

Effects of self-disclosure and responsiveness between couples on passionate love within couples

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Abstract

Previous work shows that high-self-disclosure interactions between couples can increase feelings of closeness within couples. We investigated whether couple friendships created in the lab through high-self-disclosure and closeness-building activities would boost feelings of passionate love. In Study 1, couples randomly assigned to a high (vs. low) closeness induction task, either alone or with another couple, showed significantly greater increases in passionate love when they were highly self-disclosing with other couples. Study 2 showed that the responsiveness of the other couple mediated the effects of self-disclosure on increases in passionate love following high-self-disclosure interactions with other couples. The creation of couple friendships may be an additional way to reignite feelings of passionate love in romantic relationships.

Although the love a couple shares is primarily a bond between two individuals, romantic relationships are nested within a larger network of social relations. These relations are crucial in shaping and maintaining romantic relationships (Agnew, Loving, & Drigotas, 2001; Milardo, 1982; Sprecher, Felmlee, Orbuch, & Willetts, 2002). Social networks allow relationships to change and can provide support for couples (for a review, see Sprecher et al., 2002). Additionally, couples with a larger number of shared friends have more positive and

enduring relationships (Agnew et al., 2001; Milardo, 1982; Sprecher et al., 2002).

Recent work extending these findings shows that the creation of couple friendships in the lab through activities involving high levels of self-disclosure can increase closeness between romantic partners relative to pairs of couples in a low-self-disclosure control group (Slatcher, 2010). The process of forming an interpersonal bond with another couple may increase closeness for multiple reasons. First, close interactions between couples allow couples to self-disclose, or reveal information, thoughts, and feelings about themselves to one another (Collins & Miller, 1994; Greene, Derlega, & Mathews, 2006; Laurenceau, Barrett, & Pietromonaco, 1998). Self-disclosure is an important factor for engendering closeness (e.g., Aron, Melinat, Aron, Vallone, & Bator, 1997; Derlega, Metts, Petronio, & Margulis, 1993) and for creating relationship satisfaction in couples (Laurenceau et al., 1998), and is considered a principal factor in intimacy processes (Laurenceau, Rivera, Schaffer, & Pietromonaco, 2004; Reis & Shaver, 1988).

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This concept is in part based on self-expansion theory (Aron & Aron, 1986, 1996; Aron, Aron, & Norman, 2004), which holds that as individuals self-disclose and become close to each other, their self-concepts expand to include each other.

Additionally, high-self-disclosure interactions also allow couples to respond positively and validate the other couple's thoughts and feelings. Responsiveness, or the extent to which people empathically validate others' thoughts and feelings, is an important determinant of relationship outcomes (Reis & Patrick, 1996; Reis & Shaver, 1988), and is thought to be an important core organizing principle for romantic relationships (Reis, 2012). When individuals are responsive to each other, they believe that both partners supportively attend and react to central defining features of each other's selves (Reis & Clark, in press; Reis, Clark, & Holmes, 2004). In being responsive, individuals effectively address the needs, wants, actions, and disclosures of others they interact with (Miller & Berg, 1984).

Close interactions between couples may also improve relationship outcomes within couples by presenting a novel, positive experience for romantic partners. Broadly, novel, positive experiences are important for boosting passionate love and relationship satisfaction (Aron, Norman, Aron, McKenna, & Heyman, 2000; Coulter & Malouff, 2013; O'Leary, Acevedo, Aron, Huddy, & Masek, 2012; Strong & Aron, 2006). In part, these increases in perceived relationship quality from novel, positive experiences are due to increases in positive affect (Aron et al., 2000; Coulter & Malouff, 2013; Slatcher, 2010; Strong & Aron, 2006). Slatcher (2010) showed that the formation of a bond between two couples in the lab is a novel and positive activity that leads to increases in feelings of closeness to one's own romantic partner and that this effect is at least in part mediated by increases in positive affect.

Despite showing that the creation of friendships between couples can increase intimacy within couples, there are questions that remain to be answered from emerging research on dual-couple interactions (Slatcher, 2010). It is important to examine whether close, positive

interactions within and between couples can affect relationship outcomes other than closeness. We argue that close, positive interactions between couples can also increase passionate love, or "a state of intense longing for union with another" (Hatfield & Walster, 1978, p. 9). The finding that close interactions between couples could increase passionate love is an important one, as meta-analytic evidence suggests that passionate love and love in general tend to decrease over time in relationships (Graham, 2011). Despite this decline, a small, but growing body of research suggests that for a subset of people, passionate love can persist in relationships (Acevedo & Aron, 2009; Acevedo, Aron, Fisher, & Brown, 2011), particularly for couples that share novel and exciting activities (O'Leary et al., 2012). O'Leary and colleagues (2012) report that approximately 40% of U.S. individuals married over a decade still report intense love in their relationships. Thus, although passionate love declines across time for most couples, this decline does not appear to be inevitable for all couples. In fact, previous work suggests that increases in closeness between couples can increase passionate love between individuals (Baumeister & Bratslavsky, 1999; Rubin & Campbell, 2012). Additionally, novel and exciting activities increase positive affect, which in turn leads to increases in perceived relationship quality (Aron et al., 2000; Coulter & Malouff, 2013; Graham, 2008; Strong & Aron, 2006). The formation of an interpersonal bond with another couple, due to its ability to make romantic partners feel close and be a positive, novel experience, may also increase passionate love for romantic partners.

Previous research on predictors of passionate love and relationship satisfaction have focused primarily on processes within couples (e.g., Acevedo & Aron, 2009; Hendrick, 1988; Keelan, Dion, & Dion, 1998; O'Leary et al., 2012), not processes between couples. On a practical level, showing that self-disclosure and responsiveness between couples increases passionate love and relationship satisfaction will give couples a new way to increase their satisfaction and passionate love in their relationship. On a theoretical level, this research

can reveal that positive interactions with others are also important contributors to increases in passionate love and will also shed new light on the larger role of outside friendships for couples. Importantly, this research also could reveal a new way in which responsiveness can affect relationship outcomes: By testing whether responsive interactions with other couples can affect relationship outcomes within couples, the present research extends the understanding of the role of responsiveness as an organizing, unifying principle in relationship research (Reis, 2012) to also connect interactions within couples to how couples interact in a larger network of individuals. Having other individuals responsively validate one's own relationship, self, and romantic partner may positively impact perceptions of one's own relationship and partner, such as increasing passionate love.

