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Can Affectionate Touch Increase Intrinsic and Altruistic Motivation to Sacrifice in Romantic
Relationships?

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Abstract

Willingness to make sacrifices within a romantic relationship can indicate the well-being and stability of that relationship. Why people make these sacrifices are fueled by different types of motivations, such as whether they truly enjoy taking care of their partner (intrinsic and altruistic motivations) or whether they feel pressured or obligated to make a sacrifice (extrinsic motivation). The hypotheses were that those who received affectionate touch would be more willing to sacrifice and have a higher intrinsic and altruistic motivation to do so than those who do not receive touch. Affectionate touch also was predicted to promote willingness to sacrifice by making one's relationship more salient and thus leading one to be more focused on their partner's needs. Inconsistent with expectations, receiving no touch led to more altruistic motivation than receiving touch. Although touch did not influence participants' relationship salience, the higher a participant's relationship salience was, the more altruistic their motives were. In addition, motivations for sacrifice predicted willingness to sacrifice in expected ways. While our hypotheses were not supported in terms of touch, we discuss possible explanations and the implications of other results.

Can Affectionate Touch Increase Intrinsic and Altruistic Motivation to Sacrifice in Romantic Relationships?

In romantic relationships, couple members must at some point make sacrifices for their partner because interests of the couple members are bound to conflict (Van Lange et al., 1997a; Van Lange et al., 1997b). In fact, research has shown that willingness to make sacrifices can influence relationship outcomes (Etcheverry, Le, Wu, & Wei, 2013; Mattingly & Clark, 2010; Totenhagen, Curran, Serido, & Butler, 2013; Van Lange, Agnew, Harinck, & Steemers, 1997a; Van Lange et al., 1997b). Studies have found willingness to sacrifice positively correlated with relationship satisfaction and commitment in various dating populations (Etcheverry et al., 2013; Mattingly & Clark, 2010; Van Lange et al., 1997a; Van Lange et al., 1997b; Wieselquist, Rusbult, Foster, & Agnew, 1999). Van Lange et al. (1997b) extended these results by showing in a longitudinal study that willingness to sacrifice predicted commitment and relationship satisfaction over three time points 6-8 months apart. They also found that earlier willingness to sacrifice and commitment predicted later dyadic adjustment, which is an indicator of how healthy and satisfying a relationship is. Other research has also examined moderators of the quality of relationship sacrifices, such as the difficulty of the sacrifice (e.g., Powell & Van Vugt, 2003), concurrent stressors (Totenhagen et al., 2013), relationship characteristics (e.g., Van Lange et al., 1997a), and individual characteristics (e.g., Etcheverry et al., 2013).

Although much work has been done on how various situational, relational, and personal characteristics influence willingness to sacrifice, research considering how people's motivations shape sacrifices is lacking. Motivation is important to consider because certain motivations have been shown to predict certain behaviors and influence relationship and individual well-being (e.g., Feeney & Collins, 2003; Gaine & La Guardia, 2009; Ryan & Deci, 2000). Finding a

method to promote these kinds of motivations can be helpful in maintaining relationships in tougher times when making sacrifices may be necessary. For this investigation, we experimentally manipulated an intervention, specifically affectionate touch, to see if it could influence motivations and willingness to sacrifice.

Motivation: What Drives Us to Behave in Certain Ways

While motivation can be generally described as what drives our behavior, there are many perspectives on how people are motivated. For example, those with altruistic motivation prioritize the welfare of others over themselves (Feeney & Collins, 2003; Feeney, Collins, Van Vleet, & Tomlinson, 2013). The approach-avoidance perspective describes how and why people achieve positive outcomes via approach motives as well as providing explanations for why we avoid negative consequences via avoidance motives (Impett, Javam, Asyabi-Eshghi, & Kogan, 2013). These types of motivations have been shown to be correlated with positive outcomes such as relationship satisfaction (e.g., Blais, Sabourin, Boucher, & Vallerand, 1990), relationship quality (e.g., Impett, Gable, & Peplau, 2005), support provision (e.g., Feeney, Van Vleet, Jakubiak, & Tomlinson, in press), and personal well-being (e.g., Impett et al., 2013).

Altruistic and approach motivations have also been shown to positively correlate with responsive caregiving and pro-relationship behaviors (Feeney & Collins, 2003; Feeney et al., in press, Impett et al., 2013), which include making sacrifices because sacrificing is a way to take care of one's partner and to maintain the relationship (Mattingly & Clark, 2010). For example, Feeney & Collins (2003) categorized various motivations for caregiving according to how altruistic or egoistic they were and then analyzed whether motivations predicted actual caregiving behaviors. They found that more altruistic motives predicted more responsive caregiving behaviors. Kogan et al. (2010) found in dating couples that the greater communal

motivation (motivation to respond to a partner's need) participants had, the more likely they would feel positive emotions during their sacrifice. In addition, Impett et al. (2013) found that when dating participants acted based on approach motives, they felt more positively about the sacrifices they made. Although the participants who had communal and approach motives in these studies did not make more sacrifices than those who were not motivated in these ways, the sacrifices made were of better quality. On the other hand, Mattingly, Clark, & Cahill (2012) found that avoidance motives predicted sacrifice behavior and approach motives predicted accommodation, which is similar to sacrifice except that couple members do not perceive costs during accommodation like they do when sacrificing. Despite these different conclusions, approach motives in general promote helping one's partner in some form.

