = .85$ , calculated at each time point and then averaged across time points; 1 = *disagree strongly*, 7 = *agree strongly*).

**Relationship satisfaction.** Participants rated the 10-item satisfaction subscale of the Dyadic Adjustment Scale (Spanier, 1976). The response options vary somewhat across items; however, most items were rated on 6-point scales (e.g., "In general, how often do you think that things between you and your partner/spouse are going well?" and "How often do you and your partner/spouse quarrel?" 1 = *never*, 6 = *all the time*). Participants also rated their overall happiness with the relationship on a 7-point scale ("Please bubble in the number that best describes the degree of happiness, all things considered, in your marriage/relationship," 0 = *extremely unhappy*, 6 = *perfect*). Scores for relationship satisfaction were summed and could range from 0 to 50, with higher scores indicating greater satisfaction (men:  $\alpha = .84$ ; women:  $\alpha = .83$ , calculated at each time point and then averaged across time points).

**Relationship distress.** Participants rated the 22-item global distress subscale of the Revised Marital Satisfaction Inventory (Snyder, 1997). Items were comprised of true or false questions

(e.g., "I have important needs in our relationship that are not being met," "Our relationship has been very satisfying" (reverse-coded), and "There are some serious difficulties in our relationship"). Scores for relationship distress were summed and could range from 0 to 22, with higher scores indicating greater distress (men:  $\alpha = .90$ ; women:  $\alpha = .89$ , calculated at each time point and then averaged across time points).

**Depressive symptoms.** Depressive symptoms were measured by the Center for Epidemiologic Studies–Depression Scale, which was developed for use with normal populations (Radloff & Teri, 1986). Participants indicated how often they felt during the past week (e.g., "I was bothered by things that usually didn't bother me," "I felt depressed," and "I could not get 'going.'") Items were measured on 4-point scales from 1 (*rarely or none of the time [less than 1 day]*) to 4 (*most or all of the time [5–7 days]*). Items were summed, and then we subtracted 20 from each participants' score so there is a conceptually relevant start point, ranging from 0 to 60, with higher scores reflect more depressive symptoms (men:  $\alpha = .90$ ; women:  $\alpha = .90$ , calculated at each time point and then averaged across time points).

**Negative relationship behaviors.** Participants rated the 24-item Negative Social Exchange scale (Finch, Okun, Pool, & Ruhlman, 1999) when considering their own behavior toward their partner in the past month (e.g., "were cold toward your partner/spouse," "nagged your partner/spouse," "got angry with your partner/spouse"). Participants also completed an identical scale about their partner's behavior toward them in the past month (e.g., "lost his/her temper with me," "was rude to me," "argued with me"). Scores for own and perception of partners' conflict behaviors could range from 1 (*not at all*) to 9 (*frequently*), with higher scores indicating greater negative exchange behaviors (own negative behavior: men:  $\alpha = .96$ ; women:  $\alpha = .95$ ; perceptions of partner's negative behavior: men:  $\alpha = .97$ ; women:  $\alpha = .96$ , calculated at each time point and then averaged across time points). Both scales were highly associated with each other (own negative behavior  $\rightarrow$  perceptions of partners' negative behavior,  $B = .81$ ,  $t = 36.85$ ,  $p < .001$ ), and were averaged to index negative relationship behaviors more generally.

**History of family distress.** Participants rated the 9-item history of family distress subscale of the Revised Marital Satisfaction Inventory (Snyder, 1997). Items were comprised of true or false questions (e.g., "My childhood was probably happier than most," "The members of my family were always very close to each other"). Scores for family distress were summed and could range from 0 to 9, with higher scores indicating greater distress (men:  $\alpha = .81$ ; women:  $\alpha = .85$ , calculated at each time point and then averaged across time points).

## Results

Table 6 presents the descriptive statistics for all measures at each assessment wave. The mean levels of attachment remained relatively stable across the assessment waves, but relationship satisfaction tended to decrease and relationship distress tended to increase across the transition to parenthood (from the prenatal-to-postnatal assessments).

**Do individuals experience within-person variation (fluctuations) in relationship-specific attachment security?** To assess *within-person* variation (fluctuations) in attachment security, we

used the same analytic strategy as in Study 2. Individuals experienced considerable within-person variation in relationship-specific attachment anxiety ( $M = .48$ ,  $SD = .36$ , range = 0 – 2.15) and relationship-specific attachment avoidance ( $M = .42$ ,  $SD = .33$ , range = 0 – 1.71). Similar to Study 2, we also wanted to explore the associations between within-person fluctuations in attachment security and level of attachment security, given that individuals higher in attachment security generally experience more stable relationships and are less susceptible to fluctuations in attachment security (Arriaga et al., 2006; Cooper et al., in press; Davila et al., 1997; Feeney, 2016). Figure 1 illustrates the scatterplots for attachment anxiety (see Study 3, top right figure) and attachment avoidance (see Study 3, bottom right figure). The scatterplots reveal a slight linear trend, suggesting that as individuals' attachment anxiety or attachment avoidance increases, so do their within-person fluctuations in attachment security. Nonetheless, there still was a wide range of within-person fluctuations (range across the  $y$  axis) across the different levels of attachment security (range across the  $x$  axis).

**Do fluctuations in attachment anxiety predict changes in relationship satisfaction and relationship distress?** To test whether these fluctuations were meaningful, we used dyadic growth curve analyses to determine whether changes in relationship satisfaction and relationship distress over time depended on individuals' baseline attachment anxiety or attachment avoidance (assessed before the birth of their first child) and their subsequent fluctuations in attachment insecurity (assessed across the entire transition period). We used the same analytic strategy as in Study 2 (see Analytic Strategy section), except our multilevel models in Study 3 also accounted for the dependence shared by dyad members (Kenny et al., 2006).<sup>8</sup> Because the Study 3 questionnaires were completed separately by each partner and returned by mail, the precise timing of each assessment wave varied slightly within and across couples ( $SD = 0.34 - 1.25$  months within each assessment wave). To capture this variation, our Time variable was scored in months since the child's birth, depending on when participants returned each wave of questionnaires. The child's date of birth was treated as time zero. As a result, the intercept for all growth curve analyses indicates the outcome variable at birth, and the slope for time indicates monthly changes in that outcome variable across the transition to parenthood. We pooled the effects of men and women but, as in Study 2, we also modeled the main effect and interaction effects of gender (coded  $-1 =$  women,  $1 =$  men).<sup>9</sup>

