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Will I Be There for You? Affectionate Touch and Contextual Intimacy Can Influence Willingness to Sacrifice in Romantic Relationships

A Thesis submitted in partial satisfaction of the requirements for the degree Master of Science in Psychological & Brain Sciences

by

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Abstract

Recent research has shown the benefits of affectionate touch in romantic relationships, such as how engaging in touch can promote relationship quality and buffer stress, but no prior research has examined how touch affects willingness to sacrifice for one's partner or how contextual factors might moderate this link, such as intimacy level. We manipulated touch in the lab by assigning one couple member (the target) to receive or not receive touch from their partner, and we also manipulated whether this occurred in a context low or high in intimacy. Afterwards, we measured targets' willingness to sacrifice behaviorally (dividing tickets to determine who would do a stressful task) and via a self-report measure (willingness to replace one's partner to do the stressful task). We predicted that receiving touch generally would lead to higher willingness to sacrifice than not receiving touch. Also, we predicted that touch and intimacy level would interact, where targets would be the *most* willing to sacrifice when receiving touch in a high intimacy context, and *least* willing if they do *not* receive touch in a high intimacy context. Although results did not support these hypotheses in the full sample, we found that female targets who received touch were less willing to sacrifice than male targets who received touch. Additionally, targets (regardless of gender) receiving touch reported marginally higher perceived partner responsiveness than targets who did not. Our findings can advance our understanding of affectionate touch's role in close relationships and determine when touch can benefit individuals and relationships.

Keywords: romantic relationships, affectionate touch, willingness to sacrifice, intimacy, gender

Will I Be There for You? Affectionate Touch and Contextual Intimacy Can Influence Willingness to Sacrifice in Romantic Relationships

How do we communicate that we will be there when a romantic partner is in need? We could simply tell our partner explicitly that we will support them, but another possible, subtler way we could signal this intent is via affectionate touch, such as holding our partner's hand or giving them a hug. Affectionate touch is defined as a form of nonverbal communication used to signal love, care, and acceptance, and has been theorized to lead to pro-relationship behaviors, or behaviors that help maintain or improve the well-being of one's relationship, such as providing social support, accommodating one's partner, and sacrificing for one's partner (Jakubiak & Feeney, 2017). Past research has linked affectionate touch with positive relational outcomes such as relationship satisfaction, commitment, low levels of conflict and distress, and even better physiological reactivity in response to stress across cross-sectional, daily diary, and longitudinal study designs (Field, 2010; Gallace & Spence, 2010; Jakubiak & Feeney, 2017; Stadler et al., 2012).

According to Jakubiak and Feeney's (2017) model on the effects of receiving affectionate touch, touch may be able to increase pro-relationship behaviors via relational-cognitive changes (see Figure 1). When one receives touch from a touch provider (such as one's partner), the touch recipient infers that the touch provider loves and cares for them, and that this is being communicated via touch. One of the outcomes this interpretation can lead to is an increased sense of security, or feeling safer and more accepted by one's partner, as well as feeling more trusting that one's partner will be loving and caring (Jakubiak & Feeney 2017). Feeling secure in turn leads the touch receiver to perceive increased social support from the touch provider, as well as feel closer to and/or more dependent on the touch provider. Thus, as a result of feeling more secure, expecting more support, and feeling closer

and more dependent on one's partner, Jakubiak and Feeney (2017) predict that receiving affectionate touch can lead to pro-relationship behaviors.

The existing literature on touch in romantic relationships has already provided support for the plethora of psychological and relational benefits couple members can gain from affectionate touch. In a one-week daily diary study, Debrot, Schoebi, Perrez, and Horn (2013) tracked how often participants engaged in affectionate touch, how intimate they felt with their partner, and their state affect. They found that receiving touch was associated with feeling more positive affect. Murphy, Janicki-Deverts, and Cohen (2018) also had a daily diary study to examine whether affectionate touch (in the form of a hug) could buffer negative affect when a conflict occurred. They measured hug receipt, conflict frequency, positive affect, and negative affect daily for two weeks. They found participants who received more hugs had a smaller increase in negative affect and a smaller decrease in positive affect from conflict compared to participants who received fewer hugs, and receiving hugs even predicted smaller decreases in next-day negative affect (but did not affect next-day positive affect). Robinson, Hoplock, and Cameron's (2015) study examined whether couple members who were distressed (in anticipation of a speech) would feel more supported if they received touch, as coded in a 5-minute videotaped interaction. This study found that receiving more touch led to an increase in perceived support and a larger reduction in distress via both observational and self-report ratings. Overall, correlational evidence has shown that receiving touch can lead to more adaptive responses (e.g., improved affect, less distress) and improved interpersonal outcomes (e.g., increased intimacy, perceived support).

Experimental studies on affectionate touch have also found benefits similar to those found in correlational studies. Many studies manipulating touch looked at how it influences biological outcomes, and these studies generally found that receiving touch led to more

adaptive responses such as lower cortisol, lower cardiovascular reactivity, and increased oxytocin (e.g., Ditzen et al., 2007; Grewen, Girdler, Amico, & Light, 2005; Holt-Lunstad, Birmingham, & Light, 2008). Evidence of these adaptive responses has even been found in neurological studies, such as in Coan, Schaefer, and Davidson's (2006) study, where female participants were randomly assigned to hold their husband's hand, a male stranger's hand, or no hand while receiving electric shocks. Their results found that participants had the most reduced neural activation of threat when they were holding their husband's hand and when marital quality was high. In terms of psychological and relational outcomes, Jakubiak and Feeney (2016a, 2016b, 2019) conducted a series of studies demonstrating how manipulated touch can benefit the self and the relationship. When participants were assigned to engage in touch, they felt greater state security in their relationship compared to participants who did not (Jakubiak & Feeney, 2016a, Study 2). Similar effects can even be found when participants were assigned to simply *imagine* touch, which can also increase state security (Jakubiak & Feeney, 2016a, Study 1) as well as buffer against psychological stress and encourage exploration to try a more challenging task (Jakubiak & Feeney, 2016b). Lastly, Jakubiak and Feeney (2019, Study 1) recently showed how couples assigned to engage in touch before and during a conflict were more likely to enact constructive behaviors (such as displaying positive affect towards the partner, providing social support, and cooperating) during the conflict, compared to couples who did not touch. While receiving touch can be beneficial in terms of individual and relationship well-being, only one study has looked at how touch can promote pro-relationship behaviors (Jakubiak & Feeney, 2019). We would like to contribute to the literature by examining if receiving touch can lead to another pro-relationship behavior: willingness to sacrifice.

Willingness to Sacrifice as a Potential Outcome of Receiving Affectionate Touch

Willingness to sacrifice has been defined as promoting the interest of the partner and/or the relationship over the interests of the self and even at a cost to the self. In studies, willingness to sacrifice has been operationalized and measured in various ways. For example, Van Lange et al. (1997) used both self-report and behavioral measures to tap into participants' willingness to sacrifice. In their self-report measure, participants were asked to provide the three most important activities in their life other than their current relationship, and then for each activity, asked participants if it was not possible to both engage in that activity *and* be in a relationship with their partner, how willing were they to end their relationship? In this case, the cost would be to give up the important activity in order to benefit and maintain the relationship. For their behavioral measure, participants stepped up and down a stair as fast as they could for two trials: the first for a baseline reading, and the second to measure willingness to sacrifice. For every step the participant made above their baseline, their partner would be paid an extra 10 cents, thus even though they would be taking on a physical cost, they would be benefitting their partner monetarily. No matter the cost a partner takes on, as long as the relationship or the partner can benefit in some way, willingness to sacrifice can be a signal that a partner is invested in continuing the relationship, which can have consequences in relational outcomes.

Research has shown that taking on costs to the self in order to maintain one's relationship or help one's partner can ultimately benefit relationship well-being (Impett & Gordon, 2008; Righetti & Impett, 2017). Willingness to sacrifice has been positively correlated with relationship satisfaction, commitment, and relational stability across various study designs (e.g., Etcheverry & Le, 2005; Kogan et al., 2013; Ruppel & Curran, 2012; Totenhagen, Curran, Serido, & Butler, 2013; Van Lange et al., 1997; Wieselquist, Rusbult, Foster, & Agnew, 1999). Van Lange et al. (1997) conducted a longitudinal study that found

willingness to sacrifice predicted commitment and relationship satisfaction over three time points 6-8 months apart. They also found that willingness to sacrifice predicted later dyadic adjustment, an indicator of health of the relationship. Since willingness to sacrifice has been consistently shown to benefit relationship well-being, it would be beneficial to examine whether receiving affectionate touch can increase willingness to sacrifice for one's partner and help improve relationship well-being as a whole. We would expect that receiving affectionate touch from a romantic partner can promote willingness to sacrifice via signaling love and care to the touch recipient, which can promote feeling more secure and closer to the touch provider, as mentioned previously (Jakubiak & Feeney, 2017). These feelings of security and closeness can make touch recipients feel safer about taking on a cost to help their partner, thus increasing willingness to sacrifice. However, it is possible that the effect of touch on willingness to sacrifice may depend on certain environmental factors.

Can Different Intimacy Contexts Alter the Effects of Touch?

Jakubiak and Feeney (2017) also discuss situational moderators that can amplify or attenuate the effects of affectionate touch. The power of the situation is important to examine to see when the effects of touch are more enhanced in some contexts compared to others and also when willingness to sacrifice is more likely to be affected by touch. For example, how intimate partners feel towards one another may be a contextual factor that may be particularly sensitive to touch. We expect that the intimacy of the situation can moderate the effects of touch because providing touch is a form of responsiveness that is vital in developing intimacy. In order to achieve intimacy (and its benefits), one must self-disclose personal, emotional information, and the self-discloser must perceive that their partner is being responsive, or showing that they are caring, understanding, and validating of the self-discloser (Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Shaver, 1988). Affectionate

touch can serve as a form of responsiveness (Chopik et al., 2014; Debrot et al., 2013; Jakubiak & Feeney, 2017; Robinson, Hoplock, & Cameron, 2015) and can be detrimental if it is absent when responsiveness is expected. Failing to communicate responsiveness appropriately during intimate self-disclosure can lead people to withdraw and feel more distant from their partner (Reis & Shaver, 1988). This would influence willingness to sacrifice because if one receives validation in the form of touch, then the touch receiver may feel closer to their partner and feel that sacrificing for them would be safer and worth doing. If they do not receive touch and receive no validation, then they may feel threatened and not willing to sacrifice for someone who did not convey validation, understanding, or caring. Also, there may be no or a smaller effect if the context is low in intimacy, when touch may not feel as responsive if the information being shared is not that sensitive (Jakubiak & Feeney, 2017). Thus, we anticipate that the presence of touch and how much intimacy there is in an interaction will interact to influence willingness to sacrifice.