Some studies looking at altruistic and approach motivations have indicated that the reason why these motivations promoted positive outcomes is because participants truly wanted to take care of their partner and liked to take care of their partner as well (Feeney & Collins, 2003; Gaine & La Guardia, 2009; Impett et al., 2013). These reasons reflect another type of motivation: intrinsic motivation. Intrinsic motivation is defined as the degree someone performs an activity because they gain internal rewards out of what they are doing and thus are internally driven to behave in certain ways and perform certain actions (Blais et al., 1990; Deci & Ryan, 2008; Deci & Ryan, 2014; Ryan & Deci, 2000). In terms of sacrifices, examples of intrinsically motivated sacrifices include because one truly enjoys taking care of the partner, so they are willing to make sacrifices to help their partner, one likes to make their partner happy, etc. Extrinsic motivation, on the other hand, reflects the degree to which someone does an activity "in order to attain some separable outcome" not related to the performance of the activity (Ryan & Deci, 2000, p. 71). Reasons for externally motivated sacrifices can be that the person does not want to hear their

partner complain, the person feels obligated to make a sacrifice because of relationship norms, etc. Intrinsic motivation can be related to altruistic and approach motivations when one actively takes care of others to satisfy one's internal needs.

Surprisingly, there are only a couple studies that have related intrinsic motivation to relationship variables such as responsive caregiving (Gaine and La Guardia, 2009; Hadden, Rodriguez, Knee, & Porter, 2015). Gaine and La Guardia (2009) found that dating participants' global motivations to maintain their relationship influenced their proximal motivations to help their partner in various situations such as providing instrumental support to make the partner less stressed, which was the most similar situation to sacrifice. Hadden et al. (2015) examined relationship autonomy, "fully endorsing one's involvement in the relationship" (p. 359) without feeling forced or obligated to be in the relationship, as a measure for intrinsic motivation and how that related to support provision. Although they found that relationship autonomy was positively associated with support provision in a cross-sectional study and a two-week daily diary study, none of their support measures included items about sacrifices.

While there are many models of motivation that share similar constructs, we will focus specifically on altruistic (vs. egoistic), approach (vs. avoidance), and intrinsic (versus extrinsic) motivation in our investigation. Intrinsic motivation, in particular, has been shown to promote positive relationship outcomes such as relationship satisfaction (Blais et al., 1990; Gaine & La Guardia, 2009; Ryan & Deci, 2008), commitment (Gaine & La Guardia, 2009), and relationship well-being (Canevello & Crocker, 2010; Gaine & La Guardia, 2009; Knee, Patrick, Vietor, Nanayakkara, & Neighbors, 2002; Knee et al., 2013; Patrick, Knee, Canevello, & Lonsbary, 2007). Although no study has specifically tested the influence of intrinsic motivation on willingness to sacrifice, prior research on intrinsic motivation has implications for its relation

with making sacrifices. For example, intrinsic motivation has been associated with being more adaptable in one's relationships or more willing to support one's partner (Deci & Ryan, 2008; Gaine & La Guardia, 2009; Knee et al., 2002; Kogan et al., 2010). In addition, Knee et al. (2002) found that intrinsic motivation was associated with more self-reported positive coping strategies. While none of their items asked about sacrifices, making sacrifices can be a way to cope with a problem (Mattingly & Clark, 2010). Finally, Knee et al. (2013) proposed that the more intrinsically motivated people are, the less likely they are to avoid risks and the more protected they feel against potential rejection. Thus, intrinsic motivation can boost willingness to sacrifice because risk-avoidance and fear of rejection has been reduced.

Given that altruistic, approach, and intrinsic motivations have been linked with positive outcomes, we propose that these motivations will be linked with willingness to sacrifice as well. Another important question to address is how to promote altruistic, approach, and intrinsic motivations in close relationships. In particular, how can people become more intrinsically and altruistically motivated to sacrifice? While no study has considered what interventions can promote intrinsic motivation in romantic relationships, researchers have examined ways to promote intrinsic motivation in non-relational contexts. This research shows that people's motivations change according to how well their psychological needs are met (Deci & Ryan, 2014; Ryan & Deci, 2000). As more of these needs are fulfilled, the more likely one will become intrinsically motivated because one feels appropriately supported to do the things one truly wants to do (Patrick et al., 2007; Ryan & Deci, 2000; Ryan & Deci, 2014). In this investigation, we propose and test the idea that affectionate touch may be one means of increasing altruistic, approach, and intrinsic motivation, as well as willingness to sacrifice, in close relationships.

Affectionate Touch as a Solution

How can intrinsic, altruistic, and approach motivations, as well as willingness to sacrifice be promoted in close relationships? We propose that one way to achieve this is through affectionate touch with one's partner. In romantic relationships, affectionate touch is a form of nonverbal communication used to signal love, care, and acceptance, and this behavior is theorized to lead to pro-relationship behaviors such as sacrifices (Jakubiak & Feeney, 2016a). No prior research has considered whether touch increases positive motivations or willingness to sacrifice specifically. Affectionate touch has also been linked with other positive relational outcomes such as relationship satisfaction, commitment, low levels of conflict and distress, and relational persistence (Jakubiak & Feeney, 2016a). In terms of prosocial behaviors outside of romantic relationships, touch has been associated with an increase in helping between strangers (e.g. Guéguen & Fischer-Lokou, 2003) and cooperation between teammates in sports (e.g. Kraus, Huang, & Keltner, 2010). Given previous findings, we believe that affectionate touch can promote intrinsic and altruistic motivation to make sacrifices for one's partner as well.

