For many people, the satisfaction experienced at the start of a relationship is difficult to maintain. Divorce rates in numerous industrialized countries hover between 30% and 50% (Amato & James, 2010; Schoen & Canudas-Romo, 2006), and many of the spouses in marriages that remain intact experience declines in relationship satisfaction (Karney & Bradbury, 1997; Meltzer, McNulty, Jackson, & Karney, 2014). Although a variety of distal factors are known to account for relationship satisfaction (for reviews, see Finkel, Simpson, & Eastwick, 2017; Karney & Bradbury, 1995; McNulty, 2016), the proximal mechanisms that directly drive change in relationship satisfaction remain unclear.

Most models of close relationships implicate the behavioral exchanges that occur between partners as the most proximal source of relationship satisfaction (e.g., Jacobson & Margolin, 1979; Karney & Bradbury, 1995; Kelley et al., 1983). In their classic work, for example, Kelley et al. (1983) argued that the behavioral exchanges that occur between partners not only define the relationship but also are the primary mechanism through which partners shape one another’s cognitive and affective outcomes. From this theoretical perspective, any declines in satisfaction should result from changes in the behaviors that the two partners exchange over time.

Nevertheless, studies have failed to provide evidence that changes in behaviors reliably predict changes in satisfaction.
relationship satisfaction. Behaviors tend to be relatively stable over time despite average declines in relationship satisfaction, and even the changes in behavior that do occur do not reliably account for changes in relationship satisfaction (e.g., Huston, Caughlin, Houts, Smith, & George, 2001; Lavner, Bradbury, & Karney, 2012; Lavner, Karney, & Bradbury, 2016; Williamson, Altman, Hsuueh, & Bradbury, 2016). For example, Huston et al. (2001) reported that although marital satisfaction declined over the first 13 years of marriage, behavior did not appear to get more negative on average and between-persons differences in negativity change did not account for changes in satisfaction. Likewise, Lavner et al. (2016) reported that changes in behavior over the first 3 years of marriage did not reliably predict changes in relationship satisfaction over that same interval.

Perhaps most notably, Williamson et al. (2016) recently reported that although a behavioral marital intervention involving 1,034 couples successfully improved communication behavior for some couples, such improvements did not predict improvements in relationship satisfaction.

The fact that satisfaction changes independently of changes in direct experiences with a partner is troubling for existing theories of relationships and corresponding interventions. Indeed, Lavner et al. (2016) specifically noted that their findings “raise important doubts about theories and interventions that prioritize couple communication skills as the key predictor of relationship satisfaction” (p. 680). In the next section, we attempt to explain the unreliable effects of behavior on changes in relationship satisfaction by drawing on models of implicit social cognition to argue that the affect automatically associated with the partner, which can originate from experiences both involving and not involving the partner, is a more proximal and thus reliable mechanism of change in relationship satisfaction than is behavior.

### Automatic Affective Partner Associations

At a conceptual level, satisfaction with a relationship is an evaluation of, or attitude toward, one’s partner or relationship. According to models of implicit social cognition (e.g., Fazio & Olson, 2014), the starting place for any such evaluation is the attitude activated immediately and automatically when encountering the attitude object (e.g., one’s partner). Such automatic attitudes can be described as simple associations in memory between objects and their evaluations (e.g., “my partner—good”; Fazio, 2007). The power of these attitudes is telling; attitudes characterized by stronger automatic object-evaluation associations have greater power to guide attention toward the attitude object, construal and categorization of it, and approach-avoidance responses toward or away from it, all without deliberation (Fazio & Olson, 2014). Given sufficient motivation to respond otherwise, deliberative processes can sometimes steer responses away from those implied by one’s automatic attitude; however, such processing requires cognitive resources, and over the course of a long-term relationship, those resources are inevitably depleted at times (see McNulty & Olson, 2015). It is thus not surprising that several longitudinal studies demonstrate that automatic partner attitudes reliably predict changes in relationship satisfaction and relationship dissolution over time (e.g., Lee, Rogge, & Reis, 2010; McNulty, Olson, Meltzer, & Shaffer, 2013; Scinta & Gable, 2007).