Although Slatcher (2010) found that high-self-disclosure interactions between couples increased closeness within couples, it is worthwhile to examine how the intimacy processes of self-disclosure and responsiveness in interactions between couples might affect passionate love. The interpersonal process model of intimacy (Reis & Shaver, 1988) holds that intimacy grows when one person self-discloses and when this self-disclosure is met with another person's validating responsiveness. Thus, the responsiveness of others mediates the effects of self-disclosure on intimacy. In interactions that foster intimacy, as one person reveals emotional, personal information to another, the other person responds in a validating manner, communicating that they understand and support the person self-disclosing. Longitudinal daily diary research reveals that self-disclosure and responsiveness jointly contribute to intimacy and marital satisfaction, whereby the responsiveness of one couple member mediates the effects of another's self-disclosures on the couples' intimacy (Laurenceau, Barrett, & Rovine, 2005). Although research indicates that the joint influence of self-disclosure and responsiveness is important for intimacy and relationship satisfaction within couples, interpersonal processes are not only specific to couples, but embedded in a broader network of social relations

(Agnew et al., 2001; Milardo, 1982; Sprecher et al., 2002), and interpersonal processes with other couples also fosters intimacy between couples (Slatcher, 2010). No research, to this point, has examined how the interpersonal processes of self-disclosure and responsiveness between couples contribute to the feelings of passionate love within couples. Exploring this possibility is both theoretically and practically important.

Overview

The goals of the present research were to investigate whether the formation of a friendship between couples can increase passionate love within couples and also to investigate whether the intimacy processes of self-disclosure and responsiveness are related to feelings of passionate love during interactions with other couples. Based on previous research that novel and arousing activities and high-self-disclosure interactions increase relationship quality, we hypothesized that high-self-disclosure interactions with another couple would increase feelings of passionate love. Additionally, because self-disclosure with one's own romantic partner and one's own partner's responsiveness are positively linked to perceived relationship quality (Laurenceau et al., 1998; Reis & Shaver, 1988), we expected that perceptions of self-disclosure and responsiveness with other couples would be positively related to feelings of passionate love within the couple. We also included measures of relationship satisfaction before and after the interactions to test whether the positive effects of interactions between couples would be specific to passionate love or also extend to satisfaction.

These hypotheses were investigated in two studies. In Study 1, couples were assigned to engage in an interaction designed to elicit high levels of self-disclosure and group cohesion or a low-self-disclosure interaction either alone as a couple or while paired with another couple. This design allowed us to investigate whether this type of interpersonal bonding activity with another couple—not a similar activity with one's own romantic partner or just a small-talk interaction with another couple—leads to increased feelings of passionate love and

relationship satisfaction toward the romantic partner.

In Study 2, we focused on examining the specific effects of responsiveness and self-disclosure with other couples on changes in passionate love within couples. Here, we assigned a larger sample of pairs of couples to have interactions of the type used in Study 1 designed to elicit high levels of self-disclosure and group cohesion. We then statistically modeled the effects of self-disclosure and responsiveness between couples on passionate love and relationship satisfaction within couples. Specifically, in line with the current theorizing on the role of perceived responsiveness (Reis, 2012), we investigated whether perceptions of the other couple's responsiveness mediated the effects of perceived self-disclosure between couples on increases in relationship quality within the couples. We also measured perceived responsiveness of romantic partners, which allowed us to test whether the other couple's responsiveness mediated the effects of perceptions of self-disclosure on increases in passionate love and relationship satisfaction, above and beyond the effects of perceived romantic partner responsiveness.

Study 1

Study 1 utilized a 2×2 experimental design, in which couples were assigned to either engage in an interaction designed to elicit high levels of self-disclosure and group cohesion or a low-self-disclosure task with another couple or alone. Participants completed a pretest measure of passionate love before the experiment and posttest measures of passionate love, relationship satisfaction, and self-disclosure following the experiment.

Method

Participants and design

Participants were 88 couples (50.6% men, 48.9% women)¹ recruited through the

psychology subject pool, flyers around the university, and a Facebook advertisement ($M_{\text{age}} = 23.79$, $SD = 6.28$), who had been dating for at least 1 year (mean relationship length = 2.86 years, $SD = 2.38$). The sample was diverse: 29.7% Black, 40.3% White, 13.7% Indian/Middle Eastern, 4.5% Asian, and 11.3% Other, Multiracial, or unreported. Participants were compensated with an honorarium of \$35 or partial course credit if they were recruited from the psychology subject pool. Couples were randomly assigned to a 2 (fast friends vs. small-talk condition) \times 2 (group composition: alone vs. with another couple) factorial design. Fifteen couples participated in the single-couple fast friends condition and 15 couples participated in the single-couple small-talk condition. Additionally, 15 pairs of couples were assigned to the group small-talk condition and 14 pairs were assigned to the group closeness induction condition. When asked, no couples said they knew the other couple with whom they were paired. One couple was identified by a researcher as not actually being in a relationship and was removed from the analyses.

Procedure and materials

Pretest survey. Before the experimental session, participants completed a brief preliminary online questionnaire assessing demographic information and passionate love. To assess passionate love, participants completed the Eros Scale of Passionate Love (Hendrick & Hendrick, 1986). This scale was chosen due to its relatively short length of seven items, which made it adequate for inclusion in a brief online survey. This scale asks participants to rate the extent to which they agree with statements about their romantic partner, including, "My lover and I really understand each other" and "My lover and I have the right physical 'chemistry' between us" on 5-point scales (1 = *strongly agree*, 5 = *strongly disagree*; Cronbach's $\alpha = .86$, $M = 1.91$, $SD = 0.86$).²

1. The difference in males and female *ns* was due to one couple being a same-sex couple and one participant that did not disclose his or her gender.