Mechanisms Linking Affectionate Touch to Willingness to Sacrifice and Motivations for Sacrifice

While affectionate touch may have direct effects on intrinsic and altruistic motivation and willingness to sacrifice, what mediates these relationships? Relationship salience and positive relationship orientation (PRO) may be two mediators that can explain this relationship. We define relationship salience as the degree one is aware of their relationship or has the relationship on their mind. When one receives touch from their partner, researchers have theorized that one may (normatively) interpret this touch as “indicative of the touch provider's love and care” (Jakubiak & Feeney, 2016a, p. 3). This interpretation can make one's relationship and social connection more salient (Jakubiak & Feeney, 2016a), which can then contribute to an increase in

intrinsic and altruistic motivation and willingness to sacrifice because one is paying more attention to their partner. PRO is defined as how positively one feels about their partner, such as how much one trusts the partner. Like relationship salience, PRO can increase intrinsic and altruistic motivation, as well as willingness to sacrifice, because one is regarding the partner and relationship more positively and thus more likely to be concerned about their well-being (Jakubiak & Feeney, 2016a).

While no one has studied relationship salience, Lydon & Quinn (2013) proposed that attention to one's partner and relationship is necessary in order to be motivated and willing to sacrifice. More specifically, "one needs to attend to partner and relationship goals in order to evaluate personal goals in relation to the partner's and relationship goals" (Lydon & Quinn, 2013, p. 579). We propose that both relationship salience and PRO leads one to focus their attention on their partner and relationship, thus promoting intrinsic and altruistic motivation and willingness to sacrifice.

In this study, we assessed PRO as sensitivity to the partner's needs, felt security, empathic feelings toward one's partner, relationship commitment, and trust in one's partner. First, affectionate touch has been shown to increase sensitivity to a partner's needs (Aron, Mashek, & Aron, 2004). Touch has also been shown to increase felt state security, even when the touch is imagined (Jakubiak & Feeney, 2016c). No studies have tested whether touch leads to more empathy; however, when security was contextually primed, participants had more empathic responses (Mikulincer et al., 2001), so it can be inferred that touch could lead to increased empathy. Touch is theorized to be positively associated with commitment, although like with empathy, no study has tested this association experimentally (Jakubiak & Feeney, 2016a). There also has been no study examining effects of touch on trust, but it has been theorized that touch

can increase feelings of trust because it communicates that the partner is available and supportive (Jakubiak & Feeney, 2016a). Thus, we predict that touch will increase intrinsic and altruistic motivation and willingness to sacrifice through PRO.

Current Study

In summary, the research question addressed in this investigation is: how can couple members increase their intrinsic and altruistic motivation to become more willing to sacrifice for their romantic partner? Affectionate touch is proposed as an answer to this question. We hypothesize that affectionate touch will increase intrinsic and altruistic motivation to sacrifice for one's partner, which will then lead to an increased willingness to sacrifice. In addition, we propose that the relationship between touch and intrinsic and altruistic motivation will be mediated by relationship salience and PRO. See Figure 1 for a depiction of the theoretical framework and hypotheses for this investigation. The study hypotheses are as follows:

1. Participants who receive affectionate touch will be more intrinsically and altruistically motivated to sacrifice for their partner (path A, Figure 1), and an increase in these motives will lead to becoming more willing to sacrifice than participants who do not receive touch (path C, Figure 1).
2. Relationship salience and PRO will mediate the relationship from affectionate touch (paths D and E, Figure 1) to intrinsic and altruistic motivation to sacrifice (paths F and G, Figure 1) and willingness to sacrifice (path B, Figure 1).

Method

Participants

Sixty-seven couples were recruited for this study. For the target participants, there were 44 females (65.67%) and 23 males with a mean age of 20.42 ($SD = 2.76$), ranging from 18 to 31

years old. Participants were 50.75% Asian, 38.81% were Caucasian, 5.97% were African-American, and 4.48% were of multiple races. In terms of education, the majority of participants were college students, although some were older (11 completed high school, 32 completed some college credits, 11 had a bachelor's degree, 4 completed some graduate school, 8 had a professional degree, and 1 did not answer). The mean relationship length of the participants were 2.41 months ($SD = 1.34$), ranging from 0.25 to 5 months, and five couples were living together for a mean of 2.20 months ($SD = 0.45$), ranging from 2 to 3 months. The majority of the couples were heterosexual: 63 were heterosexual while 4 were same-sex couples. Participants had to be in a relationship for 5 months or less and be at least 18 years of age to be eligible for the study. We recruited participants who have been in a relationship for 5 months or less as part of part of a larger study investigating the effects of touch on interdependence between couple members.

We recruited participants through Carnegie Mellon University's Psychology Research Participant pool, as well as through a university-affiliated paid participant pool, flyers posted throughout the university campus and the local community, and posts on an Experiments Facebook Group for the university. Participants either received research credit for their psychology course or \$10.

Twelve participants were excluded from analyses for the following reasons: 8 did not follow condition instructions, 2 did not finish the study, and 2 accurately guessed the purpose of the study. Thus, the final total sample size for data analyses was 55.