Moreover, automatic partner attitudes also appear to be more responsive to the behavioral exchanges that occur between partners than is self-reported relationship satisfaction. Automatic attitudes are formed as people encode positive and negative affective associations from direct experiences with an attitude object (Fazio, Lenn, & Effrein, 1984; Fazio, Zanna, & Cooper, 1978; Hicks, McNulty, Meltzer, & Olson, 2016; McNulty, Baker, & Olson, 2014; Murray, Holmes, & Pinkus, 2010). In studies of relationships, for example, automatic partner attitudes became more negative as a result of increased conflicts with the partner (Murray et al., 2010) and more positive as a result of increased sexual experiences with the partner (Hicks et al., 2016). Critically, the behavioral exchanges assessed in these studies were not directly associated with changes in self-reported marital satisfaction, consistent with the research described earlier on the unreliable link between changes in behavior and relationship satisfaction (e.g., Huston et al., 2001; Lavner et al., 2012; Lavner et al., 2016; Williamson et al., 2016). Accordingly, behaviors may shape relationship satisfaction only indirectly by altering the valence and strength of automatic affective partner associations. Consistent with this idea, previous research has shown that automatic affective partner associations, unlike partner behavior, do appear to become more negative over time (McNulty et al., 2014).

Although direct behavioral experiences with the partner are one source of automatic partner attitudes, these attitudes have other important sources that can explain how they may change even while partner behavior remains stable. First, specific experiences with an attitude object are weighted by various cognitive and motivational factors that alter the strength of the affective associations (Gawronski, Balas, & Creighton, 2014; Gawronski & Bodenhausen, 2006; Rydell, McConnell, Mackie, & Strain, 2006). For example, two people with the same experience (e.g., the partner is late for dinner) may make different attributions for the event (see Bradbury & Fincham, 1990), which can determine how the experience is integrated into the existing automatic partner attitude. Thus, any changes in these cognitive processes could directly alter the effects of behavior on affective partner associations, even if the behavior itself does not change.

Second, and more relevant to the existing investigation, partner attitudes may also become more negative
independently of behavioral exchanges through exposure to affect unrelated to the partner. As relationships develop, stressors inside and outside the relationship, such as having children or financial difficulties, afford myriad opportunities to experience negative affect. Indeed, declines in marital satisfaction are associated not only with having children (Twenge, Campbell, & Foster, 2003) but also with stress external to the relationship (Karney & Bradbury, 1995; Neff & Karney, 2017). Psychologists have long known that misattribution processes can lead affect from one source to become associated with a different source (e.g., Forgas, 2001; Schwarz & Clore, 1983), including a relationship partner (Dutton & Aron, 1974; Forgas, Levinger, & Moylan, 1994), and recent research on evaluative conditioning indicates such processes can create or strengthen valenced associations involving various objects (Hofmann, De Houwer, Perugini, Baeyens, & Crombez, 2010; Jones, Olson, & Fazio, 2010). In other words, simple associations between the partner and unrelated positive or negative affect may alter automatic partner attitudes even in the absence of systematic changes in the partner’s behavior or related cognitions. The current research directly tested this possibility.

The Current Research

If our theoretical perspective is correct, and changes in automatic affective partner associations can lead to changes in relationship satisfaction even in the absence of changes in partner behavior, or perceptions thereof, then associating the partner with positive affect from sources unrelated to the partner without directly targeting behavior or even perceptions of behavior should enhance the overall automatic evaluation of the partner. Further, prior findings (e.g., McNulty et al., 2013) suggest that such automatic evaluations should, with time, lead to downstream changes in relationship satisfaction. If existing theoretical perspectives (e.g., Jacobson & Christensen, 1996; Jacobson & Margolin, 1979; Karney & Bradbury, 1995; Kelley et al., 1983) are correct, in contrast, and changing relationship satisfaction requires targeting the behavioral exchanges that occur between partners, or at least perceptions or evaluations of those behaviors, then associating the partner with unrelated affect without altering actual or perceptions of partner behavior should prove fruitless.