2. The pretest also included measures of commitment (Sternberg, 1986) and relationship closeness strength (RCI Strength subscale; Berscheid, Snyder, & Omoto,

Laboratory session. Participants arrived in the lab and were introduced to the other couple they were paired with if they were in the group condition. Regardless of condition, participants completed one discussion-oriented task and a game (see below). Participants in the closeness induction condition engaged in tasks geared to elicit high levels of self-disclosure and played a game of Jenga™, a game where players remove blocks from a tower of blocks, attempting to not let the tower collapse. Participants were also informed that they were competing as a team against all other groups participating in the study for a cash prize of \$50 and were given the opportunity to invent a name for their team. The Jenga™ task was chosen to build solidarity between couples and within couples by having them engage in mutual activities, which would help them feel closer to each other (Wright, Aron, & Tropp, 2002). Participants assigned to the small-talk condition engaged in a nonemotional small-talk task and had to sort shuffled decks of cards. Unlike those in the “fast friends” condition, these participants were told that they would each be entered in a drawing to win \$50.

Closeness induction “fast friends” condition. We had participants complete the closeness induction “fast friends” task developed by Aron and colleagues (1997). In this task, over three 15-min blocks (for a total of 45 min), participants took turns answering questions on slips of paper drawn from an envelope that gradually increased in their required levels of self-disclosure (e.g., “Given the choice of anyone in the world, whom would you want as a dinner guest?” [Block 1], “What is the greatest accomplishment of your life?” [Block 2], “If you could go back in your life and change any one experience, what would it be and why?” [Block 3]). After participants elected a group member to begin the task

and open the slips of paper, the participant opening the slips of paper first read a question, and then each member took a turn answering the question. Once all group members had answered the question, the participant with the slips of paper pulled out another slip of paper from the envelope, and the process repeated. After 15 min passed in each trial, the experimenter entered the room and gave the participants a new envelope of questions, telling participants to finish their current question and then move on to the new questions. After completing all three trials, all participants in the fast friends condition played the Jenga™ game.

Small-talk condition. Participants in the small-talk condition took turns asking and answering nonemotional small-talk questions (e.g., “When was the last time you walked for more than an hour?”) across three 15-min blocks. Following this task, participants engaged in a task where they had to sort shuffled card decks for 15 min. This task was chosen because it was expected to be relatively unexciting, compared to the Jenga™ game.

Posttest measures. Participants were then seated in separate cubicle desks to complete the posttest questionnaires of self-disclosure, passionate love, and relationship satisfaction (in that order).

As a manipulation check, self-disclosure was measured using three self-report items asking participants how much they had disclosed “facts” about themselves, their “thoughts,” and their “feelings” during the experimental session (Laurenceau et al., 1998) on 5-point scales (1 = *very little*, 5 = *a great deal*; $\alpha = .92$, $M = 3.91$, $SD = 1.08$). Participants also completed measures of how novel their experience was and how much knowledge they gained about their partner. Novelty was measured using a 5-item scale (e.g., “This interaction was a very novel experience for my romantic partner and me,” “I’ve never done anything like this with my partner before”) ranging from 1 (*not true*) to 9 (*definitely true*). Due to the acceptable internal consistency of this scale ($\alpha = .74$), these five items were averaged into one measure of perceived novelty

1989). These variables were not included as covariates in the main text because they are not conceptually equivalent to passionate love and relationship satisfaction. However, controlling for these variables did not change the significance of any effects presented in Study 1.

($M = 6.54$, $SD = 1.86$). Participants responded to the question, "To what extent do you feel as though you gained new knowledge about your partner today?" on a 9-point Likert scale (1 = *not at all*, 9 = *a great deal*).

Participants then completed the 15-item short form of the Passionate Love Scale (Hatfield & Sprecher, 1986), which asks participants to indicate their agreement with statements about their partner, including "I sense my body responding when _____ touches me" and "_____ always seems to be on my mind" (1 = *not at all true*, 9 = *definitely true*; $\alpha = .90$, $M = 7.49$, $SD = 1.17$).

Participants also completed the 16-item Couples Satisfaction Index (CSI-16; Funk & Rogge, 2007) as an index of relationship satisfaction. Sample items include, "In general, how often do you think that things between you and your partner are going well?" (answered with a 6-point scale ranging from 0 = *never* to 5 = *all the time*) and "Our relationship is strong" (answered with a 6-point scale ranging from 0 = *not at all true* to 5 = *completely true*). This scale had excellent internal consistency ($\alpha = .95$).

Statistical analyses

Because the groups and couples in our data violated the independence assumption of typical parametric tests, multilevel linear modeling (with SPSS Mixed) was used to analyze our data. We carefully followed the recommendations of Kenny, Kashy, and Cook (2006) for dyadic analysis, but our groups were composed of either two or four members, being either groups of one or two couples. In particular, the analyses used a three-level multilevel model, with individuals nested within couples, which were in turn nested in experimental groups. Fast friends/small talk and group composition were effect coded for all analysis ($-1 = \textit{small talk}$, $+1 = \textit{fast friends}$; $-1 = \textit{one couple}$, $+1 = \textit{pair of couples}$). Type III F tests from multilevel modeling were used for means comparisons. Interactions were probed using the tools provided by Preacher, Curran, and Bauer (2006), which test simple slopes in accordance with the procedures recommended by Aiken and West (1991).

Results

Self-disclosure

As a manipulation check, we investigated whether our experimental manipulations affected levels of self-disclosure with 2 (fast friends/small-talk condition) \times 2 (group composition) factorial multilevel models. There were significant main effects for both the fast friends condition, $F(1, 82.72) = 13.90$, $p < .001$, and group composition, $F(1, 82.72) = 5.44$, $p = .022$, and no significant Fast Friends \times Group Composition interaction, $F(1, 82.72) = .06$, $p = .81$. As expected, participants disclosed more in the fast friends task ($M = 4.29$, $SE = .12$) than in the small-talk task ($M = 3.68$, $SE = .11$), confirming our manipulation check for disclosure. Participants also self-disclosed more when just with their romantic partners ($M = 4.17$, $SE = .13$), compared to the participants in the couple pairs groups ($M = 3.79$, $SE = .10$), which is not surprising, given that there are more opportunities to self-disclose within 45 min for two people compared to four.