Procedure

Couples participated in a 1-hour lab session together. Before each study session began, the target participant and the partner, also known as the confederate, were randomly assigned. Experimenters kept track of what condition their participants were in and other notes relating to

the experiment on experimenter sheets. An experimenter greeted the couple and told them that we are interested in learning about how couples behave in different contexts and how this affected their choices, which was our cover story for this study. After the couple completed consent forms (Appendix A), the couple members were separated into two rooms to complete background questionnaires that included basic demographic information and relationship information such as relationship quality (Appendix B1 for the target, Appendix B2 for the partner/confederate). Targets also were asked to think of a time that a close one (romantic partner, friend, family member, etc.) disappointed them in the past. The purpose of this was to remind participants of the risks of increasing dependence in a relationship. Increasing the perception of risk at the beginning of the study should reduce the likelihood of ceiling effects for willingness to sacrifice because participants are more aware of risks in their relationship and may be discouraged to sacrifice. This enabled us to examine whether the touch condition could promote intrinsic and altruistic motivation and willingness to sacrifice despite the potential risks. Participants completed additional background measures as part of the larger study that were not relevant to the current investigation.

Next, the target participant received a bogus questionnaire to work on while the experimenter gave the confederate instructions on the next task (Appendix C). If the couple was randomly assigned to the touch condition (which was determined before the study began), the experimenter told the confederate to sit next to his or her partner and touch them casually throughout the next activity while reading something or playing a game on their phone. If the couple was randomly assigned to the no touch condition, the experimenter told the confederate to sit beside their partner and read something or play a game on their phone without touching their

partner so proximity would not be confounded with touch. In both conditions, the confederate was told to not talk to their partner to allow their partner to focus on their task.

When the couple was reunited, the target was told that their partner made a choice to relax with them in the same room while the target completed the next task. Targets in both conditions were told that their partner chose to relax with them to fit our cover story. The experimenter then asked the target to rate several photos of people based on their first impressions while the confederate followed the instructions provided for the assigned condition. These photos came from the publicly available Milborrow / University of Cape Town (MUCT) Landmarked Face Database (Milborrow, Morkel, & Nicolls, 2010) (see Appendix D). The target rated each person on various attributes such as their personality and relationship history for five minutes (rating sheets in Appendix E). The experimenter told the participant to take their time and make ratings according to what came to mind. After the five minutes, the participants went to separate rooms and completed the same questionnaires assessing relationship salience and positive relationship orientation (PRO) (Appendix F). After completing these questionnaires, couple members were reunited in the first room, where the target returned to the photo evaluation task and the confederate continued to follow their touch instructions for another three minutes.

After the second photo evaluation task, the participants were separated again to complete more questionnaires. The target completed a questionnaire relating to the larger study, and the confederate completed a questionnaire about their experience with the touch manipulation and a manipulation check (Appendix G). After the target finished their questionnaire, the experimenter introduced them to a new activity (while the confederate was still completing their questionnaire). The experimenter told the target that their partner was given a choice about relaxing with them while completing the rating of faces, and now the target will be given an opportunity to make a

choice. The target was told that for the next task, either the target or the partner would complete either a public speaking task or a mental arithmetic task in front of an evaluator and would be filmed during the task so other evaluators could watch. These instructions were derived from the Trier Social Stress Task (Kirschbaum, Pirke, & Hellhammer, 1993) and were intended to create a stressful situation through which target sacrifice could be observed. The target was informed that the person who would do the task would be determined by a raffle, but the target would be given the opportunity to decide how many raffle tickets would be labeled with their own initials versus their partner's initials. The experimenter then gave the target nine raffle tickets and told them to write one person's initials per ticket and that their partner would not know how they divided up the raffle tickets, but the experimenter would know for the purpose of the study. The experimenter then left the target alone to assign initials to the raffle tickets. Then, the experimenter collected the raffle tickets and gave the target a questionnaire assessing their motives for assigning the tickets the way they did and also to assess how comfortable they are with affectionate touch from their partner (Appendix H). Upon completion of the motives questionnaire, the experimenter told the target that no one would have to actually do the stressful task and ended of the study. The experimenter then fully debriefed both couple members together and gave them a debriefing sheet (Appendix I). The protocol experimenters used can be seen in Appendix J.

Measures

Motivation to Sacrifice. We measured motivation to sacrifice in two ways: through an open-ended free-write section and through a closed-ended 26-item questionnaire. First, participants were given the opportunity to write why they assigned the tickets the way they did in a free response format. They were instructed as follows:

In the space below, please describe *why you divided up the raffle the way you did*.

There are no right or wrong ways to divide the tickets between you and your partner. We would just like to understand why you divided the tickets the way that you did. Please help us by answering honestly and providing as much detail as possible. Possible reasons might be that you felt obligated to split up the raffle tickets in a certain way, you would feel guilty if you divided up the tickets in a different way, etc. You may have had a variety of reasons, or you may have had just one or two. Please list as many reasons as you actually had. There are not right or wrong reasons. We just want to know how you truly feel. If you need more space to write, let the experimenter know.