We directly addressed this issue by employing an experimental evaluative-conditioning procedure that associated the partner with affect from independent sources. Evaluative conditioning, which operationally resembles Pavlovian conditioning, involves contiguous pairings of an attitude object, or conditioned stimulus (CS; e.g., one’s partner) with valenced unconditioned stimuli (USs; e.g., positive words or images). Indeed, evaluative conditioning has been used to create object-evaluation associations in memory that are capable of automatic activation (Olson & Fazio, 2001), including those involving a partner (see Murray et al., 2011).

Method

Participants

We recruited 144 married couples from in and around Tallahassee, Florida. Given the repeated measures nature of the design, we believe this moderate sample size afforded ample power, and we were limited by our funding. Participants were told that the purpose of the study was to evaluate a computerized intervention designed to enhance marital evaluations and that they may or may not be in the experimental group. Given the priorities of our funding agency, eligibility required that participants be married less than 5 years and under the age of 40. On average, husbands were 28.72 (SD = 4.38) years old, and wives were 27.87 (SD = 4.70) years old; 73% of husbands and 78% of wives self-identified as Caucasian; 13% of husbands and 9% of wives reported having been married previously; and 42% of couples reported having children.

Procedure

Prior to being randomly assigned to experimental group, both members of the couples completed three standard measures of explicit relationship satisfaction online. At a lab session several days later, but also before group assignment, both members of the couples were photographed from nine different perspectives (five smiling and four neutral expressions) and then completed an evaluative-priming measure of their automatic attitudes toward their partner. Next, each couple was randomly assigned to one of two experimental groups, each of which required both members of the couple to separately complete an evaluative-conditioning session (described in the next section). Couples were then instructed to separately complete the same evaluative-conditioning procedure online at home once every 3 days for 6 weeks.

On the day of a conditioning session, each member of the couple was separately e-mailed a link to the procedure and instructed to complete it before noon the next day. Couple members were also instructed to separately complete the same evaluative-priming assessment of their automatic partner attitudes and the same measures of explicit marital satisfaction online once every 2 weeks for the next 8 weeks, leading the final assessment to be completed 2 weeks after the intervention had ended. Links to these assessments were e-mailed separately from the e-mails containing links to the evaluative-conditioning sessions, and most assessments were completed on
different days than the evaluative-conditioning sessions. Couples were paid $50 for the initial lab sessions, $5 for each evaluative-conditioning session each partner completed, and $15 for each follow-up assessment each partner completed.

**Measures**

**Evaluative conditioning.** Each evaluative-conditioning session was framed as a “surveillance task” that required spouses to view a stream of images and words on a computer monitor and to press the space bar whenever a prespecified, relationship-relevant target image appeared (e.g., a wedding cake, a couple holding hands). Searching for the target focused participants’ attention and disguised experimental group (by appearing to be the intervention). Embedded in the stream of stimuli were critical pairings of photos of the partner (the CS) and various US images (e.g., a puppy, a sunset) and words (e.g., “wonderful,” “fabulous”). CSs were the five smiling photos of the partner taken at the lab session.

Each evaluative-conditioning session consisted of five blocks of 45 trials each. Each 45-trial block involved 62 stimuli—five targets, 32 neutral fillers (e.g., a straw, a button), 15 blank screens, five USs, and five CSs. The five USs always appeared simultaneously with the five CSs; three targets appeared alone, and two targets were paired with a filler. Ten trials involved fillers presented alone, and 10 involved two fillers paired together. Five of the blank screens appeared randomly, and, to encourage CS-US encoding, we programmed the other 10 blank screens to immediately precede and follow CS-US pairings. All other stimuli were presented in random order. Thus, each session involved viewing 225 trials involving 310 stimuli that included 25 critical pairings of the partner with a US. Approximately half of the targets, fillers, and USs were words, and half were images. To ensure that participants did not habituate to the USs, we selected 75 USs (39 images, 36 words) and distributed them randomly across the 13 sessions. Targets varied from session to session. All stimuli appeared for 1.5 s each. Sessions took approximately 6 to 7 min each to complete.