Although there have been studies that have looked at situational influences on willingness to sacrifice, such as focusing on being highly satisfied (Impett & Gordon, 2008), no previous study has looked specifically at how state intimacy may affect willingness to sacrifice or how touch would interact with different contexts. While receiving affectionate forms of touch has been found to lead to more intimacy (Ben-Ari & Lavee, 2007; Burgoon, Buller, Hale, & deTurck, 1984; Guerrero & Andersen, 1991; Johnson & Edwards, 1991; Pisano, Wall, & Foster, 1986; Stadler et al., 2012), and one study found that daily perception of intimacy mediated the relationship between receiving touch and feeling more positive affect (Debrot et al., 2013), no study has looked at how touch influences relational outcomes while experimentally manipulating the intimacy of the context as a moderator.

Potential Relational Mechanisms

We are also interested in the pathway from affectionate touch and intimacy level to willingness to sacrifice. In other words, what is happening when one receives touch in low and high intimacy contexts that is influencing willingness to sacrifice? We propose four possible pathways may occur when receiving touch: increased feelings of state security (feelings of safety, caring, and trust with one's partner), inclusion of other in self (IOS, or how cognitively interdependent one feels to one's partner), closeness (how emotionally close one feels to the partner), and perceived partner responsiveness (PPR, feeling cared for, validated, and understood by the partner). Past research has established that affectionate touch can increase state security (Jakubiak & Feeney, 2016a) and closeness (e.g., Ben-Ari & Lavee, 2007; Burgoon et al., 1984; Guerrero & Andersen, 1991; Johnson & Edwards, 1991; Pisano et al., 1986). Initial findings that affectionate touch can lead to IOS and PPR have been found by Jakubiak and Feeney (2019, Study 2), and they found that cognitive interdependence, which included IOS, and positive relational perceptions, which included PPR, explained the stress-buffering effects of imagined touch. No study has focused on touch's relationship to IOS and PPR by themselves, but there are theoretical reasons outlining touch's potential to lead to increased IOS and PPR, based on the model of affectionate touch from Jakubiak and Feeney (2017).

Security, IOS, closeness, and PPR may also lead to increased willingness to sacrifice as well. Ruppel and Curran (2012) found that the number of sacrifices was positively associated with relationship satisfaction, and that this association was stronger for couple members with lower trait attachment anxiety and avoidance. As mentioned before, trust promotes willingness to sacrifice, and this trust can also be interpreted as feeling more secure with their partner, meaning they may be more willing to sacrifice (Shallcross & Simpson, 2012; Wieselquist et al., 1999). Thus, perhaps when couple members feel more secure in

their relationship with their partner, they are more willing to take on a cost to the self to benefit their partner. Researchers have also found that the closer or the more linked couple members feel to one another, the more willing they are to sacrifice for their partner (Day & Impett, 2017; Impett & Gordon, 2008). Although there is no study directly measuring PPR and how it can lead to willingness to sacrifice, in their review of sacrifices in close relationships, Righetti and Impett (2017) suggest that understanding and empathy is required in order to be willing to sacrifice for a partner. Thus we reasoned that PPR may be effective in increasing this willingness. Although we expect these variables to mediate the path from touch and intimacy to willingness to sacrifice, we anticipate potential moderators of this relationship as well.

Gender as a Possible Moderator

It is also possible that the effects of touch and intimacy level on willingness to sacrifice may differ between males and females.[1] In regard to the touch literature, most of the research is mixed, and the most consistent finding (although not completely, see Hanzal, Segre, & Dorros, 2008) is that women respond more favorably to touch than men (Chopik et al., 2014; Major, 1981; Murphy et al., 2018; Stier & Hall, 1984). For example, both Major's (1981) and Stier and Hall's (1984) reviews on gender differences in touch found that women responded more favorably to receiving touch compared to men (when both were of equal status, Major, 1981), but in these studies, participants received touch from opposite-sex strangers, not a close other. Both reviews also acknowledge that gender may be confounded with lower status or power, as power dynamics also influence reactions to touch (Major, 1981; Stier & Hall, 1984). In Murphy et al.'s (2018) study on whether hugs could buffer

[1]We acknowledge the splitting gender into a binary is an oversimplification of the full spectrum of actual human behavior, but for the purpose of this research, we dichotomize gender to simplify analyses while recognizing its limitations.

against the negative affect of conflict, they found that women reported more positive affect on days they received hugs compared to men. However, they did not find a gender difference in how hugs influenced feelings related to conflict, so the buffering effects of hugs was beneficial for both men and women. This study thus suggests that although there may be short-term gender differences, long-term benefits may not be gender-specific. One of the few studies that have examined gender differences in relational outcomes of touch found that women interpreted more commitment from their partner's touch than males did, suggesting that the female participants may infer their partner's feelings about the relationship via touch more than their male partners (Johnson & Edwards, 1991).

It is important to note that many studies have found *no* gender differences for the effects of touch (e.g., Debrot et al., 2013, 2014; Holt-Lunstad, Birmingham, & Light, 2008; Jakubiak & Feeney, 2016), so there may be another variable responsible for creating gender differences (such as power, as Major (1981) and Stier and Hall (1984) have suggested) or researchers need to better understand the conditions for when gender differences occur in response to touch. Also, given the limited number of studies that look at the effects of touch beyond an immediate, affective response, it is hard to extrapolate how these gender differences would apply to longer-term relationship maintenance behaviors and strategies, such as willingness to sacrifice.

For studies looking at intimacy, there are also very few gender differences in terms of the *outcomes* of intimacy processes. While there are gender differences in whom men and women disclose to and what type of information they disclose (Reis, 1998), when emotional and meaningful self-disclosure is actually achieved, gender differences typically do not occur in how much intimacy partners experience and how responsive they perceive their partner to be (Laurenceau et al., 1998), so we do not expect gender to moderate any effects of intimacy.

In past literature on willingness to sacrifice, gender differences are not commonly found, despite theoretical reasons for these possible differences (Impett & Gordon, 2008, Righetti & Impett, 2017). Theoretical reasons include how gender roles can influence willingness to sacrifice (Impett & Gordon, 2008; Spence, Helmreich, & Holahan, 1979). For example, those who tend to be more feminine or communal may be more willing to sacrifice because they tend to be more understanding and sensitive to their partner's needs and would put more effort to maintain the relationship, while those with more masculine or agentic qualities may be more independent and self-focused and therefore not as willing to sacrifice for their partner (Righetti & Impett, 2017; Spence, Helmreich, & Holahan, 1979).

Although past literature has been inconclusive in terms of what gender differences we should find in this study, it would be beneficial to explore if there are any gender differences to better understand the nuances of touch and for whom touch is beneficial for.

Current Study

This study aims to answer the following question: can affectionate touch and intimacy level influence willingness to sacrifice for one's romantic partner? We tested this question in an experimental 2 (touch) x 2 (intimacy level) design, where we manipulated the presence and absence of affectionate touch, and the intimacy level of the context, low or high. Romantic couples came into the lab, and we randomly chose one participant, the target, to be the focus of our results. The target was randomly assigned to receive affectionate touch or not while disclosing information either low or high in intimacy. We then measured their willingness to sacrifice in two ways. We used a behavioral measure of sacrifice where targets could give themselves tickets for a raffle, where giving themselves more tickets increased their chances to take their partner's place in a stressful speech task (and thus reflect an

increase in willingness to sacrifice). We decided to create our own behavioral measure of sacrifice instead of using Van Lange's (1997) stair measure because in this study, although the participant was told their partner will be given 10 cents, it is possible that this money could be shared between the couple after the study, therefore the cost to run up and down the stair may not be as costly to the self. By dividing the tickets to determine which person would have to do the speech task, we can prevent sharing outcomes between the partners, thus participants who give themselves more tickets are indeed increasing the cost for themselves. We also used a self-report measure asking targets how willing they would be to take their partner's place in the same task to see how this would match our behavioral measure. Afterwards, we collected self-report measures on targets' state security, IOS, closeness to their partner, and perceived partner responsiveness (PPR).

We hypothesize the following (see Figure 2 for model of all hypotheses):

1a. Participants who receive touch will be more willing to sacrifice than those who do not receive touch. That is, we predict an overall main of effect of touch on willingness to sacrifice.

1b. We predict a touch x intimacy level interaction such that receiving touch in the high intimacy condition will lead to greater willingness to sacrifice than receiving touch in the low intimacy condition, while not receiving touch in the high intimacy condition would lead to less willingness to sacrifice than not receiving touch in the low intimacy condition.

Because previous studies have shown that a high level of self-disclosure leaves the discloser feeling vulnerable (Reis & Shaver, 1988), showing support via touch can help the discloser feel more secure and validated, thus increasing willingness to sacrifice for their supportive partner. In the case of low intimacy though, touch can still show some benefits

because it can show genuine care from the touch provider, but it may not cause as much of an increase in willingness to sacrifice because it's not responding to a need for support or validation. It's also possible that the level of intimacy may not moderate the effects of receiving touch: touch may lead to similar level of willingness to sacrifice as in high levels of intimacy because in cases of low intimacy, it is a spontaneous and noncontingent display of affection and therefore can be as meaningful as touch received in response to a need. Because no previous study has tested the effect of touch in low vs. high intimacy contexts, this is a possible alternative explanation in contrast to what we initially predicted.

The no touch and low intimacy condition serves as a control condition, where no touch is being provided and the information being disclosed is fairly casual and of low intensity. We believe that being in the no touch and high intimacy condition, however, would lead to lower willingness to sacrifice in the touch receiver because the receiver may feel emotionally vulnerable. Because they're not receiving support or validation (in the form of touch) from their partner or receiving no touch may be perceived as an inappropriate response (Jakubiak & Feeney, 2017), they may withdraw and want to focus on protecting themselves (Reis & Shaver, 1988), and therefore would not be willing to take on a cost to sacrifice for their partner.