Novelty

We then tested to see how novel participants found each condition using a similar 2×2 factorial mixed model. This model revealed that individuals found the small-talk condition to be more novel ($M = 6.75$, $SE = .21$) than the fast friends condition ($M = 6.00$, $SE = .21$), $F(1, 83.00) = 6.33$, $p = .014$, and that the dual-couple condition was perceived as more novel ($M = 6.92$, $SE = .18$) than the individual-couple condition ($M = 5.83$, $SE = .24$), $F(1, 83.00) = 13.36$, $p < .001$.³ However, these main effects were qualified by a significant Group Condition \times Fast Friends Condition interaction, $F(1, 83.00) = 9.43$, $p = .003$, whereby the novelty of the small-talk condition did not differ between individual couples and pairs of couples, $b = .09$,

3. We speculate that the small-talk condition may have been perceived more novel because of the card sorting task. Although participants likely have played games and had conversations with their romantic partner and others, participants were less likely to have spent a degree of time sorting decks of cards as a group.

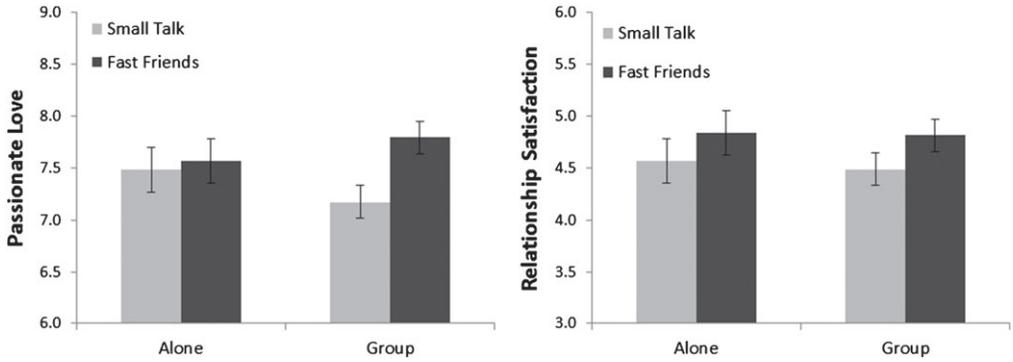


Figure 1. Effects of experimental conditions on passionate love and relationship satisfaction (Study 1). Error bars represent standard errors.

$SE = .24$, $t(83) = .36$, $p = .72$, but pairs of couples in the fast friends condition found the condition more novel ($M = 7.00$, $SE = .25$) than individual couples in the fast friends condition ($M = 4.99$, $SE = .34$), $b = 1.00$, $SE = .18$, $t(83) = 5.73$, $p < .001$. Task novelty was unrelated to posttest passionate love and relationship satisfaction ($ps \geq .37$).

Knowledge gained about romantic partners

Knowledge gained about romantic partners did not differ in the small-talk and fast friends conditions ($p = .62$), but there was a marginally significant effect of group condition, $F(1, 83.00) = 2.86$, $p = .095$, whereby individual-couple partners showed greater self-reported knowledge gain ($M = 4.92$, $SE = .37$) than individuals in the dual-couples condition ($M = 4.15$, $SE = .27$). The Group Type \times Self-Disclosure Condition interaction was nonsignificant ($p = .103$). Knowledge gained was also unrelated to passionate love and romantic satisfaction ($ps \geq .73$).

Effects on passionate love

To test effects on passionate love, a 2×2 factorial multilevel model similar to the previous analyses was conducted on posttest passionate love. There was a marginally significant main effect of the fast friends condition, $F(1, 83.00) = 3.67$, $p = .059$,⁴ where those in the

fast friends condition felt marginally higher passionate love ($M = 7.68$, $SE = .13$) compared to those in the small-talk condition ($M = 7.33$, $SE = .13$). The main effect of group composition was nonsignificant, $F(1, 83.00) = .05$, $p = .83$, indicating that group composition had no effect on self-reported passionate love. Although the Fast Friends \times Group Composition interaction effect was nonsignificant, $F(1, 83.00) = 2.15$, $p = .15$, the planned comparisons (depicted in Figure 1, left panel) were as hypothesized: Passionate love was significantly higher in the group fast friends condition ($M = 7.79$, $SE = .15$) compared to the group small-talk condition ($M = 7.17$, $SE = .15$), $b = .31$, $SE = .13$, $t(83.00) = 2.38$, $p = .019$. Within the individual couples, posttask passionate love did not significantly differ between the fast friends condition ($M = 7.57$, $SE = .21$) and small-talk condition ($M = 7.48$, $SE = .21$), $b = .04$, $SE = .13$, $t(83.00) = .32$, $p = .75$. Controlling for the pretest passionate love Eros scores did not change the significance of the interaction ($p = .21$), main effect of fast friends ($p = .058$), main effect of group condition ($p = .97$), or previous planned comparisons: The effect of being in the fast friends condition was significant in pairs of couples ($p = .008$), not individual couples ($p = .68$). The presence of the significant effects of the fast friends

4. The main effect of self-disclosure condition on passionate love was statistically significant when the

Self-Disclosure Condition \times Group Type interaction was not included in this model, $F(1, 84.00) = 6.13$, $p = .015$.

manipulation in pairs of couples on increases in passionate love after controlling for pretest passionate love indicates that the process of forming an interpersonal bond with another couple through self-disclosure and a group cohesion task (Jenga™) leads to *increases* in passionate love, relative to simply engaging in small talk with other couples. Despite the nonsignificant interaction effect, these results show that the effects of the fast friends condition on passionate love are specific to interactions with other couples, but not similar interactions within couples.

Effects on relationship satisfaction

We also examined whether our experimental conditions affected self-reported relationship satisfaction. A final 2×2 factorial multilevel model found a significant main effect of fast friends condition, $F(1, 83.00) = 4.99, p = .028$. Individuals in the fast friends condition had higher posttest relationship satisfaction ($M = 4.83, SE = .09$) than those in the small-talk condition ($M = 4.53, SE = .09$; see the right panel of Figure 1). The main effect of group composition, $F(1, 83.00) = .14, p = .71$, and the Group Composition \times Fast Friends Condition interaction, $F(1, 83.00) = .05, p = .83$, were nonsignificant. Examining the conditional effects of the fast friends manipulation revealed that the effects of being in the fast friends condition on romantic satisfaction were of similarly positive, albeit nonsignificant, magnitudes within individual couples, $b = .13, SE = .09, t(83) = 1.43, p = .16$, and pairs of couples, $b = .16, SE = .09, t(83) = 1.73, p = .09$. In summary, although the fast friends manipulation increased relationship satisfaction across individual couples and pairs of couples, self-disclosure between couples uniquely increased passionate love.⁵

5. Relationship length was not significantly related to the amount of participants' self-reported self-disclosure, pretest passionate love, relationship satisfaction, or posttest passionate love. Although women showed higher posttest passionate love and relationship satisfaction than men ($ps \leq .018$), controlling for gender did not change the significance of any effects on posttest passionate love. Additionally, men and women did not significantly differ in self-disclosure or pretest passionate love ($ps \geq .12$).