Participants in the experimental group always viewed photos of the partner paired with positive stimuli, and participants in the control group always viewed photos of the partner paired with neutral stimuli. For the image stimuli, the 39 most positive and 39 most neutral images were selected from a pilot study in which 100 Mechanical Turk workers evaluated 55 positive and 55 neutral images on a scale from 1, negative, to 7, positive. The mean for the positive images ranged from 5.93 ($SD = 1.12$) to 6.43 ($SD = 0.75$); the mean for the neutral images ranged from 3.74 ($SD = 0.87$) to 4.32 ($SD = 0.79$).

**Automatic partner attitudes.** We assessed automatic partner attitudes using a standard implicit measure—an evaluative-priming task (Fazio, Jackson, Dunton, & Williams, 1995; see McNulty et al., 2013). This task required spouses to indicate as quickly as possible the valence of positive and negative target words after being exposed to 300-ms primes of their partner and various controls, including their own image and that of several opposite-sex strangers. Primes of the partner were the four neutral-expression photos taken at the session and not used in the evaluative-conditioning sessions; thus, any effects of the evaluative-conditioning procedure on automatic partner attitudes are not a result of conditioning effects to specific photos. After a baseline block that involved a neutral prime (a row of asterisks), spouses completed two blocks of 48 trials each (eight positive and eight negative target words following each of the three priming categories—partner, self, and strangers). We assessed the time taken for participants to indicate the valence of the target words. We followed common recommendations for data management (Wentura & Degner, 2010), excluding (a) responses that were either slower than 2,000 ms or faster than 300 ms, (b) responses that were inaccurate, and (c) automatic-attitude scores that were more than 3 standard deviations from the mean.

As expected, participants were accurate in their categorizations (accuracy ranged from 94.35% to 96.55% for the experimental group and from 94.62% to 97.43% for the control group). We formed an index of spouses’ automatic attitudes toward their partner by subtracting the average response latencies to the positive words that followed partner primes from the average response latencies to the negative words that followed partner primes; more-positive scores indicate more-positive attitudes. We also formed an equivalent index of spouses’ automatic attitudes toward themselves as a control and discriminating dependent variable.

**Explicit marital satisfaction.** We assessed spouses’ explicit marital satisfaction using three standard measures. One measure was the Quality Marriage Index (Norton, 1983), which contains six items that require spouses to indicate the extent of their agreement with general statements regarding the quality of their marriage. The second measure was a 15-item version of the semantic differential (Osgood, Suci, & Tannenbaum, 1957) that requires spouses to rate their perceptions of their relationship on 7-point scales that have opposing adjectives at each end point (e.g., “Dissatisfied-Satisfied”). The third measure was the Kansas Marital Satisfaction Scale (Schumm et al., 1986), which contains three items that require spouses to indicate the extent of their agreement with general statements regarding the quality of their marriage. Internal consistency of all measures was high (coefficient $\alpha$s > .94). We report
raw scores for these measures in Table 1, though for the primary analyses, we standardized each measure and then averaged across the three of them ($r$s = .88–.91) to create an index of overall explicit marital satisfaction. Higher scores indicate higher satisfaction.

**Guess regarding condition.** At the final assessment, all participants were asked to guess whether they were in the experimental group or control group, or to report that they did not know; 233 of the 242 participants who completed this assessment answered this question.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Time of assessment</th>
<th>Baseline</th>
<th>Two weeks</th>
<th>Four weeks</th>
<th>Six weeks</th>
<th>Eight weeks</th>
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<td>41.58</td>
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<td>17.86</td>
<td>18.21</td>
<td>18.74</td>
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</table>

Note: For the two attitude measures, higher scores indicate more-positive attitudes. For the remaining three measures, higher scores indicate higher marital satisfaction.
Results

Spouses completed an average of 11.66 (SD = 2.62) of the 13 evaluative-conditioning sessions. Completion rates did not differ between groups, t(142) = 0.24, p > .25. We excluded 1 wife in the control group who consistently failed to press the space bar in response to targets in the evaluative-conditioning sessions and 1 husband in the experimental group who made errors on 50% of his trials at baseline. Ten husbands (5 in the control group and 5 in the experimental group) and 6 wives (3 in the control group and 3 in the experimental group) did not complete any follow-up automatic-attitude assessments, which left a total of 270 individuals for the primary analyses. Two separate two-level analyses that accounted for the non-independence of couple-members’ data indicated that neither automatic partner attitudes, t(140) = −0.68, p > .25, nor explicit marital satisfaction, t(141) = 0.50, p > .25, differed between the experimental and control groups at baseline. Descriptive statistics of partner attitudes and raw marital-satisfaction scores appear in Table 1.