In addition, we also have two exploratory questions:

1. How does the gender of the touch recipient moderate the effects of touch and intimacy on willingness to sacrifice?
2. Can state security, IOS, closeness, and/or PPR mediate the link between touch and intimacy to willingness to sacrifice?

Due to mixed evidence regarding gender differences in the touch and willingness to sacrifice literature, we do not have a specific hypothesis regarding gender differences and posed it as an exploratory question. Regarding security, IOS, closeness, and PPR, according to Jakubiak and Feeney's (2017) model and other prior research (e.g., Guerrero & Andersen, 1991; Wieselquist et al., 1999), we anticipate that these relational variables can explain how touch influences willingness to sacrifice, although due to sparse research that look at these variables together, we also leave this as an exploratory research question. Preregistered hypotheses, analysis plan, and data from this study are available online (https://osf.io/q34kh/?view_only=cde1c30c069c40f1a86ed8a29316b65c).

Method

Participants

According to G-Power 3.1 and based on the parameters of an effect size of $r = 0.25$, power = 0.80, and $p = .05$, we determined our a priori sample size to be 128 (Faul, Erdfelder, Buchner, & Lang, 2009). One hundred and thirty-six participants were recruited to participate in this study, but 12 participants were excluded from the final sample of 124 participants (3 due to engaging in touch when they were in a condition with no touch, 6 due to failing attention checks or otherwise did not fully participate in the study,[2] and 3 due to RA mistakes in conducting the study). In the final sample of participants, there were 66 females (53.2%), 56 males, and 2 who identified as gender non-binary. 87.9% of our couples were heterosexual. Participants were on average 19.83 years old ($SD = 2.60$), ranging from

[2] Participants were excluded due to not following manipulation instructions or not seriously engaging in the activity, as verified observationally in a videotaped interaction not reported for this study. After exclusions, 34 couples were in the touch/low intimacy condition, 29 couples were in the touch/high intimacy condition, 31 couples were in the no touch/low intimacy condition, and 30 couples were in the no touch/high intimacy condition.

17 to 42. The sample identified as 39.5% Caucasian, 35.5% Asian, 16.9% Hispanic, 1.6% African-American, and 6.5% other or of mixed race. To be eligible for this study, participants must be together for at least six months. Participants reported a mean relationship length of 13.49 months (*SD* = 13.21). Seventeen participants reported living together with their partner, and the mean duration living together was 11.06 months (*SD* = 12.30).

Participants were recruited through UCSB's Psychology Research pool for course credit, UCSB's paid participant pool, and via flyers posted throughout UCSB's campus and the surrounding community. Participants either received research credit for their psychology course or a $10 Amazon gift card.

Procedures

Before the study started, the participant was randomly assigned (with a random number generator) to engage in the touch or no touch condition and to be in either the low intimacy or high intimacy context. Thus, there were four conditions: engaging in touch in a low intimacy context, engaging in touch in a high intimacy context, not engaging in touch in a low intimacy context, and not engaging in touch in a high intimacy context. Participants and their partner were also randomly assigned[3] to be either the "confederate" or the "target." The "confederate" couple member was given instructions to either touch or not touch the "target," and the "target" was the couple member who engaged in a writing activity and self-disclosed while receiving touch from the confederate (for the touch condition). Because the experimenter gave the instructions to the confederate and provided the intimacy prompts for the writing activity, our experimenters were not blind to the touch or the intimacy conditions, but they were blind to study hypotheses. Participants were blind to both touch and intimacy

[3] These roles were determined by flipping a coin, where heads is the person sitting on the right side of the couch in the lab space and tails was the person sitting on the left.

conditions and study hypotheses.

Before starting the 1-hour lab study, participants completed consent forms that contained a general summary of the study and the activities they will do, such as filling out questionnaires about themselves, engaging in a writing task, and performing a decision-making task. After signing the consent forms, the couple members were separated co complete online questionnaires assessing background and demographic variables (see Appendix A).

After completing the background questionnaires, the target completed a writing warm-up activity (see Appendix B), and the experimenter gave the confederate, still in another room, instructions to either touch or not touch the target in their next activity. For both the touch and no touch conditions, the confederate was instructed to act in the typical way they do when they spend time with the target but to adhere to their assigned condition as closely as possible. For the touch condition, the confederate was told to touch their partner in an affectionate and caring manner. Examples of warm and affectionate touch were provided by the experimenter (e.g. hand on the partner's shoulder, arm around partner's shoulders, resting head on partner's shoulder). The confederate was also told to stop touching their partner if their partner seemed uncomfortable with the touch (such as repeatedly pulling away) or asked them to stop. If the confederate did not feel comfortable with their condition, the experimenter gave them the opportunity to consent or not to their given instructions. If they did not consent, they were told they can act as they normally would when relaxing with their partner for the next activity, although all confederates consented to these instructions. Full touch and no touch condition instructions can be seen in Appendix C.

After giving the confederate their instructions, the confederate was brought back to the target in the same room they started in. The experimenter then gave the target their writing task, where they were able to write on pen and paper in response to four prompts. This writing task involved writing about topics low or high in intimacy depending on the assigned condition. The writing prompts were adapted from Aron, Melinat, Aron, Vallone, and Bator's (1997) intimacy task, which was developed to create high or low levels of intimacy in guided self-disclosure prompts. Example prompts in the low intimacy condition include "What would constitute a 'perfect day' for you?" and "Discuss your biggest pet peeve, or something that particularly annoys you.", and example prompts in the high intimacy condition include "What is the greatest accomplishment of your life?" and "Share a time when you were disappointed in yourself." (see all prompts in Appendix D). Prompts were selected such that there were two prompts that were positive in affect and two that were negative in affect.

Both the target and the confederate were also instructed to not talk so the target could focus on the writing task, but they were told that the target could share their writing with their partner as long as they did not talk to each other. To ensure that the confederate was aware of the level of intimacy of the writing topics, the experimenter also gave the confederate their own list of prompts that matched the target's prompts, and they read along with what the target was writing. The experimenter informed the target that they had five minutes to complete all the prompts, and then the experimenter left the room. The confederate then carried out the touch or no touch condition while their partner responded to their prompts. This portion of the study was videotaped to verify that couple members were acting according to their condition (and to collect data not reported in this study).

After the writing task, the couple members were separated to the rooms they were in before, and the target started the sacrifice task. Targets were told by the experimenter that they only had enough time for one person to perform the next task, so the target would get an opportunity to let their partner do the task or to have themselves do the task. The task would involve the target presenting a speech for what they think is their greatness weakness is and why, adapted from the Trier Social Stress Task (Kirschbaum, Pirke, & Hellhammer, 1993). The target was then told that there would be a raffle of nine tickets to determine which couple member would do the next task, and the target would get to divide the nine tickets between themselves and their partner, but their partner will not know how they divide the tickets. The experimenter then left the target alone to divide their tickets, and after they completed dividing the tickets, they completed the post-sacrifice questionnaire, which contained our exploratory dependent variable measures. At the end of the post-sacrifice questionnaire, the target also completed manipulation checks to ensure the appropriate touch manipulation was provided by the confederate and received by the target, to ensure that the target felt that the prompts were low or high in intimacy (depending on their condition), and to see if targets did perceive more of a cost to themselves and more of a benefit to their partners if they gave themselves more tickets (and less cost and benefit if they gave themselves fewer tickets) (see Appendix E).

At the end of both questionnaires, participants were thoroughly debriefed and receive their compensation (1 research credit or $10).

Measures

Background questionnaires. In the first background questionnaire, participants were asked to provide demographic information about themselves individually and their relationship. All measures in the background questionnaires can be seen in Appendix A.

Relationship quality. We assessed relationship quality with a condensed version of the Investment Model scale (Rusbult, Martz, & Agnew, 1998) using 13 items from all 4 subscales (satisfaction, commitment, investments, and quality of alternatives) (α = 83). Participants indicated their agreement with each statement from 0 (Do Not Agree At All) to 8 (Agree Completely).

Touch history and comfort with touch. This questionnaire assessed participants' history and comfort with touch (α = .79). These items are hidden among other items (such as how often the participant fights with their partner and how comfortable they are providing support to their partner) to decrease suspicion. These items were rated on a 7-point Likert scale for both the history (1 = "Never," 4 = "Somewhat often," 7 = "Very Often") and comfort (1 = "Not At All Comfortable," 4 = "Somewhat Comfortable," 7 = "Completely Comfortable") items**.**

Public-speaking check. In the background questionnaire, a "Talents and Skills Questionnaire" assessed the strength of the participants' talents and skills in various areas such as writing, social skills, music, and athletics on a 6-point Likert scale from 1 ("Very weak") to 6 ("Very strong"). One item on public-speaking was included in this questionnaire to assess if there were differences in participants who perceived that they were good at or comfortable with public-speaking and who would have higher scores vs. participants who scored low on this scale.

Post-Sacrifice Questionnaires. After dividing the tickets, participants were asked about the exploratory relational variables (see Appendix E).

State security. Participants rated how they are currently feeling according to various adjectives from 1 ("Not At All") to 6 ("Very Much). Of the 18 adjectives, 8 adjectives were security-related (e.g., "Secure," "Protected," "Supported") with one that was reverse-coded ("Threatened"). These items were adapted from Jakubiak & Feeney (2016a) ($\alpha = .85$).

Inclusion of other in self (IOS). We also measured how cognitively interdependent participants perceive to be with their partner using Aron, Aron, and Smollan's (1992) Inclusion of the Other in the Self (IOS) measure. This measure is a single item of seven concentric circles varying in the degree they overlap, where one circle represents the self and one circle represents one's partner.

Closeness. We measured relational closeness with four face-valid items developed for this project, which we put together as a closeness composite ($\alpha = .77$). The four items are "I feel a sense of 'oneness' with my partner," "I feel like my partner and I are on the same team," "I feel more connected with my partner than usual," and "I feel close to my partner." These items were rated on a 7-point Likert scale from 1 ("Not at all") to 7 ("Completely").