Discussion

Study 1 demonstrated that fast friends closeness-induction interactions with other couples lead to increased passionate love within couples, whereas similar interactions alone with one's partner did not. Because these effects remained significant after controlling for baseline passionate love, having a fast friends interaction with another couple changed feelings of passionate love from baseline. Whereas Slatcher (2010) found that pairs of couples who went through the fast friends procedure together increased in feelings of closeness toward their romantic partner relative to small-talk interactions between pairs of couples, our findings extend that research in two key respects. First, our study demonstrates experimentally, and for the first time with any method, that the process of forming a friendship with another couple can increase feelings of passionate love. Second, we found that this effect on passionate love is specific to pairs of interacting couples, not individual couples alone.

Study 2

Having established that positive, high-self-disclosure interactions with other couples can be effective for increasing feelings of passionate love within couple members, we sought to examine mechanisms of this effect within a larger sample of couple pairs. Study 2 examined the role of perceived self-disclosure and the responsiveness of other couples in affecting passionate love when unacquainted pairs of couples engaged in a fast friends task.

Method

Participants and design

Participants were 62 couples ($M_{\text{age}} = 23.48$ years, $SD = 6.26$), 53.2% female, 48.4% African American, 51.6% Caucasian⁶ who were randomly assigned into pairs (mean relationship length = 2.76 years, $SD = 2.82$). Participants were compensated with a sum

6. One couple in Study 2 was a same-sex couple.

of money between \$10 and \$50 each.⁷ Participants first completed an online pretest assessing their passionate love before coming into the laboratory to engage in the same fast friends task in pairs, identical to the pairs of couples in the fast friends condition in Study 1.⁸ Unless noted, participants' gender and relationship length did not moderate any results.

Materials

The 15-item short-form Passionate Love Scale (Hatfield & Sprecher, 1986) was again used to assess participants' feelings of passionate love toward their partner, in which participants rate statements about their partner. Similar to Aron and colleagues (2000), the scale was split for the pretest and posttest, with the first 7 items given pretest ($\alpha = .72$, $M = 7.60$, $SD = 11.12$), and last 8 items given posttest ($\alpha = .85$, $M = 7.70$, $SD = 11.13$). Similar to Study 1, participants completed the 16-item CSI (Funk & Rogge, 2007) as a measure of relationship satisfaction in the posttest ($\alpha = .85$). Participants also completed a pretest measure of relationship satisfaction, the 7-item Relationship Assessment Scale ($\alpha = .81$; Hendrick, 1988). All items used a 5-point Likert-type scale, and sample items included, "How well does your partner meet your needs?" (1 = *poorly*, 5 = *extremely well*) and "How many problems are there in your relationship?" (1 = *very few*, 5 = *very many*; reverse coded).

The degree to which participants self-disclosed during the fast friends task was assessed using the same three items from Study 1 (Laurenceau et al., 1998; Cronbach's $\alpha = .87$). Then, participants indicated the perceived responsiveness of their romantic partners as well as the perceived responsiveness of the two other couple members

using three items for each of the three other individuals. Responsiveness from one's own romantic partner and members of the other couple was examined separately to assess whether responsiveness specifically from the other couple—not just from romantic partners—was responsible for variability in passionate love. Participants indicated on 5-point scales (1 = *very little*, 5 = *a great deal*) how much they felt "understood," "validated," and "cared for" (Laurenceau et al., 1998) by their romantic partner and then each of the two other couple members in the experiment on three separate three-item scales for each of the other participants they interacted with; all α values $\geq .80$. The items for the other two couple members' responsiveness were averaged into one composite variable representing the other couple's overall responsiveness for each participant (all items had loadings $\geq .71$ on one factor that explained 65.83% of the variance, $\alpha = .90$), and participants' ratings of their partner's responsiveness were also averaged into a composite.

Procedure

Participants completed the online pretest measure of passionate love, relationship satisfaction, and a demographic questionnaire. Similar to the fast friends condition of Study 1, pairs of couples engaged in the three blocks of high-disclosure questions of the fast friends task for 45 min and then played a game of JengaTM. Following the fast friends task and JengaTM game, participants then rated their self-disclosure and the responsiveness of their partner and the other couple members, and completed the posttest measure of relationship satisfaction and passionate love (in that order). Finally, participants were debriefed.

Statistical analyses

Similar to Study 1, we used multilevel modeling with SPSS Mixed to account for the interdependence among couples. Our effects were reported as regression weights from multilevel modeling. We hypothesized that the other couple's responsiveness would significantly predict changes in passionate love. We tested this hypothesis with a three-level

7. This sum of money varied across our period of data collection because we increased the sum of money to aid in recruiting participants.

8. Study 2 was part of a larger study investigating the effects of cross-group couple friendships on reducing prejudice. The other paper from this data set focuses on the effects of interpersonal processes on intergroup attitudes and does not overlap at all with the findings presented here (Welker, Slatcher, Baker, & Aron, 2014).

multilevel model testing the effects of the other couple's responsiveness, romantic partner responsiveness, and self-disclosure on posttest passionate love, controlling for pretest passionate love. Because examining measures related to the participants' interaction (e.g., self-disclosure and responsiveness) in a model simultaneously may mask any effects due to shared variance (e.g., suppression and mediation), we also examined the effects of our process variables separately. Lastly, we also examined whether responsiveness of the other couple and one's partner mediated the effects of self-disclosure on changes in feelings of passionate love. For these analyses, we used Selig and Preacher's (2008) Monte Carlo utility for testing mediation in multilevel modeling (with 20,000 resamples).