To test whether the evaluative-conditioning procedure was effective in changing automatic partner attitudes, we capitalized on the repeated assessments of spouses’ automatic attitudes by estimating a fully random two-level model in which repeated reports were nested within individuals, dyad members were estimated separately and simultaneously with separate intercepts, and all estimates were pooled across participant sex. The four assessments of automatic partner attitude that occurred after intervention onset were regressed onto time of assessment and reaction time to the neutral primes (both grand-mean centered) in the first level of the model (as covariates) and group in the second level of the model, along with own initial automatic partner attitudes and reaction time to neutral primes assessed at baseline (as covariates).

The effect of group was significant, b = 7.11, SE = 3.33, t(133) = 2.14, p = .034, which indicates that couple members in the experimental group (who viewed their partners paired with positive stimuli) exhibited more-positive automatic partner attitudes after the intervention than did couple members in the control group (who viewed their partners paired with neutral stimuli). This effect was not moderated by time of assessment, b = −0.08, SE = 2.67, t(133) = −0.03, p > .25, and did not vary in strength across the four assessments, all ps > .25. In fact, the experimental group demonstrated more-positive automatic partner attitudes than the control group at the fourth and final assessment, which occurred 2 weeks after the intervention ended, though this effect was only marginally significant, b = 11.46, SE = 6.22, t(133) = 1.84, p = .068.

The primary effect also held when we controlled for participants’ guess regarding their group assignment, b = 8.88, SE = 3.52, t(108) = 2.52, p = .013, and was not moderated by the accuracy of their guess, b = 4.66, SE = 6.67, t(107) = 0.70, p > .25. The effect also was not moderated by initial automatic partner attitudes, b = −2.01, SE = 3.62, t(131) = −0.56, p > .25, or initial explicit marital satisfaction, b = 4.98, SE = 3.88, t(126) = 1.28, p = .202. However, it was moderated by the number of evaluative-conditioning sessions each spouse completed, though this effect was only marginally significant, b = 12.99, SE = 7.26, t(131) = 1.79, p = .076; spouses who completed more sessions experienced a marginally stronger effect of group.

Finally, to help rule out the alternative interpretation that the positive images viewed by couple members in the experimental group created a general and lasting sense of positive affect that accounted for their more-positive automatic partner evaluations (compared with the control group), we examined whether a similar effect emerged for automatic self-attitudes; it did not, b = 0.32, SE = 3.35, t(133) = 0.10, p > .25, and the effect of group on partner attitudes remained significant after we controlled for automatic self-attitudes, b = 6.87, SE = 3.38, t(133) = 2.03, p = .044. Notably, automatic self-attitudes were positively associated with automatic partner attitudes in this latter analysis, b = 0.08, SE = 0.03, t(131) = 2.46, p = .015, which is consistent with prior research (McNulty et al., 2014).

Consistent with our theoretical argument that changes in automatic partner attitudes are a proximal mechanism of change in relationship satisfaction, our expectation was that more-positive automatic partner attitudes would be positively associated with changes in explicit reports of marital satisfaction. We thus examined whether spouses’ newly augmented automatic partner attitudes predicted changes in their self-reported marital satisfaction by estimating another fully random two-level model. We regressed the index of self-reported marital satisfaction from each assessment onto an intercept and time of assessment (uncentered) in the first level of the model. Then in the second level of the analysis, we examined whether the estimates of initial self-reported marital satisfaction (i.e., the intercept) and changes in self-reported marital satisfaction (i.e., the slope) were associated with the average of each spouse’s automatic partner attitudes (as measured in the four assessments that occurred after baseline), controlling for participants’ average of their reaction times to the neutral primes over the four assessments, their automatic partner attitudes and reaction times to neutral primes at baseline, and group. The association between the average of the automatic partner attitudes and changes in satisfaction (i.e., the Time × Average Automatic Partner Attitude interaction) estimated the extent to which automatic partner attitudes predicted changes in self-reported marital satisfaction over the course of the study.
A model with no Level 2 predictors indicated that spouses experienced improved marital satisfaction over the duration of the study, on average, \( b = 0.08, SE = 0.01, t(130) = 6.22, p < .001 \). Nevertheless, consistent with predictions, a significant Time × Automatic Partner Attitudes interaction indicated that individuals’ automatic partner attitudes accounted for a significant portion of variance in these changes, \( b = 0.03, SE = 0.01, t(125) = 2.36, p = .020 \); that is, spouses who demonstrated more-positive automatic partner attitudes during the intervention reported greater improvements in explicit marital satisfaction over the course of the study.