Perceived partner responsiveness (PPR). To measure how responsive the participant perceived their partner to be, participants filled out 10 items such as "[My partner] respects me, shortcomings and all," "[My partner] is on 'the same wavelength' with me," and "[My Partner] seems interested in what I am thinking and feeling" on a Likert scale from 1 ("Not At All True") to 9 ("Completely True"). These items were adapted from Reis, Maniaci, Caprariello, Eastwick, and Finkel (2012) ($\alpha = .93$).

Manipulation checks. In the last questionnaire, manipulation checks were included to ensure that the touch and intimacy manipulation were correctly implemented as well as to confirm whether the participant was making a sacrifice in the ticket division task.

Touch. During the writing activity, participants were filmed to check whether they were performing according to their assigned condition. In addition, couple members were asked to what degree they received touch (for the target) or provided touch (for the confederate) during the writing task at the end of the post-sacrifice questionnaire.

Intimacy. At the end of the post-sacrifice questionnaire, target participants answered one item asking to what extent did they disclose personal topics and emotional information in the writing activity from 0 ("Not At All") to 7 ("Very Much").

Sacrifice. To determine whether the participant made a sacrifice, we asked them to what extent did they incur a cost onto themselves from how they divided the tickets from 1 ("No Cost At All") to 7 ("Definitely Will Take On A Cost") and to what extent did their partner benefit from the way they divided the tickets from 1 ("Not Benefit My Partner At all") to 7 ("Definitely Benefit My Partner").

Results

Manipulation Checks

All participants were asked to what degree did they receive or provide touch (depending on their role) as a touch manipulation check. Targets in the touch condition reported receiving significantly higher touch (M = 7.08, SD = 1.53) than those in the no touch condition (M = 2.03, SD = 1.65), $t(119) = -17.45$, $p < .001$, $\eta^2 = .72$. Confederates, likewise, reported providing significantly more touch when they were assigned to be in the touch condition (M = 6.13, SD = 1.50) than in the no touch condition (M = 1.34, SD = 0.71), t(118)

= -22.25, $p < .001$, $\eta^2 = .81$. Coders also verified whether touch occurred in the touch condition or whether no touch occurred in the no touch condition, and couples were excluded if they violated instructions.

For the manipulation check for intimacy, targets were asked to what degree did they write about personal topics and emotional information. Targets in the high intimacy condition reported writing about more personal topics ($M = 5.89$, $SD = 2.13$) than targets in the low intimacy condition ($M = 4.06$, $SD = 2.35$), $t(117) = -4.44$, $p < .001$, $\eta^2 = .14$, as well as more emotional information ($M = 5.60$, $SD = 1.84$) than those in the low intimacy condition ($M = 3.95$, $SD = 2.22$), $t(119) = -4.44$, $p < .001$, $\eta^2 = .14$.

Along with our manipulation checks, because our behavioral measure of sacrifice (dividing the tickets) has not been previously validated, we wanted to determine if our ticket task was associated with other subjective measures of sacrifice in our study to assess construct validity. We correlated the number of tickets given to self (where higher numbers indicate a higher willingness to sacrifice) with self-reported willingness to sacrifice, cost to the self as a result of how many tickets given to self, and benefit to the partner as a result of how many tickets given to the self. The number of tickets given to the self was significantly and positively correlated with self-reported willingness to sacrifice ($r = .36$, $p < .001$), cost to self ($r = .20$, $p = .02$), and benefit to partner ($r = .59$, $p < .001$). These findings provide some evidence of convergent validity. As we expected, the more tickets given to the self was associated with being more willing to sacrifice, perceiving more cost to the self, and benefiting the partner more. (See Table 1 for means and standard deviations for all dependent variables by condition, and see Table 2 for the intercorrelations between all study variables.)

Primary Analyses

Willingness to sacrifice outcomes. To test our first hypothesis that targets who received touch will be more willing to sacrifice by giving more tickets to themselves, and even more if they were in the high intimacy condition, we ran a 2 (touch/no touch) x 2 (low/high intimacy) ANOVA on how many tickets targets gave to themselves. Unfortunately, touch did not have a significant main effect on influencing the number of tickets targets gave to themselves, $F(1, 119) = 0.12$, $p = .73$, $\eta^2 = .001$, nor did intimacy level, $F(1, 119) = 0.39$, $p = .54$, $\eta^2 = .003$, or the interaction, $F(1, 119) = 0.60$, $p = .442$, $\eta^2 = .01$.

Next, we ran the same analysis on target's self-report willingness to sacrifice. Once again, touch did not have a significant effect on target's self-reported willingness to sacrifice, $F(1, 119) = 1.39$, $p = .24$, $\eta^2 = .01$, nor did intimacy level, $F(1, 119) = 1.62$, $p = .21$, $\eta^2 = .01$, or the interaction, $F(1, 119) = 0.29$, $p = .59$, $\eta^2 = .002$.

Because we included measures on how much of a cost targets took on and how much of a benefit their partner got based on how they divided the tickets as another way to measure willingness to sacrifice, we also ran the same 2 x 2 ANOVA on cost to the decision and benefit to the partner. For cost to the self, touch did not have a significant effect on target's perceived cost to the self, $F(1, 119) = 0.29$, $p = .29$, $\eta^2 = .01$, nor did intimacy level, $F(1, 119) = 1.30$, $p = .26$, $\eta^2 = .01$, or the interaction, $F(1, 119) = 1.13$, $p = 29.$, $\eta^2 = .01$. Similar results were found for benefit to the partner, where touch did not have a significant effect on benefit to the partner, $F(1, 119) = 0.07$, $p = .80$, $\eta^2 = .001$, nor did intimacy level, $F(1, 119) = 0.62$, $p = .43$, $\eta^2 = .01$, or the interaction, $F(1, 119) = 0.17$, $p = 68.$, $\eta^2 = .001$.

Exploratory Analyses

Although the main hypotheses were not supported, we looked at our exploratory questions to see if gender may have moderated how willing targets were to sacrifice for their partner, as well as whether touch and intimacy would influence relevant relational outcomes.

Gender as a moderator variable. To see if gender moderated the interaction of touch and intimacy level on willingness to sacrifice, we conducted a 2 (touch/no touch) x 2 (low/high intimacy) x 2 (female/male) ANOVA (see Table 3 for a summary of all outcomes). The two targets who identified as gender non-binary were excluded from these analyses. We found that there was a significant interaction between touch and gender on how many tickets targets gave themselves ($F(1, 113) = 6.81$, $p = .01$, $\eta^2 = .06$), but there was no significant interaction between gender and intimacy, and there was no significant three-way interaction between touch, intimacy, or gender on the ticket-sacrifice measure. We computed the simple effects of touch on sacrifice for females and males. According to simple effects analyses, male targets gave marginally more tickets to themselves when they received touch ($M = 5.21$, $SD = 2.20$) than when they did not ($M = 4.22$, $SD = 2.00$), $F(1, 117) = 2.88$, $p = .09$, $\eta^2 = .03$. Touch had the opposite effect on female targets: females who received touch gave significantly *fewer* tickets to themselves ($M = 3.62$, $SD = 2.03$) than female targets who did not receive touch ($M = 4.70$, $SD = 2.41$), $F(1, 117) = 4.14$, $p = .044$, $\eta^2 = .04$ (see Figure 3).

There were no significant main effects or interactions for touch, intimacy, or gender for self-reported willingness to sacrifice (see Table 3), except for a marginal main effect of gender, $F(1, 113) = 2.95$, $p = .09$, $\eta^2 = .03$. Male participants reported marginally higher willingness to sacrifice ($M = 6.18$, $SD = 1.25$) compared to female participants ($M = 5.79$, $SD = 1.58$).

State security, inclusion of other in self (IOS), closeness, and perceived partner responsiveness (PPR) as outcomes. We also ran 2 (touch/no touch) x 2 (low/high intimacy) ANOVAs on state security, IOS, closeness, and PPR to see if touch and intimacy interacted to influence these relational outcomes. For state security, IOS, or closeness, there was no significant main effect of touch, intimacy, or of the interaction (see Table 3 for a summary of all F-tests and Table 1 for means by condition).

However, the 2 x 2 ANOVA on PPR showed a marginal main effect of touch on PPR, $F(1, 113) = 3.80$, $p = .05$, $\eta^2 = .03$. Results aligned with our thinking, and targets who received touch reported marginally higher PPR ($M = 7.87$, $SD = 1.03$) than targets who did not receive touch ($M = 7.54$, $SD = 1.33$). There was no significant main effect of intimacy, $F(1, 119) = 0.01$, $p = .94$, $\eta^2 = 0.00$, or of the interaction, $F(1, 119) = 0.27$, $p = .60$, $\eta^2 = 0.002$, on PPR.

PPR as a potential mediator from touch to willingness to sacrifice. Because touch had a marginally significant effect on PPR and we predicted that PPR may be a mediator linking touch to the number of tickets given to the self, we wanted to explore whether there was an indirect association between touch and sacrifice as mediated by PPR. To test this mediation, we used the PROCESS macro for SPSS (Hayes, 2013). For the total effect from touch to tickets to self, touch did not significantly predict the number of tickets given to the self, $\beta = -0.15$, $t(121) = -0.38$, $p = .71$, 95% CI [-0.95, 0.65]. Then, as found before, touch marginally predicted PPR, $\beta = 0.41$, $t(121) = 1.92$, $p = .06$, 95% CI [-0.01, 0.84]. Finally, we regressed PPR simultaneously with touch condition onto tickets given to self. The direct path from PPR to the number of tickets given to the self accounting for touch was insignificant, $\beta = 0.08$, $t(120) = 0.49$, $p = .63$, 95% CI [-0.26, 0.42], and the path from touch to tickets given to self was also still insignificant, $\beta = -0.19$, $t(120) = -.05$, $p = .66$, 95% CI [-1.00, 0.63]. In

sum, PPR did not mediate the relationship from touch to (behavioral) willingness to sacrifice (see Figure 4).

Controlling for relationship quality, touch history, touch comfort, and comfort with public speaking. Finally, we ran the prior analyses controlling for relationship quality, touch history, comfort with touch, and comfort with public speaking because it was expected that the effect of touch and intimacy might change as a function of these variables. Controlling for these background variables did not significantly change our results.