Results

Individual effects of self-disclosure and responsiveness

We first examined the individual effects of our predictors by examining their relations in bivariate multilevel models, with and without controlling for our pretest measure of passion. Self-disclosure was a significant predictor of passionate love, $b = .26$, $SE = .11$, $t(120.30) = 2.36$, $p = .020$, and remained marginally significant after controlling for the effects of pretest passionate love ($p = .053$). Both the responsiveness of the other couples, $b = .47$, $SE = .11$, $t(118.93) = 4.36$, $p < .001$, and romantic partners, $b = .88$, $SE = .15$, $t(111.54) = 5.74$, $p < .001$, were significant, positive predictors of passionate love when examined alone. Controlling for pretest passionate love did not change the significance

of other couples' responsiveness or romantic partners' responsiveness on passionate love (both $ps < .001$).

Gender significantly moderated the link between self-disclosure and posttest passionate love, $b = .26$, $SE = .11$, $t(110.08) = 2.31$, $p = .023$. Simple effects tests (Preacher et al., 2006) indicated that this interaction occurred because the relationship between self-disclosure and passionate love was significant for women, $b = .47$, $SE = .14$, $t(110.08) = 3.34$, $p = .001$, but not men, $b = -.05$, $SE = .17$, $t(110.08) = -.26$, $p = .80$. Aside from this finding, gender did not significantly moderate any other reported results.

Effects on passionate love

Having examined the individual effects of self-disclosure and the responsiveness of romantic partners and other couples in our individual effect models, we then turned to investigate the effects of these predictors together in a larger multiple predictor model. This approach allowed us to examine the unique contribution of each predictor to passionate love while controlling for all other predictors. The results of this analysis are displayed in Table 1. After controlling for the effect of pretest passionate love ($b = .45$, $p < .001$), we found that the responsiveness both of romantic partners and of the other couples uniquely predicted posttest passionate love ($b = .56$, $p < .001$ and $b = .29$, $p = .007$, respectively). Self-disclosure, however, did not predict passionate love in this model ($b = -.06$, $p = .56$). These results suggest that the responsiveness of one's romantic partner and the responsiveness of the other couple contributed uniquely

Table 1. *Effects of self-disclosure, partner responsiveness, other-couple responsiveness, and pretest passionate love on passionate love following a fast friends interaction with another couple (Study 2)*

| | <i>b (SE)</i> | <i>t (df)</i> | <i>p</i> |
|------------------------------------|---------------|----------------|----------|
| Pretest passionate love | .45 (.07) | 6.45 (113.94) | < .001 |
| Self-disclosure | -.06 (.10) | -0.58 (108.35) | .564 |
| Responsiveness of other couple | .29 (.10) | 2.76 (113.79) | .007 |
| Responsiveness of romantic partner | .56 (.15) | 3.77 (105.02) | < .001 |

to increases in passionate love following the interaction. The effects of self-disclosure, on the other hand, did not uniquely contribute to passionate love, suggesting that the effects of self-disclosure on passionate love may be mediated by romantic partner responsiveness and/or the other couple's responsiveness.

We then tested whether perceived romantic partner responsiveness and the responsiveness of the other couple each separately mediated the effects of self-disclosure on feelings of passionate love. To illustrate the direct and total effects of this mediation, we ran three separate multilevel models: (a) the total effect model, modeled by regressing passionate love on self-disclosure; (b) the other couple's responsiveness regressed on self-disclosure; and (c) passionate love regressed on the other couple's responsiveness. The results of these analyses are presented in Figure 2. As is displayed, and consistent with previous analyses, the total effect of self-disclosure on passionate love was significant. Additionally, the direct effects from self-disclosure to the other couple's responsiveness and from the other couple's responsiveness to passionate love were significant. Similar to previous analyses, the effects of self-disclosure on passionate love were nonsignificant when controlling for the other couple's responsiveness. We then tested the significance of the indirect effects of self-disclosure through the responsiveness of the other couple on passionate love. The 95% Monte Carlo confidence significantly differed from 0 (.09 and .34, did not include 0), indicating that other couple's responsiveness

mediated the effects of couple members' self-disclosure on couple members' passionate love. This mediation remained significant after controlling for romantic partner responsiveness (95% CI [.09, .32]). Further, controlling for pretest passionate love did not change the significance of the indirect effect of self-disclosure through the responsiveness of the other couple on passionate love (95% CI [.006, .20]).

We then examined whether romantic partner responsiveness also mediated the effects of self-disclosure on passionate love. We performed analyses similar to our previous second and third multilevel models, this time with romantic partner responsiveness as the mediator. The first, total effect model, being redundant with our previous analyses, was not performed. Self-disclosure positively predicted romantic partner responsiveness, $b = .13$, $SE = .06$, $t(110.81) = 2.37$, $p = .020$. When self-disclosure and romantic partner responsiveness were examined as predictors of passionate love in the same model, the effect of self-disclosure was nonsignificant, $b = .11$, $SE = .10$, $t(108.29) = 1.08$, $p = .28$, but romantic partner responsiveness significantly predicted passionate love, $b = .84$, $SE = .16$, $t(116.80) = 5.31$, $p < .001$. Mediation analyses indicated that romantic partner responsiveness mediated the effects of self-disclosure on passionate love (95% CI [.02, .23]) and controlling for pretest passionate love did not change the significance of the indirect effects of romantic partner responsiveness (95% CI [.002, .17]). However, when controlling for

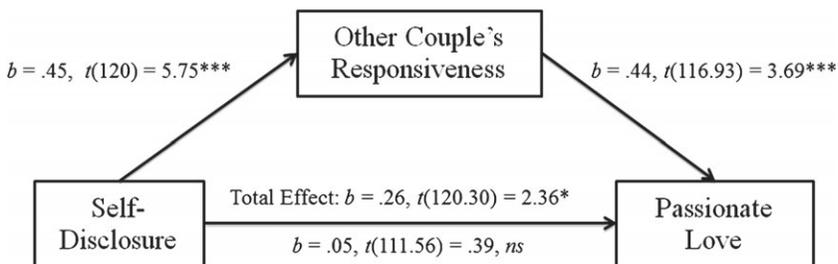


Figure 2. Other couples' responsiveness mediation of the effects of self-disclosure on passionate love (Study 2). Other couples' responsiveness significantly mediated the effects of self-disclosure on passionate love (95% CI [.09, .34]).