We used the results of these analyses to construct a mediation model to examine the influence of evaluative conditioning on relationship satisfaction through automatic partner attitudes (see Fig. 1). The two primary effects—the effect of the intervention on automatic partner attitudes estimates (path \( a \)) and the effect of automatic partner attitudes on changes in marital satisfaction controlling for the intervention estimates (path \( b \))—comprised the indirect effect of the evaluative-conditioning intervention on changes in explicit marital satisfaction. We used the RMediation tool (Tofighi & MacKinnon, 2011) to estimate this indirect effect, \( b = 0.21, SE = 0.13 \), which was significant, 95% confidence interval = [0.01, 0.50]. That is, the evaluative-conditioning intervention indirectly improved explicit marital satisfaction by directly improving automatic partner attitudes.

**General Discussion**

Existing models of close relationships posit that the behavioral exchanges that occur between partners are the most proximal source of relationship satisfaction (e.g., Jacobson & Margolin, 1979; Karney & Bradbury, 1995; Kelley et al., 1983). In contrast to this perspective, we were able to change people’s satisfaction with their relationships without directly altering couples’ behaviors or even interpretations of those behaviors; instead, we demonstrated that sources of affect unrelated to the partner can lead to changes in marital satisfaction by becoming associated with the partner implicitly. These findings help explain how relationship satisfaction can change over time even while behavioral exchanges involving the partner do not (Huston et al., 2001; Lavner et al., 2012; Lavner et al., 2016; Williamson et al., 2016).

That said, we do not argue that behavior is unimportant. In fact, behavioral exchanges involving the partner are a primary source of automatic affective partner associations (Hicks et al., 2016; Murray et al., 2010), and one way such associations eventually predict self-reported satisfaction is by shaping behavior and subsequent automatic and explicit evaluations. Although people can override their automatic attitudes with sufficient motivation and effort, rendering automatic attitudes unrelated to explicit satisfaction at any one point in time, the resources required to do so will inevitably be depleted at times over the course of a close relationship, which can allow automatic attitudes to shape relationship functioning over time (see McNulty & Olson, 2015). Further, as the current research suggests, the very sources that deplete cognitive resources, most notably stress (see Neff & Karney, 2017), may simultaneously lead directly to more-negative affective partner associations. Accordingly, one fruitful avenue for future research is to understand the precise mechanisms through which experiences related and unrelated to the partner combine to shape automatic partner associations. As existing theory suggests, it is likely that such mechanisms involve both automatic and deliberative components. Specifically, various deliberative factors, such as reappraisals, likely alter the strength with which experiences related to the partner shape automatic attitudes (Gawronski & Bodenhausen, 2006), and various automatic factors, such as misattribution, likely associate the partner even with affective experiences unrelated to him or her (Dutton & Aron, 1974; Forgas et al., 1994).
The theoretical implications of the current work also extend to research on attitude change more generally. The overwhelming majority of attitude-change studies are in fact studies of attitude formation in that they tend to be designed to create new evaluations of novel (and typically unimportant) objects. Few studies examine attitude change over time (though see Kumkale & Albarracín, 2004), and still fewer have shown changes to preexisting attitudes, particularly through low-thought approaches such as evaluative conditioning (though see Olson & Fazio, 2006). To our knowledge, no study has done both; that is, as far as we are aware, this is the first experimental study to demonstrate sustained attitude change toward a well-known object using a low-thought approach such as evaluative conditioning. Thus, the present work represents a step toward documenting how attitudes slowly evolve over time through passive exposure to attitude-object-relevant information. And numerous theories suggest they do. For example, prejudice is argued to come about partly through unintentional encoding of biased depictions of minorities in the media (Weisbuch, Pauker, & Ambady, 2009). Nevertheless, most studies of the effects of such depictions on social attitudes do not embody media exposure’s recurrent nature, and we were unable to locate any experimental studies tracking attitude change over time after such exposure. Thus, compared with previous work on attitude change, the present study more fully captures the ecological reality of pervasive, systematic, and passive exposure to valenced associations and how such associations shape attitudes toward meaningful objects over time.