Four independent coders, who were blind to participants' conditions, later rated the extent to which participants' open-ended responses reflected intrinsic ($\alpha = 0.85$), extrinsic ($\alpha = 0.66$), approach ($\alpha = 0.68$), avoidant ($\alpha = 0.75$), egoistic ($\alpha = 0.82$), and altruistic ($\alpha = 0.81$) motives. Coders were also instructed to code for exploration motives, but due to very low scores and variation in this motive ($M = 1.14$, $SD = 0.31$), we excluded it from analyses. Intrinsic motive was defined as the degree to which a participant did something because they gain internal rewards out of doing a certain activity and not dependent or contingent on the partner's (or anyone else's) wishes or motives, such as wanting to genuinely help out their partner. Extrinsic motive was defined as the degree to which someone performed an action to get external rewards, such as fulfilling an obligation or adhering some external rule such as social norms, partner's wishes, etc. For approach motives, coders rated the degree that the participant wanted to attain or fulfill some goal such as simply wanting to try out the task, and for avoidance motives, the degree the participant was trying to avoid some negative consequence, such as making a sacrifice

to avoid making their partner angry. Altruistic motives were coded according to the degree participants prioritized their partner's well-being over their own, such as making a sacrifice to take care of their partner instead of themselves. Egoistic motives were coded in the other direction, where participants prioritized their own well-being over their partner's, such as assigning themselves more tickets because they found the task to be interesting, regardless of how their partner felt. Coders rated the presence and quality of each motive on a scale from 1 (not at all) to 5 (highest quality). The full coding manual can be seen in Appendix K.

The closed-ended questionnaire consisted of 26 motives statements, which participants rated on a scale from 1 (not at all true) to 7 (very true) to reflect why they assigned the tickets the way they did. Nineteen items were created specifically for use in this study. These items consisted of motivations ranging from intrinsic to extrinsic, approach to avoidance, and altruistic to egoistic, for why participants might assign the raffle tickets the way they did. Examples include, "I did not want to do the task," "I did not want to seem mean or unkind," and "My partner is better at these kinds of tasks than me." Six items were taken from the "instrumental support to make partner's life less stressful" subscale of the Motivations for Relational Activities Questionnaire (Gaine & La Guardia, 2009). These items provided 2 intrinsic and 5 extrinsic motives for why someone would help out their partner.

Willingness to Sacrifice. We measured willingness to sacrifice behaviorally by observing how many tickets targets assigned to themselves in the raffle task. Because the participant was given nine tickets, the degree to which a participant was willing to sacrifice was assessed on a scale from 0 (not at all willing to sacrifice) to 9 (completely willing to sacrifice), with higher scores indicating greater willingness to sacrifice and to perform the stressful task instead of the partner.

Relationship Salience. Relationship salience was measured with six items asking to what degree the target's partner and relationship was on their mind at that moment (e.g. "Right now, my relationship is one of my top priorities"). Because there was no pre-existing measure of relationship salience, this scale was created specifically for use in this investigation. Participants evaluated each item on a 7-point scale with the following labels: 1 (disagree strongly), 4 (neither agree nor disagree), 7 (agree strongly) ($\alpha = 0.88$).

Positive Relationship Orientation (PRO). We measured PRO with 15 items derived from existing measures that assess specific facets of positive relationship functioning. Participants rated these items according to how they were feeling at the moment. This measure included three items assessing each of the following: (1) sensitivity to partner's needs (e.g., "Right now, I would be able to tell if my partner needs my help or support") from the caregiving sensitivity subscale (Kunce & Shaver, 1994), (2) empathy (e.g., "Right now, I can empathize with my partner and his/her problems") from the empathic concern subscale in the Interpersonal Reactivity Index (Davis, 1980), (3) security (e.g., "Right now, I feel relaxed knowing that my partner is there for me now") from the felt security measure (Jakubiak & Feeney, 2016a, 2016b), (4) commitment (e.g., "Right now, I am committed to maintaining my relationship with my partner") from the commitment subscale from the Investment Model Scale (Rusbult, Martz, & Agnew, 1998), and (5) trust (e.g., "I feel I can rely on my partner to react in a positive way if I expose my weaknesses to him/her") from the Trust in Close Relationships scale (Rempel, Holmes, & Zanna, 1985). Items were shuffled to reduce expectancy biases, and participants rated all items on the same 7-point scale as the Relationship Salience items. We computed a composite PRO index by averaging all items such that higher scores reflect greater PRO ($\alpha = 0.86$).

Demographics. Participants reported their age, gender, education, income, race, ethnicity, relationship duration, whether they were living with their partner, and if yes, for how long, and whether they were romantically involved with anyone other than their partner.

Relationship Quality. As a potential control variable, we assessed background relationship quality using 10 satisfaction and commitment items derived from Van Lange and colleagues (1997) and 3 conflict items from Collins and Read (1990): satisfaction (4 items, e.g., “All things considered, how happy are you in your relationship?”), commitment (6 items, e.g., “Do you feel committed to maintaining your relationship with your partner?”), and conflict (3 items, reverse-coded, e.g., “How often do you and your partner have arguments and disagreements?”). Participants responded using a 9-point scale ranging from 0 to 8 with appropriate anchors. A composite relationship quality index was computed by averaging all items, with higher scores reflecting greater relationship quality ($\alpha = .86$).

Comfort with Touch. As a potential control variable, we asked participants to respond to the statement “I am usually very comfortable being touched by my partner” on a scale from 0 (not at all true) to 8 (completely true).

Frequency of Touch Manipulation. As a manipulation check, partners were asked how often they touched the target during the evaluation task sessions on a scale from 1 (not at all) to 7 (continuously (the whole time)) with 4 (intermittently (sometimes)) as a midpoint.