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

other couple's responsiveness, this mediation was nonsignificant, (95% CI [-.08, .09]). Thus, the mediating effect of the other couple's responsiveness, not romantic partner responsiveness, was primarily responsible for the effect of self-disclosure on increases in passionate love following the fast friends interaction with the other couple.

Effects on relationship satisfaction

Similar to Study 1, to determine whether the effects of self-disclosure and responsiveness had different effects on relationship satisfaction compared to passionate love, we tested similar models to the above analyses, controlling for pretest relationship satisfaction. Unlike the above analysis, self-disclosure was only marginally significantly associated with relationship satisfaction, $b = .11$, $SE = .06$, $t(116.09) = 1.95$, $p = .054$. However, a separate model (without self-disclosure) revealed that responsiveness of the other couple was a significant predictor of relationship satisfaction, $b = .17$, $SE = .06$, $t(115.35) = 2.91$, $p = .004$. Similar to our analysis for passionate love, when these two predictors were entered in the same model, responsiveness of the other couple remained a significant predictor of relationship satisfaction, $b = .16$, $SE = .06$, $t(110.10) = 2.46$, $p = .016$, but self-disclosure did not, $b = .02$, $SE = .06$, $t(99.74) = .38$, $p = .71$. As is displayed in Table 2, when romantic partner responsiveness was added to this model, $b = .41$, $SE = .09$, $t(111.41) = 4.56$, $p < .001$, both self-disclosure and other couple responsiveness were nonsignificant predictors of relationship satisfaction ($ps \geq .33$).

Similar to previous analyses, we tested whether responsiveness of the other couple and romantic partner responsiveness mediated the effects of self-disclosure on passionate love. The effects of self-disclosure on relationship satisfaction were mediated by romantic partner responsiveness (95% CI [.01, .14]), but not other couple responsiveness (95% CI [-.005, .07]). These indirect effects were nonsignificant when both mediators were controlled for and included in the same models (95% CIs [-.05, .06] for romantic partner responsiveness, 95% CI [-.02, .08] for other couple responsiveness).

Discussion

Hypotheses on the effects of self-disclosure and the responsiveness of other couples on feelings of passionate love were supported. Study 2 demonstrated that within fast friends interactions, the other couple's responsiveness was an important factor in leading to increased feelings of passionate love after getting to know the other couple, controlling for the perceived responsiveness of one's own romantic partner. Additionally, the effect of self-disclosure on passionate love was mediated by the other couple's responsiveness. These results suggest that relationship processes between couples are responsible for changes in passionate love within couples and that responsiveness from other couples is an important mechanism underlying the effects of self-disclosure on increases in couples' feelings of passionate love.

Table 2. *Effects of self-disclosure, partner responsiveness, other-couple responsiveness, and pretest relationship satisfaction on relationship satisfaction following a fast friends interaction with another couple (Study 2)*

| | b (SE) | t (df) | p |
|------------------------------------|--------------|---------------|--------|
| Pretest relationship satisfaction | .51 (.09) | 5.81 (112.84) | < .001 |
| Self-disclosure | .01 (.06) | 0.21 (104.69) | .835 |
| Responsiveness of other couple | .06 (.06) | 0.98 (114.77) | .328 |
| Responsiveness of romantic partner | .41 (.09) | 4.56 (111.41) | < .001 |

General Discussion

Broadly, the present research suggests that positive, high-self-disclosure fast friends interactions between pairs of couples can lead to increased feelings of self-reported passionate love toward one's partner. Although fast friends interactions across individual and pairs of couples increased relationship satisfaction, self-disclosure with another couple was uniquely responsible for increases in passionate love. Study 1 provided experimental evidence that the process of forming a friendship with other another couple through self-disclosure and group cohesion activities can increase passionate love relative to small-talk interactions, whereas high-self-disclosure/group cohesion interactions in general (alone with one's partner or with another couple) can increase relationship satisfaction. Study 2 extended these findings by examining mediating processes within high-self-disclosure interactions between couple pairs who are responsible for increases in passion, finding that self-disclosure to the other couple and the other couple's responsiveness were responsible for increasing passionate love, whereas a romantic partner's responsiveness was related to increased relationship satisfaction.

These findings suggest that having positive, supportive interactions with other couples can increase passionate love. The implications of these findings are both theoretically and practically important. Practically, these findings reveal a simple way to boost passionate love, which can wane over time in a relationship (Hatfield, Pillemer, O'Brien, & Le, 2008; Hatfield & Walster, 1978; Karney & Bradbury, 1995; Tucker & Aron, 1993). By having a "double date" with another couple, disclosing personal, emotional information about themselves, and having the other couple respond in a caring, validating, and understanding way to that information, couples may increase their sense of desire and excitement in their romantic relationships.

Previous work shows that activities that are both novel, exciting, and arousing can increase passionate love, such as physical exercise and comedy videos (White, Fishbein, & Rutsein,

1981), along with fun, physically engaging activities (Aron et al., 2000). The activities in the current research are unlikely to reach these levels of physiological arousal and excitement. However, these findings suggest that instead, close, responsive interactions with another couple, and potentially other individuals, are an additional mechanism by which passionate love can increase.

Several possibilities have been suggested for the decline of passionate love in a relationship, including boredom (Aron & Aron, 1986; Tsapelas, Aron, & Orbach, 2009), a lack of evolutionary purpose past child-rearing (Buss, 1989), having children (Baumeister & Bratslavsky, 1999), and a lack of increases in intimacy later in relationships (Baumeister & Bratslavsky, 1999). By revealing that positive interactions with others are important for increasing passionate love, the present research also suggests another possible mechanism for the decline of passionate love over the course of a relationship: dyadic withdrawal, or the tendency for couples to decrease interactions in their social networks as romantic involvement increases (Johnson & Leslie, 1982). It is possible that if other couples and individuals are a source of increasing passionate love for couples, couples' abstentions from social interactions with others may conversely lead to declines in passion. From the perspective of self-expansion theory (Aron & Aron, 1986, 1996; Aron et al., 2004), which holds that as individuals become close they expand their self-concepts to include each other, rapid self-expansion is important for increasing passionate love early in relationships. However, as a relationship persists, couple members become increasingly familiar with each other and self-expansion is less likely to occur. Although the initial self-expansion that occurs at the onset of a relationship coincides with increases in passionate love, the current research suggests that self-expansion experiences with other couples also can increase passionate love. Thus, it is possible that self-expanding activities with other couples in the presence of one's partner may enhance self-expansion in the later stages of a relationship.