Discussion

Contrary to what we predicted, receiving affectionate touch and the intimacy level of the context did not significantly influence couple members' willingness to sacrifice, behaviorally or via self-report measures. However, we did find that the effect of touch on the behavioral measure of sacrifice was moderated by gender. Although male and female participants gave themselves a similar number of tickets if they received no touch, female targets who received touch were behaviorally less willing to sacrifice than male targets who received touch. We also found that all targets who received touch reported marginally higher PPR than targets who did not receive touch.

Although our manipulation checks confirmed that our participants experienced the touch and intimacy manipulations as expected, we did not find the results we predicted for our main hypotheses. Participants who received touch were not more willing to sacrifice (as measured by the behavioral or our self-report measure) compared to those who did not receive touch, and we did not find an interaction such that those who received touch in the high intimacy condition were the most willing to sacrifice or that those who received no touch in the high intimacy condition were the least willing to sacrifice. It is possible that the

theoretical model we used may need to be revised, although given prior research showing that touch promotes security and constructive conflict behaviors (Jakubiak & Feeney, 2016a; 2019), we suspect that our null findings may be due to methodological issues. We describe limitations of our design later in this report that explain why we did not find our expected results. In addition, we may have underestimated the influence of other moderators, such as the gender of the target.

In the current study, women who received touch were less likely to sacrifice compared to men in the same condition. This finding may feel counterintuitive theoretically, given what past literature would suggest about how women are more communal and would be theoretically more willing to sacrifice for their partner to maintain the relationship (Impett & Gordon, 2008; Righetti & Impett, 2017; Spence, Helmreich, & Holahan, 1979). On the other hand, looking at Jakubiak and Feeney's (2017) model, one consequence of receiving affectionate touch is the increased expectation that social support will be available. This outcome would make sense given our findings, and perhaps the female participants who received touch in our sample assumed their partner would be available to help, thus felt more comfortable giving their partner more tickets (and gave fewer to themselves) because their partner would be willing step in and do the speech task.

However, it is still unclear why this would only influence female targets and not the male targets. Another factor to consider is the nature of the sacrifice task itself, which may have played a role in male targets giving more tickets to themselves than female targets when receiving touch. Our marginal finding that male participants (regardless of condition) reported higher willingness to sacrifice on our self-report measure may support this idea as well. The male gender role encourages heroic behavior, such as saving someone from potential danger, while the female gender role emphasizes more nurturing forms of helping

and caregiving (Eagly & Crowley, 1986). It is possible that sacrificing in our task was viewed as more heroic and may appeal more to males because they would be saving their partner from the danger of giving a speech by giving themselves more tickets. Although not reported in this study, we did find that male targets receiving touch also reported marginally higher normative motives for dividing the tickets than female targets who received touch. For example, male targets were more likely to divide the tickets according to what they felt they were "supposed to do" or they felt "obligated to divide the tickets in a certain way." The findings regarding the motives to divide the tickets may provide some insight about how our sacrifice task specifically affected male targets.

None of our exploratory relational variables mediated the relationship from touch and intimacy level to willingness to sacrifice, but we did find that those who received touch reported marginally higher PPR than those who did not receive touch, and this finding was trending to what we expected. This finding does align with one past study that found that touch promoted intimacy and foster responsiveness (Debrot et al., 2013). This trend may also suggest that touch can be equally powerful across different intimate contexts, but it may function differently. As we speculated before, touch can be powerful when it is responding to a need for support, but touch may also be meaningful in low intimacy settings because it can be a sign of spontaneous, genuine love and care that is not dependent on responding to a specific need. These interpersonal variables as a whole, however, may not have functioned as we predicted, again, due to methodological limitations, which we describe next.

Limitations and Future Directions

One limitation this study has is the activity used to manipulate intimacy. Although the manipulation checks for intimacy were successful in leading writers to disclose the expected

type of information, intimacy had no effect on any of our outcomes. This lack of effect may be due to the self-centered nature of the writing task. While activities meant to foster intimacy typically involve a conversation with another person (Aron et al., 1997; Reis & Shaver, 1988), for this study, we chose to have targets write in response to prompts that varied on intimacy level. We chose to not have participants talk so that we can make inferences on the effects of touch only without the effects of verbal communication. As a result, targets were more focused on their writing than on their partner. The benefits of intimacy, or any effect of intimacy, occur when there is some form of communication that occurs back and forth *between* partners (Reis & Shaver, 1988). Although the partners did read the target's writing throughout the activity, because their touch was manipulated to either be provided throughout the activity or to not occur at all, partners may not have been able to communicate their feelings completely or accurately. In addition, because we instructed targets to focus on answering the writing prompts, touch from one's partner may have been perceived as interfering. Although writers did write about more or less intimate topics, we do not have evidence that this writing created an *interpersonal* feeling of intimacy or vulnerability. In fact, intimacy level also had no effect on state security, IOS, closeness, or PPR, suggesting that the manipulation did not create the higher intimacy context as intended.

The nature of our sacrifice measure is also a limitation in this study. Offering to give yourself more tickets to do a stressful task in place of your partner is not the most representative of sacrifices that take place in daily life, although we would argue that dividing the tickets provides a psychologically valid method of measuring willingness to sacrifice. Targets were told that the person who will be chosen to do the speech task will be selected by drawing a ticket from the raffle, meaning how the targets divided the ticket had a direct impact on who would be chosen to do the task and represents how much of a risk or

cost they were willing to take for their partner. Our self-report measure, however, only asked hypothetically how willing the target would be to replace their partner if they were selected and may not reflect their true behavior. With our self-report measure, it was easier for participants to report a higher number when their answer to this measure did not directly decide who will be chosen for the task. Also, when we asked how willing targets would be to take their partner's place, we are explicitly asking them about a decision that can help their partner, thus targets may be more likely to engage in impression management and want to self-present in a way that makes them look like a better partner. This self-presentation issue was not as explicit in our ticket task, where targets are just asked to divide the tickets without directly asking if they would be willing to make a sacrifice. In fact, there may have been a ceiling effect with our self-report measure of willingness to sacrifice (M = 5.98 out of a 7-point scale, SD = 1.44), where 54.5% of our targets reported a 7, that they definitely would switch with their partner, and the distribution is heavily negatively skewed.

Also, the outcome of the target's decision during this activity only lasted to the end of the study, but sacrifices with more permanent consequences, such as moving to another country, may be more impactful and may tap into our constructs of interest more accurately when the decision has to be taken more seriously. However, even smaller daily sacrifices can accumulate and have the impact of a major sacrifice (Impett & Gordon, 2008), so it may still be worth it to study how couples respond to even small-scale sacrifices, especially across time. Future studies may find it beneficial to track touch behaviors, state intimacy, and sacrifices made per day in a daily diary study to see how not only sacrifices but also the effects of touch in settings varying in intimacy can add up across a certain duration of time.

As mentioned before, making a sacrifice in our study may have appealed more to male targets compared to female targets. Since we speculate that the nature of the task may

encourage sacrifice for those who embody more of the male gender role than the female role, other studies should examine how to manipulate factors of the sacrifice to elicit difference responses from males and females. For example, a task that may encourage sacrifice from those who are more feminine and communal may involve spending more time doing an interpersonal task that would benefit their partner (Eagly & Crowley, 1986; Impett & Gordon, 2008).

In addition, we acknowledge that even though we expected state security, IOS, closeness, and PPR to mediate the relationship from touch to willingness to sacrifice, these measures came *after* the sacrifice task. Although we lose temporal accuracy, we wanted to make sure that we captured the effects of touch and intimacy context on willingness to sacrifice. Therefore, we chose to have the sacrifice activity immediately after the touch and intimacy context manipulation, and we recognize that our measures of state security, IOS, closeness, and PPR may have been as a result of the ticket decision and not of the touch or intimacy level directly. Future studies could implement a design where the touch manipulation occurs, the measure of the mediators is given immediately afterwards, and then the touch manipulation is repeated before measuring the outcome variable of interest, such as how Jakubiak and Feeney (2019) had couples hold hands before measuring their mediators of interest and then during a conflict discussion, where then they measured their outcome variables (conflict behaviors and stress).

The affectionate touch model (Jakubiak & Feeney, 2017) we used for this study only makes predictions for receiving affectionate touch, not providing it. Engaging in affectionate touch involves both providing and receiving though, so it is important to see what touch providers are experiencing and how they would feel as a result of initiating touch. There has also been research showing that those who provide touch (Debrot et al., 2013; Field,

Hernandez-Reif, Quintino, Schanberg, & Kuhn., 1998) and support in general also experience benefits, such as feeling more satisfied in the relationship, improved affect, and even better health (Kogan et al., 2010; Post, 2005). However, there may be differences in what is psychologically occurring in touch providers because instead of perceiving that one's partner is being responsive, now the touch provider has the responsibility of signaling responsiveness (Debrot et al., 2013). In this case, touch providers may be more willing to sacrifice to further communicate responsiveness or they may be less willing because they have already signaled responsiveness and may not feel the need to sacrifice. Although not reported in this study, our confederates also had an opportunity to do the ticket-sacrifice task and received the same post-sacrifice questionnaire as the target, so we plan to conduct analyses for the touch provider for a future study.

We also had limitations due to the nature of our sample. Our participants scored very highly on relationship quality (M = 6.21 out of a 8-point scale, SD = 0.91), frequency of touch (M = 5.92 out of a 7-point scale, SD = 1.31), and comfort with touch (M = 6.59 out of a 7-point scale, SD = 0.84), so our results would not generalize to relationships low in relationship quality, individuals who engage in touch less, or individuals who are uncomfortable with receiving touch. We have reason to think that our results would not apply to these populations. Past research has shown that those in lower quality relationships tend to have distress-maintaining attributions or assume that their partner is not typically motivated by love or care (Bradbury & Fincham, 1990). Holding these unfavorable attitudes about one's partner can lead to less favorable interpretations of touch, such as using touch to manipulate or control the partner instead. Also, those with an avoidant attachment orientation tend to be more uncomfortable with touch and may be more likely to interpret the touch as invasive instead of as caring (Brennan, Wu, & Loev, 1998; Chopik et al., 2014). More work

is needed to determine whether affectionate touch would have helpful or deleterious effects on those who are not familiar with engaging in touch in their relationships.