The results for attachment anxiety on relationship satisfaction and relationship distress are displayed in Table 7. A significant 3-way interaction between Time  $\times$  Baseline Attachment Anxiety  $\times$  Fluctuations in Attachment Anxiety predicting relationship satisfaction (see Figure 4) and relationship distress (see Figure 5) emerged. We plotted the predicted values of relationship satisfaction and relationship distress at the birth of the child (0 months) and 24 months later for individuals who experienced low fluctuations ( $-1 SD$ , solid line) or high fluctuations ( $+1 SD$ , dashed line) in attachment anxiety, and separately for individuals low ( $-1 SD$ ) or high ( $+1 SD$ ) in baseline attachment anxiety.

Figures 4A and Figure 5A display the interactions for individuals who scored low in baseline attachment anxiety and replicated the pattern of findings in Study 2: Individuals low in baseline attachment anxiety who experienced *fewer* fluctuations in attach-

ment anxiety maintained their relationship satisfaction and relationship distress over time (Figures 4 and 5, respectively; see top left section of Table 4, Low Attachment Anxiety—Low Fluctuations). In contrast, individuals low in baseline attachment anxiety who experienced *greater* fluctuations in attachment anxiety experienced notable declines in relationship satisfaction and increases in relationship distress over time (Figures 4 and 5, respectively; see top left section of Table 4, Low Attachment Anxiety—High Fluc-

<sup>8</sup> As in Study 2, we modeled the intercept and time as random effects and allowed them to covary using an unidentified error structure (UN). Notably, we were unable to model these random effects separately for men and women (e.g., man woman man\*time woman\*time) because doing so interfered with model convergence for all models reported in Tables 6 and 7. Running the models displayed in Tables 6 and 7 by modeling the random effects separately for men and women revealed that, despite the models not reaching convergence, the Time  $\times$  Baseline Attachment  $\times$  Fluctuations in Attachment interactions remained significant ( $ts = 2.10$  to  $2.62$ ,  $ps = .037$  to  $.009$ ) with the exception of the attachment avoidance effect on relationship distress, which dropped to marginal,  $t = -1.73$ ,  $p = .086$ .

<sup>9</sup> Only 4 of the possible 28 effects in the Attachment Anxiety models in Table 7 differed by gender, and none of these pertained to our key analyses. First, Gender  $\times$  Time  $\times$  Fluctuations in Attachment Anxiety interactions predicting relationship satisfaction ( $B = -.07$ ,  $t = -1.85$ ,  $p = .07$ ) and relationship distress emerged ( $B = .06$ ,  $t = 2.11$ ,  $p = .04$ ), demonstrating that the detrimental effects of fluctuations on relationship well-being over time were stronger for men (relationship satisfaction:  $B = -.32$ ,  $t = -5.27$ ,  $p < .001$ ; relationship distress:  $B = .15$ ,  $t = 3.93$ ,  $p < .001$ ) compared with women (relationship satisfaction:  $B = -.17$ ,  $t = -3.07$ ,  $p = .002$ ; relationship distress:  $B = .04$ ,  $t = 1.01$ ,  $p = .31$ ). Second, a Gender  $\times$  Baseline Attachment Anxiety  $\times$  Fluctuations in Attachment Anxiety interaction predicting relationship distress emerged ( $B = -.67$ ,  $t = -2.23$ ,  $p = .03$ ), demonstrating a significant effect for women ( $B = .87$ ,  $t = 2.07$ ,  $p = .039$ ), but not men ( $B = -.47$ ,  $t = -1.10$ ,  $p = .27$ ). Specifically, among women who experienced greater fluctuations in attachment anxiety, greater baseline attachment anxiety was associated with greater relationship distress at time of birth ( $slope = .55$ ,  $t = 2.48$ ,  $p = .015$ ). Finally, a Gender  $\times$  Trajectory in Attachment Avoidance interaction predicting relationship satisfaction emerged ( $B = -27.65$ ,  $t = -2.40$ ,  $p = .017$ ), which demonstrated that the association between individuals' attachment avoidance trajectories over time and relationship satisfaction was stronger for men ( $B = -85.52$ ,  $t = -5.52$ ,  $p < .001$ ) compared with women ( $B = -30.06$ ,  $t = -1.98$ ,  $p = .048$ ). No other gender differences emerged ( $ts < 1.68$ ,  $ps > .094$ ). Only 6 of the possible 28 effects in the Attachment Avoidance models in Table 8 differed by gender, and most did not pertain to our key analyses. First, a main effect of Gender ( $B = .47$ ,  $t = 2.64$ ,  $p = .009$ ) indicated that men experienced greater relationship satisfaction ( $B = .43.15$ ,  $t = 140.30$ ,  $p < .001$ ) than women ( $B = 42.21$ ,  $t = 141.08$ ,  $p < .001$ ) at the birth of the child. Second, a series of interactions relevant to the key analyses for relationship satisfaction displayed in Figure 7 emerged: Specifically, there was a Gender  $\times$  Time  $\times$  Baseline Attachment Avoidance ( $B = -.05$ ,  $t = -2.28$ ,  $p = .023$ ) and a Gender  $\times$  Baseline Attachment Avoidance  $\times$  Fluctuations in Attachment Avoidance ( $B = -2.65$ ,  $t = -3.83$ ,  $p < .001$ ). There also was a marginally significant Gender  $\times$  Time  $\times$  Baseline Attachment Avoidance  $\times$  Fluctuations in Attachment Avoidance interaction ( $B = .08$ ,  $t = 1.82$ ,  $p = .07$ ), which emerged for men ( $B = .17$ ,  $t = 2.77$ ,  $p = .006$ ) but not for women ( $B = .01$ ,  $t = .13$ ,  $p = .90$ ). However, because the pooled interaction including both men and women was statistically significant ( $p = .04$ ) and no other gender differences emerged (or were hypothesized), we present the pooled effects in Table 8 and Figure 7. Lastly, identical to the gender differences described above in the Attachment Anxiety models, a Gender  $\times$  Time  $\times$  Fluctuations in Attachment Anxiety interaction predicting relationship distress emerged ( $B = .07$ ,  $t = 2.41$ ,  $p = .02$ ), as well as a Gender  $\times$  Trajectory in Attachment Avoidance interaction predicting relationship satisfaction emerged ( $B = -26.25$ ,  $t = -2.26$ ,  $p = .024$ ). We do not repeat these interpretations again. No other gender differences emerged ( $ts < 1.47$ ,  $ps > .14$ ).