Typically, self-disclosure and responsiveness are conceptualized as characteristics within a relationship that shape intimacy and closeness. However, our findings suggest that self-disclosing in the presence of one's romantic partner, and having other couples react responsively to that self-disclosure, can affect passionate love. Thus, the interpersonal process model (Reis & Shaver, 1988) can be extended to include individuals outside one's relationship as additional sources of developing passionate love for a relationship partner. Broadly, responsiveness is thought to be an organizing principle in relationship research that can explain a wide variability in relationship outcomes (Reis, 2012). A large amount of research has investigated the role of responsiveness in conjunction with intimacy outcomes within couples (see Reis et al., 2004, for a review), but research has not examined how responsiveness affects passionate love, with the exception of Birnbaum and Reis (2012), who reported that responsiveness from a stranger can pique sexual attraction. The current research adds to this literature by showing that responsiveness from a zero-acquaintance couple can increase feelings of passionate love within couples.

Our findings in Study 1 suggest that experimentally manipulated self-disclosure for an established couple interacting with each other by themselves has little if any effect on passionate love within the couple. However, it is important to note that a wide variety of literature suggests that self-disclosure has positive effects on other aspects of relationship quality, including couples' intimacy and relationship satisfaction (e.g., Laurenceau et al., 1998; Mitchell et al., 2008). Indeed, the current research confirms these findings, showing that self-disclosure with romantic partners, whether or not another couple is present, increases relationship satisfaction. However, in addition to these findings, self-disclosure with another couple and that other couples' subsequent responsiveness uniquely increased passionate love.

The current research adds to a growing body of research suggesting social networks and other couples can influence outcomes and

perceptions of one's own relationship (e.g., Agnew et al., 2001; Milardo, 1982; Slatcher, 2010; Sprecher et al., 2002). Although the current studies examined interactions with other couples, couples can have a wide variety of interactions with many different types of individuals in different contexts. Therefore, future research is needed to determine how passionate love develops and fluctuates within the context of other individuals and the greater context of social networks as a whole. Existing research has shown that passionate love both rises rapidly at the onset of a relationship and declines over time, and appears to be stimulated by positive novel experiences (such as self-disclosing to other couples, according to the present research). Because of this, social networks may be important beyond setting up the interactions and shaping the opportunities and support that allow relationships to be formed and maintained, but may also provide couples with bursts of passionate love that rejuvenate the spark in relationships.

Although initial positive interactions with other couples may increase passionate love, what happens when two couples become familiar with each other after repeated interactions? Does the novelty wear off, and if so, does the effect of positive interactions with the other couple no longer increase passionate love? Research by Larson and colleagues (Larson & Bradley, 1988; Larson, Mannell, & Zuzanek, 1986) finds that individuals report their peak levels of daily positive affect when engaging in activities with spouses and friends together, compared to being alone or with either only spouses or only friends. Although no other studies have examined how friendships with others affect passionate love, the finding that individuals report their highest levels of positive affect when with familiar others suggests that the familiarity with other couples and individuals does not moderate the effects of interactions between couples on passionate love. However, future research is needed to examine this possibility.

One limitation of Study 2 is that the responsiveness of the other couple was not manipulated. Experimentally manipulating this variable would allow for causal inferences to be made about the effect of the responsiveness of

other couples on passionate love within relationships. Future research could benefit from manipulating other couple responsiveness by having a confederate couple either behave or not behave in a responsive manner to a participant couple's self-disclosures (e.g., Burgoon, et al., 1998; Forest & Wood, 2011). An additional limitation to our research was our lack of a significant interaction between self-disclosure condition and group type in Study 1. Typically, larger sample sizes are required to have the power to detect moderation (Aiken & West, 1991), a goal that can be difficult to achieve given the more extensive effort required to recruit and conduct experimental research with groups and couples.

Another limitation of the current research is that the fast friends procedure in both Study 1 and Study 2 included two components: the self-disclosure manipulation and the cooperative game (e.g., Jenga™ vs. card sorting task). Thus, the effects of self-disclosure are potentially confounded by the effects of the cooperative game task. Because Study 2 found that higher levels of perceived self-disclosure following the fast friends task was linked to higher levels of passionate love, it seems plausible that the self-disclosure manipulation in Study 1 was responsible for the increases in passionate love found between pairs of couples, not the game tasks. Additionally, because the cooperative game was relatively short in length (10 min) compared to the self-disclosure manipulation (45 min), the self-disclosure manipulation is more likely to have impacted posttask self-reported passionate love and relationship satisfaction. It is also important to note that among couples self-disclosing within and between each other for 45 min, pairs of couples afford less opportunity for each individual to self-disclose. It is possible that if individuals are given more opportunities to self-disclose in a pair of couples, couple members may experience even stronger increases in passionate love.

Future research will benefit from examining the mechanisms behind how responsiveness from another couple is linked to increased passionate love. Responsiveness from other couples and individuals in couples' social networks may provide couples with social

support, which will lead individuals to feel more positive about their romantic partners (e.g., Blair & Holmberg, 2008). Additionally, responsiveness from other couples may increase positive affect, which has been found to be responsible for the effects of novel interactions (Strong & Aron, 2006) and dual-couple interactions (Slatcher, 2010) on relationship satisfaction.

Conclusions

Relationships do not occur in isolation but are embedded within broader social networks. Accordingly, passionate love appears to be continually shaped by novel and exciting experiences, which can include interactions with other couples. These interactions may shape not only the opportunities and social forces that create, preserve, and destroy relationships (Sprecher et al., 2002), but also the excitement and sparks that can keep passionate love alive. Indeed, positive, high-self-disclosure interactions between couples not only create feelings of closeness (e.g., Slatcher, 2010), but, as evidenced by the current research, can also increase feelings of passionate love as well. At the center of these processes is responsiveness, thought to be a factor important to organizing and unifying research and theory in relationships (Reis, 2012). Broadly, responsiveness itself may not only affect relationships and well-being within the bounds of individual, person-to-person relationships, but may also affect relationships and well-being across multiple relationships and social networks.

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