Results

Preliminary Analyses

Thirty-four participants were in the touch condition and 33 in the no touch condition before excluding participants, and after excluding participants, there were 29 in the touch condition and 26 in the no touch condition. There were no significant differences between the

conditions in terms of the participants' age, gender, relationship length, relationship quality, and comfort with touch (all $p > 0.05$); thus, no control variables were used in data analyses for hypothesis-testing. In addition, reported touch frequency was significantly different between the touch condition ($M = 6.54$, $SD = 0.79$) and the no touch condition ($M = 1.50$, $SD = 0.81$), $t(52) = 23.05$, $p < 0.001$, indicating that the manipulation check was successful. During the experiment, the experimenter also verified that touch occurred in the touch condition and not in the no touch condition. Means and standard deviations of all study variables are shown in Table 1.

Intercorrelations among all study variables are shown in Table 2.

Because the Motivation to Sacrifice Questionnaire was a newly developed measure for this investigation, we conducted a principal components analysis on the closed-ended scale items to determine which of the items should be grouped together based on conceptual similarities of participant responses. The results of the principal components analysis revealed six factors reflecting the following motivations for sacrificing (or not sacrificing) for their partner: altruistic motives (6 items, $\alpha = 0.87$) included items that reflected caring for the partner and the relationship (e.g., "I get a lot of pleasure out of making things easier for my partner"), egoistic/avoidance motives (5 items, $\alpha = 0.85$) reflected self-centered motives centered on avoiding the stressful task (e.g., "I did not want to do the task"), extrinsic motives (4 items, $\alpha = 0.83$) included items relating to obligations or external pressures the target felt they must fulfill (e.g., "I did not want to seem mean or unkind"), approach motives (4 items, $\alpha = 0.77$) included items about the target wanting to do the task (e.g., "The task seemed fun or interesting to do"), relationship-pressure motives (2 items, $\alpha = 0.62$) reflected the target being concerned about angering their partner or letting them down if they assigned more tickets to their partner (e.g., "I get anxious if I don't feel like I'm helpful to my partner"), and equality/fairness motives (2 items,

$\alpha = 0.58$) consisted of items that reflected equal division of the tickets according to fairness norms (e.g., “I tried to divide [the tickets] as fairly as possible”). Intercorrelations among these motive variables (closed-ended motives) and those coded from the write-in section (open-ended motives) are presented in Table 2.

Primary Analyses

Touch predicting sacrifice (Path C). To test the hypothesis that touch would lead to greater sacrifice (path C, see in Figure 1), a t-test was conducted to examine whether touch condition influenced how many tickets targets assigned to themselves. Contrary to expectations, results revealed no significant effect, $t(53) = -0.61, p = 0.55, 95\% \text{ CI } [-1.79, 0.96]$ ($M_{\text{Touch}} = 4.62, SD = 2.09; M_{\text{No Touch}} = 5.04, SD = 2.96$).

Touch predicting motives (Path A). We next examined whether touch condition predicted the motivations that targets reported for sacrificing (or not sacrificing) for their partners (path A). First, we examined whether touch condition influenced motives reported in the open-ended, free-write assessment of motives. Inconsistent with expectations, touch condition did not have significant effects on intrinsic ($t(53) = -0.28, p = 0.79, 95\% \text{ CI } [-0.57, 0.44]$), extrinsic ($t(53) = -1.06, p = 0.29, 95\% \text{ CI } [-0.52, 0.16]$), approach ($t(53) = -1.19, p = 0.24, 95\% \text{ CI } [-0.45, 0.11]$), avoidance ($t(53) = -0.32, p = 0.75, 95\% \text{ CI } [-0.52, 0.38]$), altruistic ($t(53) = -1.61, p = 0.11, 95\% \text{ CI } [-0.77, 0.08]$), or egoistic motives ($t(53) = -0.01, p = 0.99, 95\% \text{ CI } [-0.43, 0.42]$).

We also examined whether touch condition influenced the motives that targets endorsed on the closed-ended questionnaire. Results revealed that touch condition did have a marginally significant effect on altruistic motives ($t(53) = -1.98, p = 0.05, 95\% \text{ CI } [-1.42, 0.01]$), albeit in a direction opposite to predictions. Specifically, targets in the no touch condition ($M_{\text{No touch}} = 5.12,$

$SD = 1.21$) reported greater altruistic motives than targets in the touch condition ($M_{\text{Touch}} = 4.42$, $SD = 1.41$). Effects for the other 5 motive variables were non-significant (egoistic/avoidance ($t(53) = 0.34$, $p = 0.74$, 95% CI [-0.74, 1.05]), extrinsic ($t(53) = -0.20$, $p = 0.84$, 95% CI [-1.00, 0.79]), approach ($t(53) = -0.26$, $p = 0.80$, 95% CI [-0.84, 0.65]), relationship-pressure ($t(53) = 0.51$, $p = 0.61$, 95% CI [-0.54, 0.91]), equality ($t(53) = 0.29$, $p = 0.77$, 95% CI [-0.89, 1.20])).

Testing viability of mediator variables (Paths C, D, E, and F). To determine whether a mediation analysis was warranted, analyses were first conducted to examine touch condition differences in the proposed mediators (relationship salience and PRO) (paths C and D respectively). Inconsistent with expectations, a t-test showed that there were no significant differences between touch conditions in relationship salience ($t(53) = -0.08$, $p = 0.93$, 95% CI [-0.71, 0.65]) ($M_{\text{Touch}} = 5.00$, $SD = 1.18$; $M_{\text{No touch}} = 5.00$, $SD = 1.34$) or PRO ($t(53) = 1.54$, $p = 0.13$, 95% CI [-0.85, 0.65]) ($M_{\text{Touch}} = 5.98$, $SD = 0.56$; $M_{\text{No touch}} = 5.70$, $SD = 0.80$).