Given these important theoretical contributions, the current research also suggests important directions for new research, particularly in clarifying the underlying mechanism responsible for the effects reported here. Scholars have identified several mechanisms through which evaluative conditioning produces attitude change, some requiring awareness of the CS-US pairings and deliberate, thoughtful responses to them (i.e., a propositional account) and others requiring neither awareness nor careful thought (i.e., a misattributional account; Jones et al., 2010). According to a propositional account, viewing one’s spouse next to, say, a sunset might have strengthened the belief that one enjoys pleasant activities with one’s partner and thereby strengthened the overall positive attitude toward that partner. According to a misattribution account, in contrast, respondents would not have needed to consciously notice the CS-US pairings or generate supportive beliefs for their attitudes to change. In this case, the positive USs we employed would have simply created or strengthened the association in memory between one’s partner and positivity (“my partner—good”) without the need to generate any supportive beliefs. Future research may benefit from investigating these issues to better identify the underlying learning mechanism (or mechanisms) responsible for the effects reported here.

Finally, our findings highlight the potential practical benefits of techniques directly targeting affective associations involving the partner. We envision three contexts in which such techniques may be particularly likely to benefit relationships. First, such interventions may be particularly beneficial for partners who are physically separated from one another for an extended period. Such couples have limited opportunities to rehearse and build positive associations and may thus benefit the most from strengthening them. Second, such interventions may also benefit couples who are experiencing a loss of passion, feelings of disconnection, or an episode of relationship discord. As noted earlier, research on social cognition has highlighted the fact that affect can shape social perceptions and behaviors in various contexts (Forgas, 2001; Schwarz & Clore, 1983), including relationships (Dutton & Aron, 1974; Forgas et al., 1994), and such procedures may provide the affective boost necessary to help couples overcome the occasional obstacle that is inevitable over the course of a long-term relationship. Finally, such interventions may serve as an effective supplement to marital therapy for distressed couples who need extensive treatment. Indeed, just as pharmacological treatments can effectively supplement cognitive-behavioral therapy (Otto, Smits, & Reese, 2005), enhancing automatic affective associations involving the partner may provide the affective boost necessary to engage in the effortful process of therapy. In fact, given that behavior appears to be one source of automatic partner attitudes (Hicks et al., 2016; Murray et al., 2010), interventions may be most effective to the extent that they target behaviors as well as automatic affective associations.

Of course, it is also important to point out that any practical benefits of such procedures will be achieved only to the extent that they lead to automatic attitudes that fall within the range of values that would be functional in the context of a given relationship. The functional value of any automatic attitude lies in the extent to which it involves positive affect toward objects that confer benefits when approached and negative affect toward objects that confer benefits when avoided (Fazio & Olson, 2003). Accordingly, it would be maladaptive to generally experience positive affect in the presence of a callous partner, or negative affect in the presence of a loving partner (see McNulty, 2016). However, continued experiences with such partners would likely recalibrate one’s attitude to better match one’s experiences. In sum, we suggest that only interventions leading to affective partner associations that fall within a plausible range of actual positive and negative experiences with the partner will be effective. That said, because perceptions and
experiences with any object are flexible and subject to construal processes, there is likely to be a relatively wide range of values that could be functional with respect to any particular partner.

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Author Contributions
J. K. McNulty helped develop the idea for this study, oversaw data collection, analyzed the data, and helped write the manuscript. M. A. Olson helped develop the idea for the study and write the manuscript. R. E. Jones and L. M. Acosta contributed to data collection and commented on the manuscript.

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The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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