Table 6  
Means (and Standard Deviations) of All Measures at Each Assessment Wave (Study 3)

Measure	Scale range	Data range	Assessment wave				
			6 weeks prenatal ( <i>N</i> = 171 <sub>W</sub> , 171 <sub>M</sub> )	6 months postnatal ( <i>N</i> = 168 <sub>W</sub> , 167 <sub>M</sub> )	12 months postnatal ( <i>N</i> = 155 <sub>W</sub> , 150 <sub>M</sub> )	18 months postnatal ( <i>N</i> = 151 <sub>W</sub> , 149 <sub>M</sub> )	24 months postnatal ( <i>N</i> = 143 <sub>W</sub> , 136 <sub>M</sub> )
Relationship-specific attachment anxiety	1–7	1–6.44	2.08 (.98)	2.03 (.90)	2.00 (.92)	2.04 (.98)	2.00 (1.00)
Relationship-specific attachment avoidance	1–7	1–5.44	1.65 (.75)	1.69 (.79)	1.75 (.88)	1.76 (.87)	1.79 (.94)
Relationship satisfaction	0–50	0–50	43.05 (4.24)	42.29 (4.85)	42.05 (5.93)	41.84 (6.11)	41.25 (6.80)
Relationship distress	0–22	0–22	1.49 (2.64)	2.32 (3.59)	2.73 (4.36)	2.67 (4.33)	2.89 (4.43)
Depressive symptoms	0–60	0–53	10.32 (8.26)	8.79 (8.16)	9.29 (8.48)	9.74 (9.37)	9.40 (9.00)
Negative relationship behaviors	1–9	1–7.48	2.23 (.99)	2.33 (1.11)	2.43 (1.17)	2.43 (1.24)	2.40 (1.15)
History of family distress	0–9	0–9	3.11 (2.65)	3.19 (2.73)	3.32 (2.68)	3.30 (2.77)	3.23 (2.75)

Note. Because spouses completed their surveys independently and returned them in separate envelopes, sometimes only one partner completed a given wave. Thus, we report the number of responses at each assessment, separately for women (denoted with W) and men (denoted with M).

tuations). In fact, individuals who were low in attachment anxiety and experienced greater fluctuations reported much lower relationship satisfaction and greater relationship distress two years later than their more stable counterparts (see first column in Table 5, Low Attachment Anxiety Slope—Low vs. High Fluctuations). Furthermore, individuals low in baseline attachment anxiety who experienced greater fluctuations in attachment anxiety were actually *worse off* in their relationship satisfaction, but not different in relationship distress by the end of the study than their insecure counterparts (see fourth column in Table 5, High Fluctuations Slope—Low vs. High Attachment Anxiety).

Figures 4B and Figure 5B illustrate the interactions for individuals who scored high in baseline attachment anxiety. Individuals high in attachment anxiety who experienced fewer fluctuations maintained low levels of relationship satisfaction over time, but experienced marginal increases in relationship distress (Figures 4 and 5, respectively; see top right section of Table 4, High Attachment Anxiety—Low Fluctuations). Furthermore, unlike the non-significant simple effect in Study 2, individuals high in attachment anxiety who experienced greater fluctuations reported lower relationship satisfaction and greater relationship distress across time (Figures 4 and 5, respectively; see top right section of Table 4,

Table 7

The Effects of Baseline Relationship-Specific (RS) Attachment Anxiety and Fluctuations in Relationship-Specific Attachment Anxiety on Relationship Wellbeing Across Time (Study 3)

Models	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI		<i>r</i>
				Low	High	
Relationship satisfaction						
Intercept	42.75	.25	171.69***	42.26	43.24	1.00
Baseline RS-attachment anxiety	-.53	.26	-2.04*	-1.05	-.02	.07
Fluctuations in RS-attachment anxiety	1.12	.64	1.75	-.14	2.39	.07
Baseline RS-Attachment Anxiety × Fluctuations in RS-attachment anxiety	.23	.44	.52	-.63	1.09	.02
Time	-.08	.02	-4.99***	-.11	-.05	.33
Time × Baseline RS-attachment anxiety	.04	.02	2.62**	.01	.08	.10
Time × Fluctuations in RS-attachment anxiety	-.25	.04	-5.83***	-.33	-.16	.22
Time × Baseline RS-Attachment Anxiety × Fluctuations in RS-attachment anxiety	<b>.08</b>	<b>.03</b>	<b>2.78**</b>	<b>.02</b>	<b>.13</b>	<b>.10</b>
Trajectory over time for RS-attachment anxiety	13.14	11.13	1.18	-8.70	34.98	.04
Relationship distress						
Intercept	1.75	.18	9.61***	1.39	2.11	.55
Baseline RS-attachment anxiety	.27	.18	1.51	-.08	.61	.05
Fluctuations in RS-attachment anxiety	-.66	.44	-1.49	-1.52	.21	.06
Baseline RS-Attachment Anxiety × Fluctuations in RS-attachment anxiety	.20	.30	.67	-.39	.79	.02
Time	.07	.01	6.55***	.05	.09	.44
Time × Baseline RS-attachment anxiety	-.00	.01	-.15	-.02	.02	.01
Time × Fluctuations in RS-attachment anxiety	.10	.03	3.45***	.04	.15	.14
Time × Baseline RS-Attachment Anxiety × Fluctuations in RS-attachment anxiety	<b>-.05</b>	<b>.02</b>	<b>-2.66**</b>	<b>-.08</b>	<b>-.01</b>	<b>.10</b>
Trajectory over time for RS-attachment anxiety	.69	7.76	.09	-14.55	15.93	.00

Note. Predicted significant interaction effects are in bold. To account for the shared variance between attachment anxiety and attachment avoidance, each model controls for the within-person trajectory over time for the alternative attachment orientation. Baseline attachment and fluctuations in attachment were also entered as predictors of the intercept and the effect of time for the alternative attachment orientation. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula:  $r = \sqrt{t^2 / t^2 + df}$ . CI = confidence interval.