We next examined whether the proposed mediating variables predicted motivations for sacrificing (or not sacrificing) (paths E and F). We conducted both correlation analyses between each mediator and motivation variable, and we conducted regression analyses with both mediators, relationship salience and PRO, entered simultaneously as predictors of each of the motivation variables. This was to determine the unique effects of each mediator given that relationship salience was significantly correlated with PRO ($r = 0.46$, $p < 0.001$). For the open-ended motives, relationship salience was significantly positively correlated with altruistic motives ($r = 0.40$, $p = 0.002$) and negatively correlated with egoistic motives ($r = -0.29$, $p = 0.03$), which partially supported our hypotheses. See Table 2 for zero-order correlations between the proposed mediators and motives variables. In the regression analyses, relationship salience also significantly predicted altruistic ($\beta = 0.27$, $t(52) = 2.93$, $p = 0.005$, 95% CI [0.08, 0.45]) and

egoistic ($\beta = -0.22$, $t(52) = -2.38$, $p = 0.02$, 95% CI [-0.40, -0.03]) motives, controlling for PRO.

Thus, higher relationship salience scores were associated with greater altruistic motives and lower egoistic motives. The regression analyses also revealed marginally significant associations between both mediators and avoidance when both predictors were entered simultaneously into the analyses (relationship salience $\beta = -0.17$, $t(52) = -1.76$, $p = 0.08$, 95% CI [-0.37, 0.02], PRO $\beta = 0.33$, $t(52) = 1.87$, $p = 0.07$, 95% CI [-0.02, 0.69]) motives. There were no significant correlations (or associations in the simultaneous regression analyses) between PRO and any of the open-ended motives (see Table 2).

With regard to the proposed mediators predicting the closed-ended motives variables, results indicated that the altruistic motives variable was significantly and positively correlated with relationship salience ($r = 0.31$, $p = 0.02$) and marginally for PRO ($r = 0.24$, $p = 0.08$). In the regression analyses in which both mediators were entered simultaneously, relationship salience marginally significantly predicted altruistic motives ($\beta = 0.28$, $p = 0.09$, 95% CI [-0.04, 0.60]), but PRO had no significant effect ($p > 0.05$). PRO was also significantly negatively correlated with approach motives ($r = -0.27$, $p = 0.02$). In the regression analyses in which both mediators were entered simultaneously, PRO significantly predicted approach motives ($\beta = -0.78$, $t(52) = -2.72$, $p = 0.01$, 95% CI [-1.36, -0.20]), indicating that greater PRO was linked with lower approach motives. Relationship salience also marginally significantly predicted approach motives, indicating that greater relationship salience was linked with more approach motives ($\beta = 0.29$, $t(52) = 1.85$, $p = 0.07$, 95% CI [-0.03, 0.61]). There were no other significant associations between the proposed mediators and the closed-ended motives variables in either the correlation analyses (see Table 2) or in the regression analyses.

Motives predicting sacrifice (Path B). Next, we examined whether the open-ended motives reported in the free-write session predicted sacrifice behavior (path B). Correlational analyses indicated that the following motives were significantly correlated with number of tickets assigned to the self (sacrifice): approach motives were positively associated with sacrifice ($r = 0.38, p = 0.004$), avoidance motives were negatively associated with sacrifice ($r = -0.48, p < 0.001$), altruistic motives were positively associated with sacrifice ($r = 0.64, p < 0.001$), and egoistic motives were negatively associated with sacrifice ($r = -0.58, p < 0.001$). Thus, consistent with hypotheses, greater approach and altruistic motives were associated with greater sacrifice, while greater avoidance and egoistic motives were linked with less sacrifice. The other open-ended motives were not significantly correlated with tickets assigned (see Table 2).

Finally, we examined whether the motives endorsed on the closed-ended motives questionnaire predicted sacrifice behavior. Correlational analyses revealed that these motives predicted sacrifice behavior as follows: altruistic motives were positively associated with sacrifice ($r = 0.61, p < 0.001$), egoistic/avoidance motives were negatively correlated with sacrifice ($r = -0.75, p < 0.001$), and approach motives were positively correlated with sacrifice ($r = 0.38, p = 0.004$). Thus, consistent with predictions, greater altruistic and approach motives were associated with more sacrifice, whereas greater egoistic/avoidance motives were linked with less sacrifice. There were no other significant correlations with the other closed-ended motives (see Table 2).

Discussion

In this study, we aimed to find a way to promote couple members' motivation to sacrifice – the motivation to help their partner despite taking on costs to themselves. We also wanted to find mechanisms that would explain these links. A priori hypotheses were that participants who

received affectionate touch would be more intrinsically and altruistically motivated to sacrifice for their partner, and thus assign more tickets to themselves as a form of sacrifice, than participants who do not receive touch. Relationship salience and PRO were predicted to mediate the relationship from affectionate touch to intrinsic and altruistic motivation to sacrifice. Our hypotheses were partially supported but also showed opposite effects in terms of touch. While touch did not affect tickets assigned, it did marginally affect participants' motivations such that touch led participants to have lower altruistic motivation than participants who did not receive touch, which is inconsistent with predictions. Somewhat in line with our hypotheses, relationship salience did significantly predict increases in altruistic motives in the open-ended assessment of motives and marginally for the closed-ended assessment. PRO only marginally predicted an increase in the closed-ended assessment of altruistic motives. Relationship salience negatively predicted egoistic motives, and PRO negatively predicted closed-ended assessments of approach motives. Consistent with expectations, altruistic motives predicted an increase in sacrifice behavior via ticket assignment. Approach, avoidance, and egoistic motives also influenced tickets assigned such that those higher in approach motives assigned more tickets to themselves (i.e., sacrificed more) and those higher in avoidance and egoistic motives assigned fewer tickets to themselves (i.e., sacrificed less).