One last critical variable to examine in future studies is one's motives to make a sacrifice. Past research has shown that not all sacrifices are created equal; *why* a partner makes a sacrifice can determine whether the sacrifice promotes relationship well-being (Impett, Gable, & Peplau, 2005; Impett & Gordon, 2008; Kogan et al., 2010, Mattingly & Clark, 2012; Righetti & Impett, 2017; Visserman, Righetti, Impett, Keltner, & Van Lange, 2017). For example, Impett et al. (2005) and Mattingly & Clark (2012) found that approach-oriented sacrifices, or sacrifices where the partner wanted to achieve a goal with their sacrifice (such as wanting to help their partner), were positively associated with individual well-being, relationship quality, and relationship satisfaction. On the other hand, avoidant-oriented sacrifices, or sacrifices where the partner wanted to avoid a negative consequence (such as making a sacrifice so their partner would not be mad at them), had a negative association with individual well-being and relationship quality (Impett et al., 2005; Mattingly & Clark, 2012). Thus, although the act of sacrifice may be the same, the reasons a partner performs this sacrifice can dramatically change individual and relationship outcomes. Motives also matter for the person on the receiving end of the sacrifice. Visserman et al. (2017) found that perceived sacrifice motives influence feelings of gratitude, such that perceiving that one's partner is partner-focused and approach-oriented leads to more gratitude for the partner, but perceiving that the sacrifice was self- or relationship-focused was not associated with gratitude for the partner. Although no study has examined how touch influences motives, we did measure motives for why participants divided the tickets the way they did, and this data will be reported in a future study. Considering the influence of motives on how willingness to sacrifice promotes relationship well-being and how very few studies

examined how touch can influence motives for pro-relationship behaviors, future studies would benefit from examining how touch can impact motives to act altruistically to help a partner (or egoistically to serve self-interests instead).

Conclusions

This study is the first to experimentally manipulate both the receipt of affectionate touch and the intimacy of the context to examine how these two variables would influence willingness to sacrifice. Although we did not find support for our main hypotheses, we did find gender differences in how willing female and male targets were in how many tickets they gave to themselves in our ticket task, and this finding may shed light onto how gender roles can influence decision-making regarding sacrifices in one's relationship. In addition, although not significant, we offered preliminary evidence that receiving touch has the potential to increase PPR. This finding suggests that touch can be an effective mode of conveying understanding, validation, and caring to one's partner. Our manipulation of touch also shows the capacity of mundane, everyday touch behaviors, such as having an arm around a partner or resting one's head on a partner's shoulder, as we found our effects by simply asking participants to engage in touch behaviors they normally engage in life outside of our study.

Conflicts of interests of all sizes and types are inevitable in romantic relationships, and how couple members decide whether to make a sacrifice has implications on the relationship. Given the benefits of willingness to sacrifice in romantic relationships, exploring factors that can encourage sacrifice is integral in understanding how the sacrifice process works and why it can help maintain relationships. This study also contributes to the affectionate touch literature by providing support of how touch can influence pro-relationship

tendencies, potentially via PPR. By studying the dynamics of how touch functions in romantic relationships and how it can promote pro-relationship behaviors, we hope this study can demonstrate the impact of everyday touch and the power it has to foster relationship well-being.

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Table 1

Means and Standard Deviations for Dependent Variables By Condition

	Touch		No Touch	
	Low Intimacy	High Intimacy	Low Intimacy	High Intimacy
Sacrifice Outcomes				
Tickets Given to Self	4.35 (2.58)	4.41 (1.80)	4.81 (2.24)	4.24 (2.21)
Self-Reported Willingness	6.06 (1.35)	5.59 (1.43)	6.23 (1.52)	6.03 (1.48)
Cost to Self	2.71 (1.27)	3.34 (1.57)	3.32 (1.82)	3.34 (1.76)
Benefit to Partner	4.15 (1.78)	4.52 (1.46)	4.19 (1.66)	4.31 (1.91)
Exploratory Relational Variables				
State Security	4.34 (1.06)	4.14 (1.18)	4.06 (1.07)	4.23 (1.04)
IOS	5.18 (1.38)	4.83 (1.47)	5.03 (1.30)	4.93 (1.22)
Closeness	5.54 (1.28)	4.39 (0.94)	5.60 (1.00)	5.40 (1.01)
PPR	7.87 (1.12)	7.97 (0.92)	7.57 (1.14)	7.44 (1.53)

Standard deviations in parentheses

Table 2

Intercorrelations Between All Study Variables

	1	2	3	4	5	6	7	8	9	10	11
Independent Variables											
1. Touch	–										
2. Intimacy	-.03	–									
3. Gender	-.04	.07	–								
Sacrifice Outcomes											
4. Tickets Given to Self	-.03	-.05	.14	–							
5. Self-Reported Willingness	-.10	-.11	.16^{+}	.36***	–						
6. Cost to Self	-.10	.11	-.09	.20*	.10	–					
7. Benefit to Partner	.02	.07	.20*	.59***	.41***	.17^{+}	–				
Exploratory Relational Variables											
8. State Security	.05	-.01	.01	-.01	.31**	-.24**	.16^{+}	–			
9. IOS	.01	-.09	-.03	-.04	.15^{+}	.00	-.09	.00	–		
10. Closeness	-.02	-.08	.07	.05	.27**	-.05	.19*	.39***	.41***	–	
11. PPR	.17^{+}	-.01	-.10	.04	.13	.01	.12	.33***	.19*	.52***	–
M	–	–	–	4.46	5.98	3.16	4.28	4.20	5.00	5.49	7.72
SD	–	–	–	2.23	1.44	1.61	1.70	1.08	1.34	1.06	1.20

$^{+}p < 0.10$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$

Touch coded as 0 = no touch, 1 = touch; Intimacy coded as 0 = low intimacy, 1 = high intimacy; Gender coded as 0 = female, 1 = male

Table 3

Summary of F-Values for Dependent Variables

	Outcomes							
	Sacrifice Outcomes				Exploratory Relational Variables			
	Tickets Given to Self	Self-Reported Willingness to Sacrifice	Cost to Self	Benefit to Partner	State Security	IOS	Closeness	PPR
Touch	0.01	1.39	0.65	0.39	0.06	0.07	0.02	3.80^{+}
Intimacy	0.74	1.66	2.29	0.46	0.00	1.36	0.98	0.06
Gender	1.92	2.95^{+}	4.87*	1.71	0.39	0.17	0.38	2.14
Touch * Intimacy	0.20	.52	0.89	0.01	1.03	0.10	0.01	0.35
Touch * Gender	6.81*	.06	0.33	2.31	1.00	0.41	0.40	2.00
Intimacy * Gender	2.51	1.25	0.01	0.65	3.74^{+}	1.68	0.12	2.19
Touch* Intimacy * Gender	2.51	0.02	0.27	2.25	0.85	0.03	0.03	2.68

$^{+}p < 0.10$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$

Figure 1. *Scaled-Down Model of Relational-Cognitive Changes from Receiving Affectionate Touch (Jakubiak & Feeney, 2017)*