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

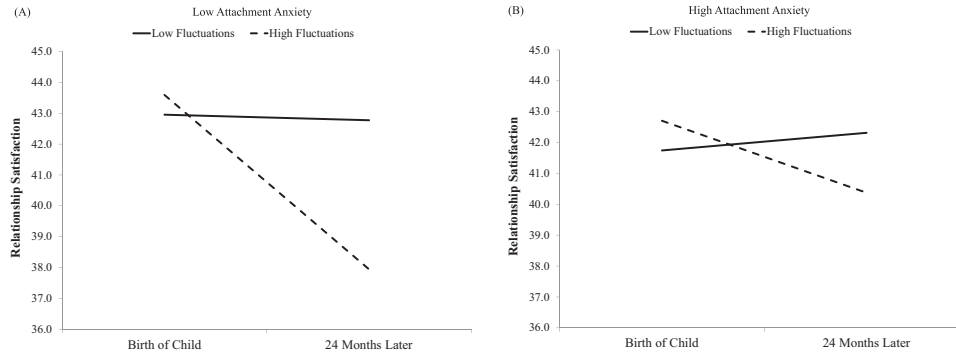


Figure 4. Linear changes in relationship satisfaction over time as a function of low (A) versus high (B) baseline relationship-specific attachment anxiety, moderated by low versus high fluctuations in relationship-specific attachment anxiety (Study 3). High and low values of attachment anxiety and fluctuations in attachment anxiety are indexed 1 *SD* below and above the mean.

High Attachment Anxiety—High Fluctuations). Individuals who were high in attachment anxiety and experienced greater fluctuations also experienced significantly lower relationship satisfaction two years later than did their more stable counterparts, but were not significantly different in relationship distress (see second column in Table 5, High Attachment Anxiety Slope—Low vs. High Fluctuations).

**Do fluctuations in attachment avoidance predict changes in relationship satisfaction and relationship distress?** Next, we ran analogous models for attachment avoidance. The results are displayed in Table 8. A significant 3-way interaction between Time  $\times$  Baseline Attachment Avoidance  $\times$  Fluctuations in Attachment Avoidance predicting relationship satisfaction (see Figure 6) and relationship distress (see Figure 7) emerged. Panels A in Figure 6 and Figure 7 show the interactions for individuals who scored low in baseline attachment avoidance and replicated the pattern of findings in Study 2: Individuals low in baseline avoidance who experienced fewer fluctuations in avoidance maintained their relationship satisfaction and relationship distress over time (see Figures 6 and 7, respectively; see bottom left section of Table 4, Low Attachment Avoidance—Low Fluctuations). In contrast, individuals low in base-

line attachment avoidance who experienced greater fluctuations in avoidance experienced sharp declines in relationship satisfaction and increases in relationship distress over time (see Figures 6 and 7, respectively; see bottom left section of Table 4, Low Attachment Avoidance—High Fluctuations). In fact, individuals who were low in attachment avoidance and experienced greater fluctuations reported much lower relationship satisfaction and much greater relationship distress two years later than did their more stable counterparts (see first column in Table 5, Low Attachment Avoidance Slope—Low vs. High Fluctuations). However, individuals low in baseline attachment avoidance who experienced greater fluctuations in attachment anxiety still reported greater relationship satisfaction and lower relationship distress by the end of the study, similar to their insecure counterparts (see fourth column in Table 5, High Fluctuations Slope—Low vs. High Attachment Avoidance).

Figures 6B and Figure 7B display the interactions for individuals who scored high in baseline attachment avoidance, which are different than the null effects in Study 2. Individuals high in attachment avoidance experienced lower relationship satisfaction and greater relationship distress over time, regardless of whether they experienced smaller or larger fluctuations (see Figures 6 and

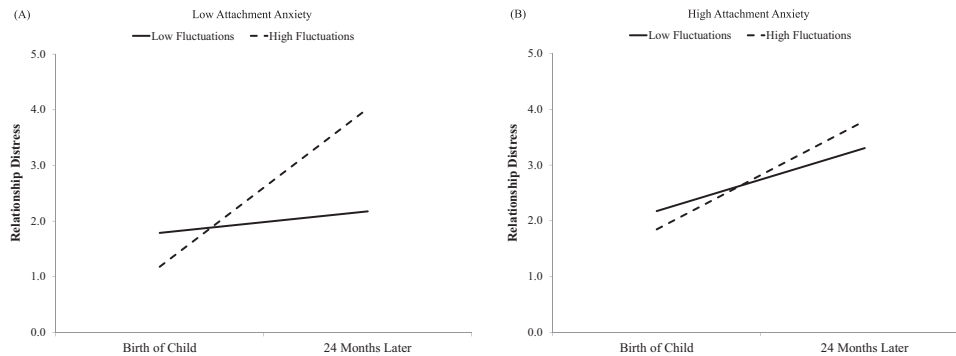


Figure 5. Linear changes in relationship distress over time as a function of low (A) versus high (B) baseline relationship-specific attachment anxiety, moderated by low versus high fluctuations in relationship-specific attachment anxiety (Study 3). High and low values of attachment anxiety and fluctuations in attachment anxiety are indexed 1 *SD* below and above the mean.