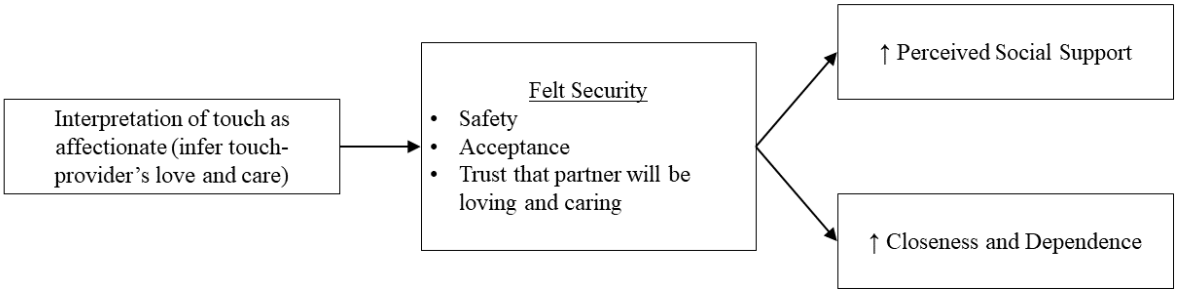


Figure 2. *Theoretical Model of Hypotheses*

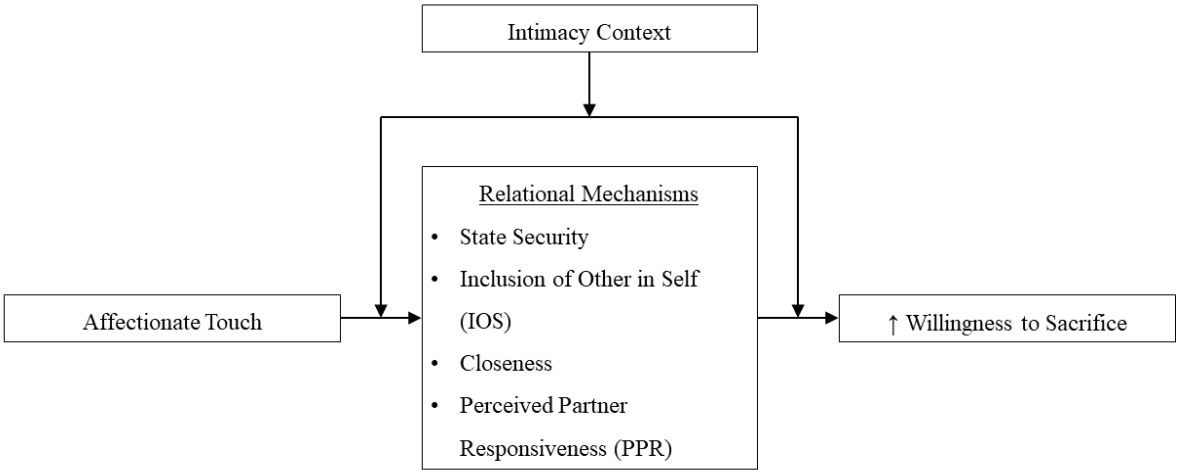
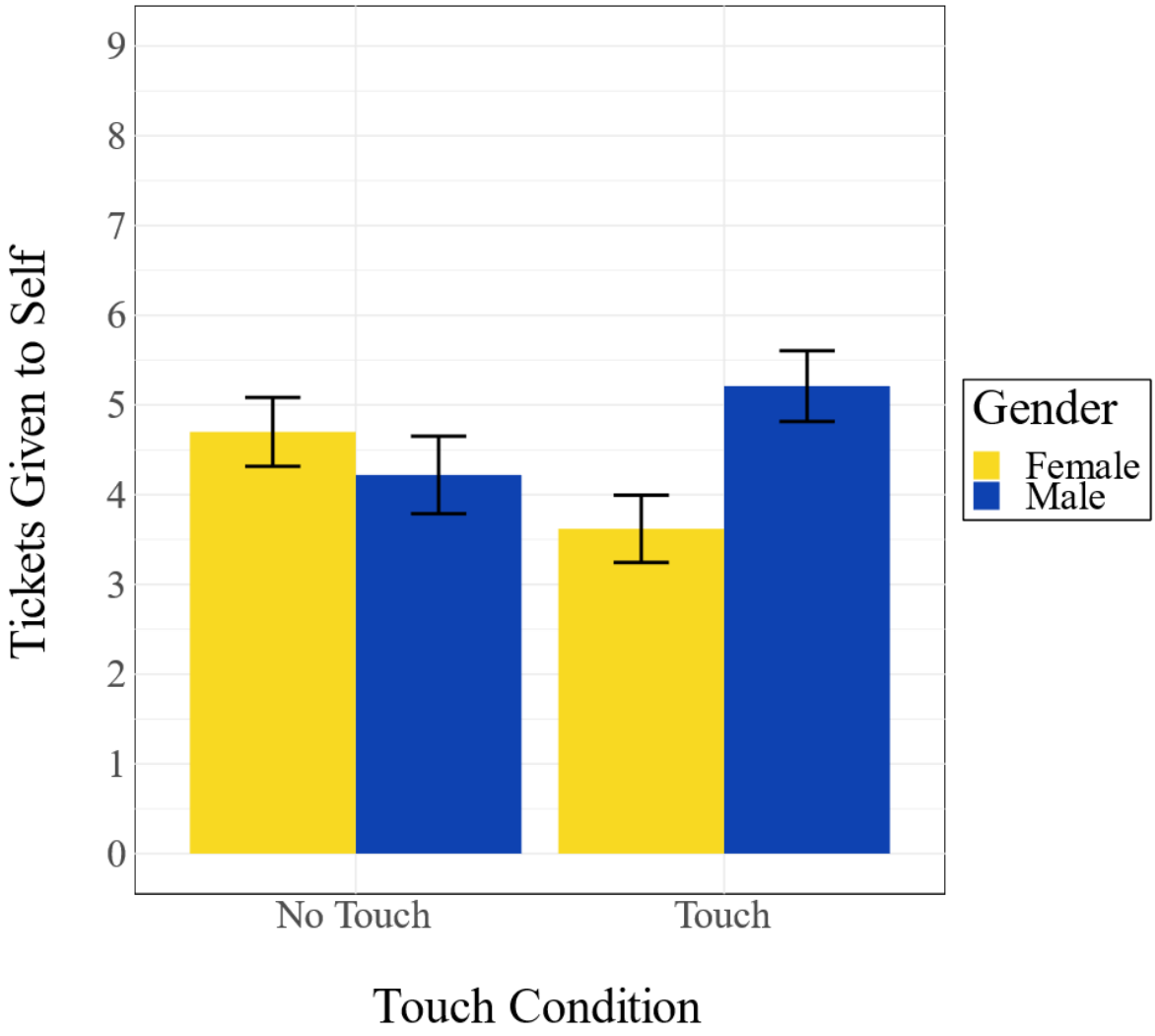
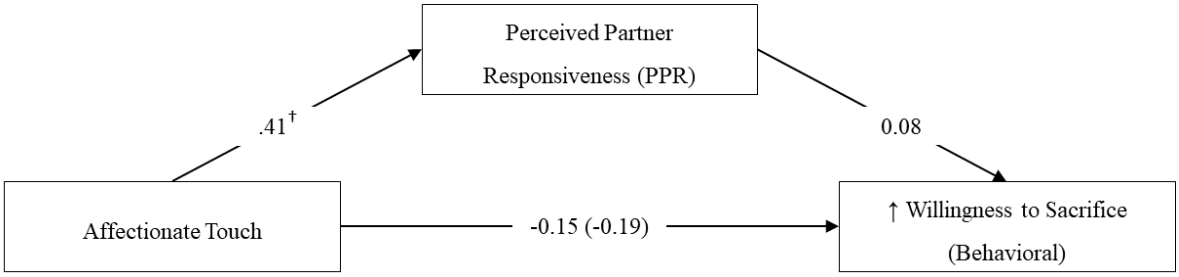


Figure 3. *Effect of the Interaction between Touch and Gender on Tickets Given to Self*



Error bars indicate standard error values

Figure 4. *Summary of the regression analyses testing the exploratory mediation hypothesis*



Path coefficients are unstandardized regression coefficients. Coefficient in parentheses is the remaining direct effect.
$^{+}p < 0.10$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

Appendix A

Age

_____

Gender (Select all that apply)

- ☐ Female
- ☐ Male
- ☐ Transgender
- ☐ Gender neutral / Non-binary
- ☐ Other (please specify) _____

Education (please check one)

- ○ Did not complete high school
- ○ Completed high school
- ○ Some college credits
- ○ Associate's degree
- ○ Bachelor's degree
- ○ Some graduate school
- ○ Professional degree (M.S., M.D., Ph.D., etc.)

Everyone has different talents and skills. Please rate your talent/skills in each of the following areas by selecting a number to the right of each item.

	1 (Very Weak)	2	3	4	5	6 (Very Strong
Athletics	○	○	○	○	○	○
Music	○	○	○	○	○	○
Mathematics	○	○	○	○	○	○
Art or Design	○	○	○	○	○	○
Public Speaking	○	○	○	○	○	○
Computers	○	○	○	○	○	○
Writing	○	○	○	○	○	○
Social Skills	○	○	○	○	○	○

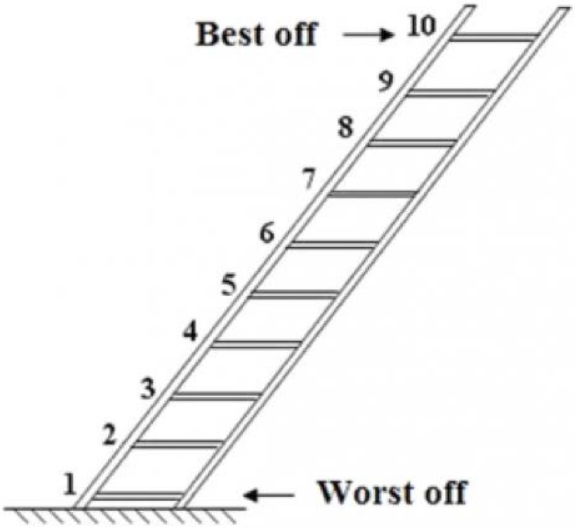
Which of the following classifications best applies to you?

- ○ American Indian/Alaska Native
- ○ Black or African American
- ○ Asian/Pacific Islander
- ○ Latino/Hispanic
- ○ White (Caucasian)
- ○ Other (please specify) _____

Your ethnicity

- ○ Not Hispanic or Latino
- ○ Hispanic or Latino

Here is a picture of a ladder. Think of this ladder as representing where people stand in their communities. People define community in different ways. Please define it in whatever way is most meaningful to you. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, and worst jobs or no job.



Based on the picture above, where on the ladder do you feel you personally stand in your community?

- ○ 10 - Highest/Best off
- ○ 9
- ○ 8
- ○ 7
- ○ 6
- ○ 5
- ○ 4
- ○ 3

○ 2

○ 1- Lowest/Worst off

How long have you been romantically involved with your partner?

○ Years _____

○ Months _____

Are you and your partner currently living together?

○ Yes

○ No

Skip To: Rel_Cheat If Are you and your partner currently living together? = No

---

Approximately how long have you been living together?

○ Years _____

○ Months _____

Are you romantically involved with any other people right now (besides your romantic partner)?

○ Yes

○ No

How You Feel About Your Relationship with Your Partner

Please take a moment to think about your relationship with your partner, and answer the questions below.

1. All things considered, how satisfied do you feel with your relationship?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not At All Satisfied | Somewhat Satisfied | Completely Satisfied

2. Do you feel committed to maintaining your relationship with your partner?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not At All Committed | Somewhat Committed | Completely Committed

3. How does your relationship compare to your ideal?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Far From Ideal | Somewhat Ideal | It Is Ideal

4. All things considered, how happy are you in your relationship?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not At All Happy | Somewhat Happy | Completely Happy

5. How often do you and your partner get on each other's nerves?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Never | Sometimes | Every Day

6. How often does your partner make you feel angry?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Never Sometimes Every Day

7. How likely is it that your relationship will end in the near future?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not At All Likely to End Somewhat Likely to End Extremely Likely to End

8. How likely is it that you will become romantically involved with someone other than your partner within the next year?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not At All Likely Somewhat Likely Extremely Likely

9. Do you feel attached to your relationship with your partner (like you are "linked" to your partner), whether or not you're happy with the relationship?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not At All Attached Somewhat Attached Completely Attached

10. How much tension is there between you and your partner?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

None At All A Moderate Amount A Great Deal

11. Do you ever have fantasies about what life might be like if you weren't with your partner (i.e., how often do you wish that you weren't in a relationship)?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Never Have Such Fantasies	Sometimes Have Such Fantasies	Often Have Such Fantasies

12. How close do you feel to your partner? That is, do you feel that you can share your deepest thoughts and feelings with your partner and that he/she understands you?

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not at all Close	Somewhat Close	Extremely Close

13. My alternatives to our relationship are attractive to me (dating another, spending time with friends, being on my own, etc.)