Table 8

The Effects of Baseline Relationship-Specific (RS) Attachment Avoidance and Fluctuations in Relationship-Specific Attachment Avoidance on Relationship Wellbeing Across Time (Study 3)

Models	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI		<i>r</i>
				Low	High	
<b>Relationship Satisfaction</b>						
Intercept	42.68	.25	173.92***	42.20	43.17	1.00
Baseline RS-attachment avoidance	-3.23	.31	-10.26***	-3.85	-2.61	.36
Fluctuations in RS-attachment avoidance	1.70	.72	2.38*	.30	3.11	.08
Baseline RS-Attachment Avoidance × Fluctuations in RS-attachment avoidance	-.19	.68	-.28	-1.53	1.15	.01
Time	-.07	.02	-4.44***	-.10	-.04	.30
Time × Baseline RS-attachment avoidance	.03	.02	1.31	-.01	.07	.05
Time × Fluctuations in RS-attachment avoidance	-.15	.04	-3.31***	-.23	-.06	.12
Time × Baseline RS-Attachment Avoidance × Fluctuations in RS-attachment avoidance	<b>.09</b>	<b>.04</b>	<b>2.06*</b>	<b>.00</b>	<b>.18</b>	<b>.07</b>
Trajectory over time for RS-attachment avoidance	-57.11	10.15	-5.63***	-77.03	-37.19	.19
<b>Relationship distress</b>						
Intercept	1.69	.18	9.33***	1.33	2.04	.55
Baseline RS-attachment avoidance	1.44	.22	6.57***	1.01	1.87	.24
Fluctuations in RS-attachment avoidance	-.63	.49	-1.27	-1.59	.34	.04
Baseline RS-Attachment Avoidance × Fluctuations in RS-attachment avoidance	1.11	.47	2.35*	.18	2.03	.08
Time	.06	.01	6.37***	.04	.08	.43
Time × Baseline RS-attachment avoidance	.00	.01	.05	-.03	.03	.00
Time × RS-fluctuations in attachment avoidance	.10	.03	3.32***	.04	.15	.13
Time × Baseline RS-Attachment Avoidance × Fluctuations in RS-attachment avoidance	<b>-.06</b>	<b>.03</b>	<b>-2.06*</b>	<b>-.12</b>	<b>-.00</b>	<b>.08</b>
Trajectory over time for RS-attachment avoidance	29.73	7.14	4.17***	15.72	43.74	.14

Note. Predicted significant interaction effects are in bold. To account for the shared variance between attachment anxiety and attachment avoidance, each model controls for the within-person trajectory over time for the alternative attachment orientation. Baseline attachment and fluctuations in attachment were also entered as predictors of the intercept and the effect of time for the alternative attachment orientation. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula:  $r = \sqrt{(t^2 / t^2 + df)}$ . CI = confidence interval.

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

7, respectively; see bottom right section of Table 4, High Attachment Avoidance—Low Fluctuations and High Attachment Avoidance—High Fluctuations). However, individuals who were high in attachment avoidance and experienced greater fluctuations did not experience significantly different relationship satisfaction two years later compared with their more stable counterparts, but they did experience significantly greater distress (see second column in

Table 5, High Attachment Avoidance Slope—Low vs. High Fluctuations).

**Alternative explanations.** One possible reason that greater fluctuations in attachment security undermine relationship outcomes might not be attributable to fluctuations in attachment per se, but because people are experiencing a tumultuous personal or interpersonal environment (Arriaga, 2001; Arriaga et al., 2006;

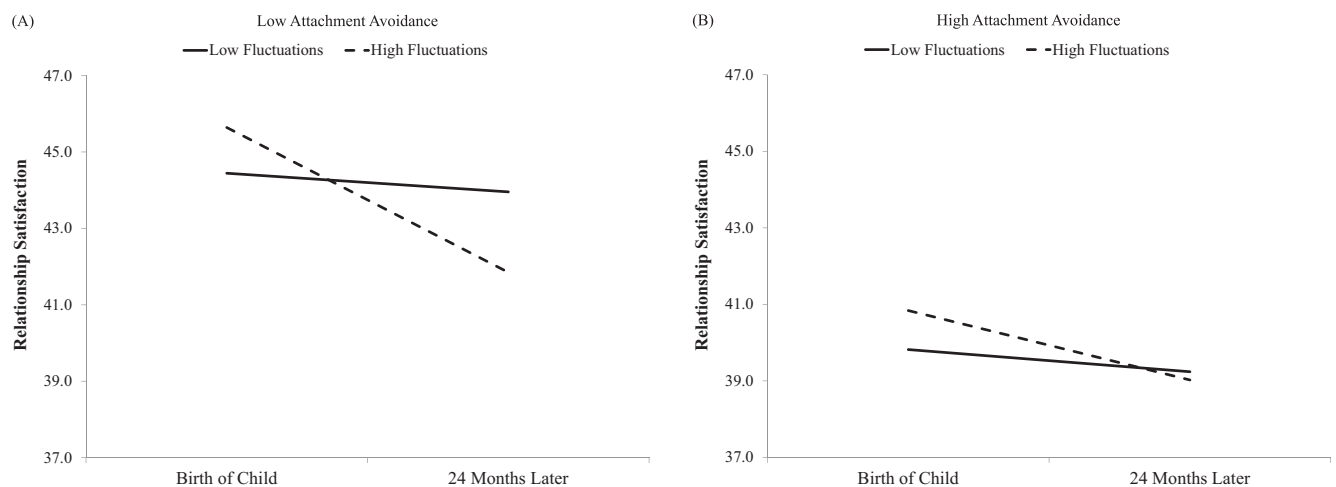
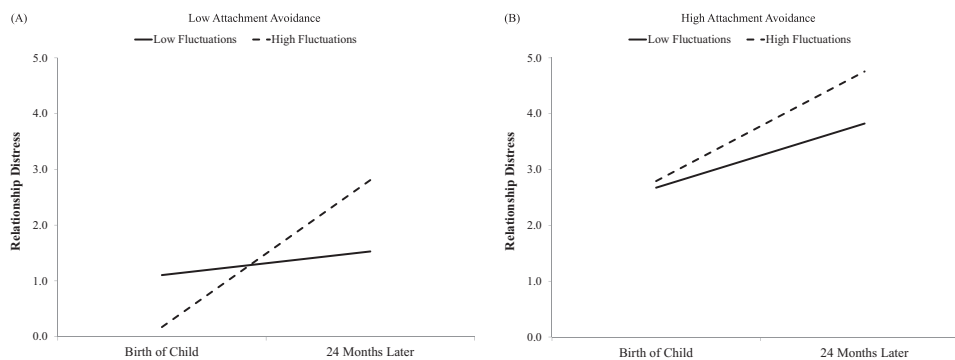


Figure 6. Linear changes in relationship satisfaction over time as a function of low (A) versus high (B) baseline relationship-specific attachment avoidance, moderated by low versus high fluctuations in relationship-specific attachment avoidance (Study 3). High and low values of attachment avoidance and fluctuations in attachment avoidance are indexed 1 SD below and above the mean.