0 -------- 1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7 -------- 8

Not at all Attractive	Somewhat Attractive	Completely Attractive

Activities You Do with Your Partner

How typical or common is it for you and your partner to...

... touch while you are relaxing together, like when you are watching TV?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... touch (such as holding hands) when you are in public?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... work in the same space?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... compliment each other?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... argue or fight over something one of you has done to the other?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... eat meals together?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

How typical or common is it for you and your partner to...

... watch movies or TV shows together?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... hang out with friends together?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... celebrate, acknowledge, or praise each other's accomplishments?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... talk about stressful topics together?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

... say affectionate phrases, such as "I love you," to each other?

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Never Somewhat often Very often

I am usually very comfortable...

... being complimented by my partner.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... being touched by my partner.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... touching my partner.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... receiving help from my partner.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... reaching out to my partner when I am stressed or in need of support.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

I am usually very comfortable...

... leaving my partner alone when they need space.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... providing support to my partner when they need it.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... cheering on my partner for their accomplishments.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... opening up to my partner about my personal feelings.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

... sharing positive things that have happened to me with my partner.

1 -------- 2 -------- 3 -------- 4 -------- 5 -------- 6 -------- 7

Not at all Comfortable | Somewhat Comfortable | Completely Comfortable

Appendix B

Writing Task Warm-Up

Prompt: Please write about what you have done so far today. If you have extra time, write about what you will do after this study.

Appendix C

TOUCH CONDITION

****

The instructions I'm about to give may seem a little weird, but I will explain the purpose of this at the end of the study. If you feel comfortable, please play along with the instructions. Here is what will happen. For the next activity, your partner will write about themselves in response to a few prompts. While your partner is writing, please sit with your partner. At the same time, please also touch them in a warm and affectionate manner, as if you were relaxing at home. Some examples include resting your hand on their shoulder, having your arm around them, leaning your head on their shoulder, or something similarly affectionate. You should do whatever would be normal and comfortable to you and your partner as long as it doesn't interrupt their writing. If it would be unnatural or abnormal for you to touch them continuously, you can take breaks, but please try to touch them in some way throughout the writing activity. Although, if your partner pulls away from you repeatedly or asks you not to touch, you should stop. Please do not talk to your partner during the sessions because your partner will be working, but feel free to read what your partner is writing to pass the time. You also do not have to help with this study if you would prefer not to. Would you be willing to help us out with this study? *[Wait for response]*

[If yes, continue. If no or hesitant, give opportunity to ask questions and skip this if the participant does not wish to continue.]

Great! Please do not tell your partner what I told you to do. It's important that your partner believes that your actions are your choice. At the end of the study, I will tell them that I asked you to sit with them and to touch them for the study. Do you have any questions about what you need to do? *[Wait for response and answer any questions]*

Okay, great! So as a recap, I would like you to touch your partner affectionately during the next activity. You can start as soon as they begin the writing. I'll go see if your partner is ready for the next activity.

****

NO TOUCH CONDITION

****

The instructions I'm about to give may seem a little weird, but I will explain the purpose of this at the end of the study. If you feel comfortable, please play along with the instructions. Here is what will happen. For the next activity, your partner will write about themselves in response to a few prompts. While your partner is writing, please sit with your partner. Other than that, just do whatever is natural and comfortable for you during this time. Please *do not touch* your partner or talk to them during the session because they will be working, but feel free to read what your partner is writing to pass the time. You also do not have to help with this study if you would prefer not to – would you be willing to help us out with this study? *[Wait for response]*

[If yes, continue. If no or hesitant, give opportunity to ask questions and skip this or end session if the participant does not wish to continue.]

Great! Please do not tell your partner what I told you to do. It's important that your partner believes that your actions are your choice. At the end of the study, I will tell them that I actually asked you to sit with them. Would you be okay with doing this for the study? *[Wait for response]* Do you have any questions about what you need to do?

Okay, great! So as a recap, I would like you to sit with your partner on the same couch without touching or talking to them during the next task. I'll go see if your partner is ready for the next activity.

****

Appendix D

Low Intimacy Prompts

Writing Task

Prompt #1: What would constitute a “perfect” day for you?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Prompt #2: Discuss your biggest pet peeve, or something that particularly annoys you.

Prompt #3: If you had to go to a school other than UCSB (or move away from California if you are not a student), where would you go, and what would you miss the most about UCSB (or California)?

Prompt #4: What is the best TV show or movie you've seen in the last month?

High Intimacy Prompts

Writing Task

Prompt #1: What is the greatest accomplishment of your life?

Prompt #2: What is one of your saddest memories?

Prompt #3: Share a time when you were disappointed in yourself.

Prompt #4: What is one of your most treasured memories?

Appendix E

Your Decision About the Raffle Tickets

Please indicate the number of tickets you gave to you and your partner.

○ Me _____

○ My Partner _____

Regardless of how you divided the tickets, let's say your partner is randomly assigned to do the speech task.

If your partner decides that they do not want to perform this speech task, would you be willing to switch places with your partner and perform the speech task in their place?

1----------2----------3----------4----------5----------6----------7

I Definitely WOULD NOT Switch	Indifferent to Switching	I Definitely WOULD Switch

Pros and Cons of How You Divided the Tickets

To what extent do you think the way you divided the tickets will **BENEFIT** your **PARTNER**?

1----------2----------3----------4----------5----------6----------7

Not At All Benefited My Partner	Somewhat Benefited My Partner	Definitely Benefited My Partner

To what extent do you think the way you divided the tickets will impose a **COST** to **YOU**? Examples of costs include doing an activity you don't want to do or losing the chance to do an activity you would want to do.

1----------2----------3----------4----------5----------6----------7

Did Not Take Any Cost At All	Took On Somewhat A Cost	Definitely Took On A Cost

How Do You Feel Right Now?

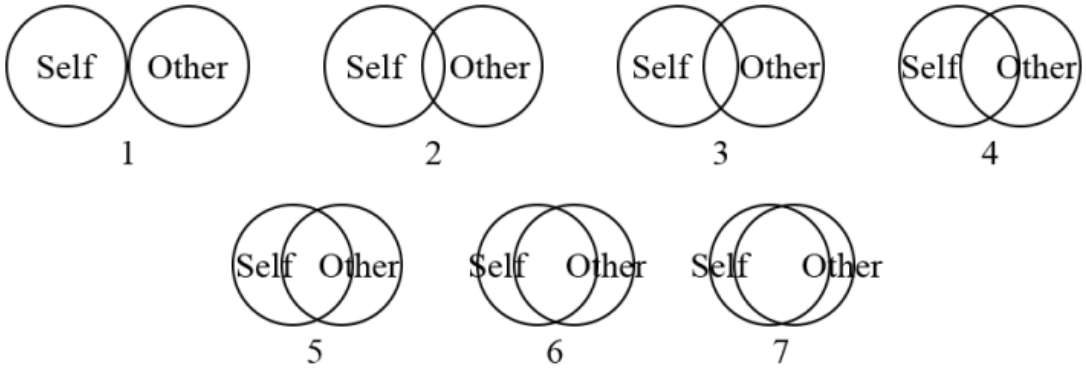
Please think about how you are feeling ***right now***. Then rate the extent to which you feel each of the following emotions by placing a number between 1 and 6 in the space to the right of each one. Please be honest so that we can understand how you truly feel.

1 (Not At All)------2------3------4------5------6 (Very Much)

- ○ Comforted _____
- ○ Bored _____
- ○ Anxious _____
- ○ Safe _____
- ○ Worried _____
- ○ Supported _____
- ○ Angry _____
- ○ Scared _____
- ○ Loved _____
- ○ Excited _____
- ○ Protected _____
- ○ Attentive _____
- ○ Nervous _____
- ○ Encouraged _____
- ○ Sheltered _____
- ○ Upset _____
- ○ Threatened _____

Using the rating scale below, please indicate which of the following images best describes your relationship with your partner ***right now***.

1------2------3------4------5------6------7



Please indicate your agreement with the following statements according to how you are feeling ***right now***:

	1 (Not At All)	2	3	4 (Somewhat)	5	6	7 (Completely)
I feel a sense of "oneness" with my partner.	○	○	○	○	○	○	○
I feel like my partner and I are on the same team.	○	○	○	○	○	○	○
I feel more connected with my partner than usual.	○	○	○	○	○	○	○
I feel close to my partner.	○	○	○	○	○	○	○

Your Thoughts and Feelings About Your Partner

Please answer the following questions about how you feel toward your partner ***RIGHT NOW***.

1----------2----------3----------4----------5----------6----------7----------8----------9

Not At All True	Somewhat True	Moderately True	Very True	Completely True

***RIGHT NOW*, my partner…**

1. … sees the "real" me…….. _____
2. … "gets the facts right" about me…….. _____
3. … respects me, shortcomings and all……. _____
4. … knows me well…….. _____
5. … values and respects the whole package that is the "real" me…… _____
6. … understands me…….. _____
7. … really listens to me…….. _____
8. … expresses liking and encouragement for me…….. _____
9. … seems interested in what I am thinking and feeling…….. _____
10. … values my abilities and opinions……. _____
11. … is on "the same wavelength" with me. …….. _____
12. … is responsive to my needs…….

Reflection of Your Experiences

The following questions are about your experience participating in this study.

For the writing task, which one of the following roles were you assigned?

- ○ Target
- ○ Partner Watching Target

Reflection of Your Experiences

The following questions are about your experience participating in this study.

Please think back to the writing task. To what extent did you write about...

	0 (Not At All)	1	2	3	4	5	6	7 (Very Much)
... negative feelings?	○	○	○	○	○	○	○	○
... positive feelings?	○	○	○	○	○	○	○	○
... personal or private information?	○	○	○	○	○	○	○	○
... descriptive or objective information about yourself?	○	○	○	○	○	○	○	○
... emotional information about yourself?	○	○	○	○	○	○	○	○

During the same writing task, to what extent did your partner...

	0 (Not At All)	1	2	3	4	5	6	7 (Very Much)
... talk to you while were you writing?	○	○	○	○	○	○	○	○
... touch you while you were writing?	○	○	○	○	○	○	○	○
... know about or look at what you were writing?	○	○	○	○	○	○	○	○

What do you think was the purpose of this study?

_____

_____

_____

_____

_____