**Figure 7.** Linear changes in relationship distress over time as a function of low (A) versus high (B) baseline relationship-specific attachment avoidance, moderated by low versus high fluctuations in relationship-specific attachment avoidance (Study 3). High and low values of attachment avoidance and fluctuations in attachment avoidance are indexed 1 *SD* below and above the mean.

McNulty & Karney, 2004; McNulty, 2016). Thus, to adjust for more general turmoil in people's environment, we reran our analyses controlling for the main effect, time interaction, and gender interactions for within-person variation (fluctuations) in (a) depressive symptoms, or (b) negative relationship behaviors. Across the 4 models reported in Tables 7 and 8, fluctuations in depressive symptoms ( $t_s = 3.09$  to  $-3.98$ ,  $p_s = .002$  to  $.000$ ) and negative relationship behavior ( $t_s = -3.44$  to  $3.66$ ,  $p_s < .001$ ) predicted lower relationship satisfaction and greater relationship distress over time. Despite the strong independent effects of these tumultuous experiences, the focal effects displayed in Figures 4–7 remained significant in 6 of the 8 models when controlling for within-person variation in depressive symptoms and negative relationship behaviors ( $t_s = -2.08$  to  $2.50$ ,  $p_s = .038$  to  $.013$ ). The two effects that became nonsignificant ( $p_s > .17$ ) were in the attachment avoidance models controlling for within-person variation in depressive symptoms. This suggests that the effect of fluctuations in attachment avoidance on relationship wellbeing for individuals who were secure at baseline might be attributable to within-person variation in depressive symptoms. This finding is consistent with prior findings (in the same sample) indicating that highly avoidant individuals are more susceptible to changes in depressive symptoms during the transition to parenthood (Simpson, Rholes, Campbell, Tran, & Wilson, 2003a), especially in response to changes in their partner's support and care (Rholes et al., 2011; also see similar findings of daily depressed mood reported in Girme et al., 2015, Study 4). Thus, our focal effects generally emerge independently of environmental turmoil, and they appeared to be attributable to fluctuations in more ingrained evaluations of felt security.

It might also be the case that secure individuals who experience greater fluctuations have histories of individual and family problems, which puts them at risk for greater within-person fluctuations in attachment across time (Davila et al., 1997). Thus, we reran our original models to explore whether secure individuals who experience greater fluctuations in their relationship-specific attachment security report higher levels of either (a) depressive symptoms or (b) history of family distress before the birth of their first child. We did not find any significant differences in depressive symptoms between baseline attachment and within-person fluctuations in attachment (Baseline At-

tachment Anxiety  $\times$  Fluctuations in Attachment Anxiety:  $B = -.59$ ,  $SE = .83$ ,  $t = -.72$ ,  $p = .47$ ; Baseline Attachment Avoidance  $\times$  Fluctuations in Attachment Avoidance:  $B = -.93$ ,  $SE = 1.30$ ,  $t = -.71$ ,  $p = .48$ ). However, we did find marginally significant differences in family history of distress between baseline attachment and within-person fluctuations in attachment (Baseline Attachment Anxiety  $\times$  Fluctuations in Attachment Anxiety:  $B = -.47$ ,  $SE = .27$ ,  $t = 1.75$ ,  $p = .08$ ; Baseline Attachment Avoidance  $\times$  Fluctuations in Attachment Avoidance:  $B = -.73$ ,  $SE = .42$ ,  $t = -1.73$ ,  $p = .08$ ). Plotting these interactions revealed that, for individuals low in attachment anxiety ( $-1$  *SD*) or low in attachment avoidance ( $-1$  *SD*), a history of family distress at baseline did not differ for those with relatively fewer ( $-1$  *SD*) versus greater ( $+1$  *SD*) within-person fluctuations in relationship-specific attachment security (attachment anxiety model:  $diff = .26$ ,  $SE = .51$ ,  $t = .51$ ,  $p = .61$ ; attachment avoidance model:  $diff = .17$ ,  $SE = .53$ ,  $t = .33$ ,  $p = .74$ ). Thus, our results are not consistent with Davila and colleagues (1997), who found that secure individuals who experience greater within-person fluctuations in attachment are 'different' than those who experience fewer within-person fluctuations. Relevant tables and figures are available in the OSM.

Finally, secure individuals might experience greater fluctuations in their attachment security across time, and consequently experience worse relationship outcomes could be because of changes in their partners' attachment security. Indeed, insecure partners can undermine individuals' relationship wellbeing (Butzer & Campbell, 2008; Carnelley et al., 1996; Simpson, 1990), and create a turbulent and damaging relationship environment (Arriaga et al., 2006; Cooper et al., in press; Feeney, 2016). Furthermore, couples attachment security tends to fluctuate in unison over time (Hudson et al., 2014). To rule out the possibility that our effects might be driven by unstable or insecure partners, we reran all analyses controlling for partners' following attachment anxiety or attachment avoidance variables: (a) baseline attachment, (b) time  $\times$  baseline attachment, (c) within-person fluctuations in attachment, (d) time  $\times$  within-person fluctuations in attachment, (e) within-person trajectories in attachment, and (f) all higher-order gender interactions. All 3-way interactions between Time  $\times$  Baseline Attachment Security  $\times$  Fluctuations in Attachment Security displayed in Figures 4–7 remained significant ( $t_s = -1.95$  to  $2.85$ ,  $p_s = .051$  to  $.004$ ), suggesting that the focal

effects observed are occurring independently of changes in their *partners'* attachment security, and as a result of important within-person fluctuations.

## Discussion

Study 3 replicated the findings of Study 2 for individuals who were secure (i.e., those scoring low in baseline attachment anxiety or attachment avoidance) and experienced greater fluctuations in attachment anxiety or attachment avoidance across the stressful transition to parenthood. These individuals reported significant decreases in relationship satisfaction and increases in relationship distress over time, which resulted in (a) worse outcomes two years later relative to secure individuals who experienced fewer fluctuations, and (b) as bad or worse outcomes two years later relative to highly anxious individuals who also experienced greater fluctuations (but still better than highly avoidant individuals who experienced greater fluctuations). Unlike Study 2, Study 3 also revealed that, for individuals who were insecure (i.e., those scoring high in baseline attachment anxiety or attachment avoidance), fluctuations in attachment are also detrimental to their relationship outcomes. This difference might be attributable to the very challenging and stressful nature of the transition to parenthood, which is particularly difficult for insecure individuals (Feeney et al., 2003; Simpson, Rholes, Campbell, Tran, et al., 2003a; Simpson, Rholes, Campbell, & Wilson, 2003b). In sum, the results of Study 3 further accentuate the importance of examining and modeling within-person fluctuations in attachment security toward specific partners.

## General Discussion

The current research provides the first evidence that individuals experience substantial within-person variation (fluctuations) in their level of attachment security toward *specific* attachment figures (their current romantic partners) across time. These within-person fluctuations have important consequences for relationship wellbeing, depending on an individual's baseline level of attachment security and their expectations about the likely stability of the current intimate relationship. In what follows, we discuss ways in which these findings extend the literature as well as their important theoretical and practical implications.

### Within-Person Variation (Fluctuations) in Attachment Security Undermine Secure Individuals' Relationship Wellbeing

The current research provides the first evidence that securely attached individuals (i.e., those who score low in baseline attachment anxiety or attachment avoidance) expect greater stability and consistency in their relationships (Study 1). However, when secure individuals encounter large within-person fluctuations in relationship-specific attachment security toward their current partners, it drastically undermines their relationship satisfaction (Studies 2 and 3) and exacerbates their relationship distress (Study 3). These results are consistent with prior research showing that secure individuals believe their partners will be available and responsive to their needs (Baldwin et al., 1993; Collins & Read, 1990; Rowe & Carnelley, 2003) and typically experience better and more consistent relationship wellbeing (Arriaga et al., 2006; Cooper et al., in

press; Feeney, 2016; Li & Chan, 2012). However, the current research also extends the attachment literature in novel ways by revealing that secure individuals also experience within-person fluctuations in relationship-specific attachment security, and that expectations of greater relationship stability may make secure people more vulnerable to sharp reductions in relationship satisfaction and increases in relationship distress over time.

These novel findings are significant because they counterbalance previous research documenting secure individuals' steadfast resilience when confronted with potentially damaging relationship experiences. For example, in both lab and field studies, secure individuals (compared with insecure ones) tend to evaluate their partners as more supportive, report less distress, and cope better regardless of whether their partners provide them with low or high levels of support (e.g., Collins & Feeney, 2004; Girme et al., 2015; Rholes et al., 2011; Simpson et al., 2007). During conflict discussions, more secure individuals experience less physiological stress reactivity (Powers, Pietromonaco, Gunlicks, & Sayer, 2006) and maintain more positive relationship evaluations (Simpson, Rholes, & Phillips, 1996) compared with their insecure counterparts. Even in relationship threatening settings, jealousy motivates secure people to restore or protect the partner/relationship, which is not true of insecure people (Sharpsteen & Kirkpatrick, 1997). We are not suggesting that fluctuations in attachment security are more important than general levels of attachment security in forecasting relationship outcomes. Rather, we seek to unveil a unique context in which secure individuals (who typically respond to damaging behaviors more constructively) are particularly susceptible to negative relationship outcomes—in response to *fluctuations* across time in their level of attachment security toward their intimate partner.

When secure individuals do encounter greater fluctuations in attachment security, the consequences are severe. They experience relational outcomes that are significantly worse than those of secure individuals who experience fewer fluctuations over time, and they experience outcomes that are as bad as or worse than even *insecure* individuals who also experience greater fluctuations (the lone exception being differences between low and high attachment avoidance in Study 3). These findings are important because a considerable body of research has established that anxious and avoidant individuals experience significantly lower levels of relationship wellbeing compared with secure individuals (see Feeney, 2016; Mikulincer & Shaver, 2016, for recent reviews). The fact that greater fluctuations in relationship-specific attachment security appears to wash away these differences speaks to the powerful effect that within-person variation in attachment security has on secure individuals.

### Within-Person Variation (Fluctuations) in Attachment Security Has Less Impact on Insecure Individuals' Relationship Wellbeing

Greater fluctuations in attachment security are less impactful on insecure individuals (i.e., those who score high in baseline attachment anxiety or attachment avoidance). In Study 2, insecure individuals reported no changes in relationship satisfaction over time, regardless of whether they experienced small or large fluctuations in relationship-specific attachment security. In Study 3, insecure

individuals on average experienced worse relationship wellbeing outcomes across the transition to parenthood. These declines were slightly steeper for insecure individuals who experienced larger fluctuations in attachment security, but they were not any worse than insecure individuals who experienced smaller fluctuations. It is possible that greater fluctuations undermine the relationship wellbeing of insecure individuals only during chronically stressful transitions when having a stable, reliable relationship partner is vital, such during as the transition to parenthood. This speculation is consistent with research indicating that stressful contexts tend to activate attachment working models, even in people who have learned to cope with stressful situations or difficult events (see Mikulincer, Shaver, & Berant, 2013; Simpson & Rholes, 1994, 2012).

In general, however, the results show that within-person variation (fluctuations) in attachment security do not play as strong a role in affecting relationship wellbeing among insecure individuals. This might stem from the fact that anxious and avoidant people are more accustomed to their relationships being unstable and unpredictable. If so, fluctuations in the level of security would be a normal feature of their relationships, perhaps leading insecure individuals to find ways to adjust to or cope with even large fluctuations across time. The expectations of unpredictable, unstable relationships that most insecure individuals hold is consistent with their larger average levels of within-person variation in attachment security documented in the current studies and with research showing that insecure individuals experience greater within-person variation in both relationship satisfaction, relationship quality, and perceptions of partners' commitment (Arriaga, 2001; Arriaga et al., 2006; Cooper et al., in press).

However, this does not imply that greater attachment insecurity or expectations that one's relationship will be unstable serve as 'protective factors' against large fluctuations in attachment security. Indeed, previous research has documented the robust impact that high levels of attachment anxiety or attachment avoidance have on undermining relationship satisfaction and generating greater relationship distress compared with more securely attached individuals (see Hadden et al., 2014; Mikulincer & Shaver, 2016). In fact, this may provide another explanation for why greater fluctuations in attachment security did not dramatically reduce insecure individuals' relationship wellbeing—there may have been less room for their relationships to deteriorate. Taken together, the current results indicate that insecure individuals do generally experience lower levels of relationship wellbeing, but their wellbeing is less affected by within-person variation in attachment security compared with secure individuals.

### Implications, Caveats, and Future Directions

This research provides the first evidence of the relational consequences of within-person variation (fluctuations) in *relationship-specific* attachment anxiety and attachment avoidance across time. These findings build on previous research that has demonstrated the prevalence of within-person variation in attachment security across different attachment figures (La Guardia et al., 2000; Overall et al., 2003; Sibley & Overall, 2008, 2010), global attachment (Davila et al., 1997), and relationship-specific attachment (Fraley et al., 2011; Hudson et al., 2014). Thus, the current results add to

the literature by demonstrating that the attachment system is flexible and dynamic with regard to *specific* attachment figures (e.g., one's current romantic partner). Extending the current literature, our work reveals that fluctuations in attachment security can be detrimental when they occur over extended time periods, especially for securely attached persons, who anticipate relationship stability. These novel findings replicated across two multiwave longitudinal studies, they appear to be generalizable across different types of relationships (exclusive and nonexclusive sexual relationships and more committed marriages), different relationship transitions (from relatively casual nonmonogamous relationships to exclusive relationships, and during the stressful transition to parenthood), they are consistent across relationship-specific attachment anxiety and avoidance, and we ruled out the possibility that these effects could be driven by tumultuous personal and interpersonal environments (e.g., number of sexual partners, fluctuations in depressive symptoms, or negative relationship behaviors), personal and interpersonal vulnerabilities that might put some secure individuals at risk of greater fluctuations (e.g., depressive symptoms and history of family distress), or insecure partners that may also undermine individuals' relationship wellbeing.

Would we see the same effects in regard to within-person fluctuations in *global* attachment? Greater fluctuations in global attachment are likely to be detrimental for more global evaluations about close others. However, the impact of greater fluctuations in global attachment on relationship satisfaction toward a specific attachment figure might not be as strong or proximal compared with the associations between within-person fluctuations in *relationship-specific* attachment and relationship satisfaction. Of course, the opposite might also be true: Greater fluctuations in global attachment could have a more robust influence on any intimate relationship (e.g., satisfaction with romantic partners, parents, friends etc.) because global attachment security reflects broader and more holistic expectations about close others. Examining how changes in global attachment influence more specific relationships, therefore, is an important avenue for future research.

Notably, these findings also have important theoretical implications for how we understand changes in global attachment security. Although some prior research has suggested ways to reduce attachment anxiety or attachment avoidance (e.g., Overall & Simpson, 2015; Simpson & Overall, 2014), the current research indicates that the 'ebbs and flows' that naturally exist in relationship-specific attachment security might open new avenues to better understand how fluctuations in relationship-specific attachment lead to changes in more global attachment orientations, including how slowly or quickly these changes occur (see Fraley et al., 2011 and Fraley & Brumbaugh, 2004, for an in-depth discussion). For example, if individuals who have secure global attachment orientations experience large fluctuations in relationship-specific attachment security across extended periods of time, such experiences might eventually shift their global orientations in the direction of greater insecurity, with the specific form of insecurity (anxious or avoidant) depending on how their partners act toward them. Conversely, if individuals who have insecure global attachment orientations encounter small or few fluctuations in relationship-specific attachment security and/or their partners become more supportive, these expe-

riences may shift their global orientations toward greater security. Such shifts would be consistent with the interdependence theory notion of comparison levels, or standards that adapt to changing interpersonal experiences over time (Arriaga, 2013; Rusbult, Arriaga, & Agnew, 2001).

The current research also has some noteworthy practical implications. Couples' therapy has been heavily influenced by attachment theory given the strong influence of attachment anxiety and avoidance on therapeutic and relationship processes (see Mikulincer et al., 2013). Some of the most promising forms of therapy strive to enhance security in intimate relationships using emotion-focused therapy techniques (Johnson, Lafontaine, & Dalgleish, 2015). The current research also suggests the importance of *stabilizing* the relationship environment (see Overall & Simpson, 2015). This may be especially important for secure partners, who often may not be the primary focus of couple therapy, but for whom turbulent relationship environments can be particularly harmful. Thus, the success of couples' therapy might be improved by bolstering the stability of responsive care and support in intimate relationships.

The current research has some limitations. We examined the underlying assumption regarding why greater within-person fluctuations should harm relationship wellbeing more in secure than in insecure individuals—because fluctuations violate the expectations that secure people have about relationship stability and consistency. However, we examined relationship stability expectations in one study (Study 1) and then conducted tests of relationship-specific within-person variation in attachment security in the other studies (Study 2 and Study 3). Because of this, we could not directly test whether violating expectations of relationship stability (i.e., creating relational doubt and uncertainty) mediates the negative consequences of greater fluctuations in attachment security. Other research, however, has documented similar mediation patterns with different types of fluctuations and outcomes (see Whitton et al., 2014). Nevertheless, future research should directly test the specific mechanisms that drive the negative consequences of greater within-person variation in attachment security. Although we explored some personal and relationship factors that may contribute to such fluctuations, we did not find much evidence to explain why people experience greater fluctuations in attachment security. Future research should also identify the key antecedents of within-person variation in attachment security.

## Conclusions

Despite the fact that attachment security is relatively stable over time, individuals do experience significant within-person variation in attachment security with different attachment figures. The current research extends the attachment and relationship literature by offering evidence that individuals do experience significant within-person variation in attachment anxiety and avoidance toward a *specific* attachment figure across time—their intimate partner. Furthermore, greater fluctuations in relationship-specific attachment lead to lower relationship satisfaction and greater relationship distress across time, but mainly among secure individuals, who believe their relationships will remain stable and consistent over time. These novel findings highlight the need to better understand and model the 'ebbs and flows' of the attachment

system, especially within-person variation (fluctuations) in attachment security.

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