A surprising result we found was that the touch condition led to less altruistic motives than the no touch condition. This result was marginal, possibly due to a small sample size. In previous studies, imagined touch was shown to promote more enthusiasm for the TSST than imaging verbal support or writing about a neutral object (Jakubiak & Feeney, 2016c) and touch buffered against stress and threat when it was received from a partner (Coan, Schaefer, & Davidson, 2006; Ditzen et al., 2007; Jakubiak & Feeney, 2016a). These findings suggest that

touch may also promote willingness to sacrifice by performing the stressful task, but that was not the case. In retrospect, participants in our touch condition may have interpreted their partner's touch as a sign that they will support them instead of feeling encouraged from their partner's touch to approach and overcome a stressful task. This situation would especially be the case if touch was a reminder to participants that social support is available (Jakubiak & Feeney, 2016a). If (perceived) social support was available, then targets may have thought that their partner would be more willing to help and make the sacrifice instead, and thus targets would assign more tickets to their partner. It is also possible that the effects of touch differ depending on the length of the relationship. Previous studies examining effects of touch included participants who were in relationships for greater than 5 months (Coan, Schaefer, & Davidson, 2006; Debrot et al., 2013; Ditzen et al., 2007; Jakubiak & Feeney, 2016b; Jakubiak & Feeney, 2016c). However, this investigation included participants who were in relationships only for 5 months or less. Perhaps because participants are just starting a relationship, they may not be as willing to sacrifice because they did not have as much time to build intimacy and commitment (Guerrero & Andersen, 1994; Van Lange et al. 1997).

While there were no significant differences between the touch conditions on motivations, results indicated that motives influenced sacrifice behavior as expected. Altruistic and approach motives were associated with assigning more tickets to the self (more sacrifice), and egoistic and avoidance motives were associated with assigning fewer tickets to the self (less sacrifice). The direction of these effects tells us that when targets made a sacrifice, they had their partner's well-being in mind and wanted to approach the task, whereas participants who assigned fewer tickets to themselves were prioritizing themselves over their partner and wanted to avoid the task.

We also gained some insight about the links between the proposed mediators (relationship salience and PRO), motives, and sacrifice behavior. As predicted, more relationship salience and more PRO (to a lesser degree) were significantly associated with higher levels of altruistic motives. While items in the PRO have previously been associated with altruistic and pro-relationship motives (Arriaga & Rusbult, 1998; Feeney & Collins, 2003; Gaine & La Guardia, 2009; Impett et al. 2013; Kogan et al., 2010), this is the first study to show that relationship salience is associated with altruistic motives and thus an increase of willingness to sacrifice. One unexpected result was that PRO had a significant and negative relationship with approach motives. Since approach motives were positively linked with sacrifice behavior and our PRO measure included items such as security and commitment, which have been associated with willingness to sacrifice (Arriaga & Rusbult, 1998; Gaine & La Guardia, 2009; Patrick et al., 2007; Van Lange et al., 1997; Wieselquist et al., 1999), it seems odd that more PRO would lead to lower approach motives. Even though participants in the touch condition did not have a higher PRO score than those in the no touch condition, the negative association between PRO and approach motives may support the idea that participants feeling positive about their relationship may have depended more on their partner to do the stressful task for them.

Limitations and Future Directions

Although this study makes some important contributions, there are also limitations that qualify these associations. One major limitation is that we assumed that participants assigning more tickets to themselves was an indicator of a greater willingness to sacrifice, but we never asked whether the participants considered this action a sacrifice. It is possible that participants would not have considered assigning more tickets to themselves as a sacrifice because they viewed their partner's needs as their own due to cognitive interdependence (Agnew, Van Lange,

Rusbult, & Langston, 1998; Aron, Mashek, & Aron, 2004). In this case, participants would have perceived no costs to the stressful task because there are benefits to both the partner and the self in doing the task. Even if cognitive interdependence did not influence perceived costs, it could still influence willingness to sacrifice. Day & Impett (2017) found that couple members low in interdependent self-construals were less willing to sacrifice when costs to the self were high compared to couple members high in interdependent self-construals. Additionally, participants may have different motivations for a short-term in-lab task than for a sacrifice they would make outside of the lab. Participants may have different motivations for sacrifices that have larger implications for their lives, such as the decision to move for their partner's job. Future studies should ensure that participants are considering their actions as a sacrifice to better learn how participants are determining when to take on costs to help their partner.

Another issue in this study involved coding for the motivations in the open-ended part of the motives questionnaire. The coding scheme was created for this study and had not been validated, so scores from this coding scheme may be unreliable or lack construct validity, which may contribute to why we did not find significant results relating to intrinsic motivation. It is also noteworthy that intrinsic motivation was more difficult to code than the other motives because individuals can be intrinsically motivated to engage in either positive or negative behaviors, whereas coders in the beginning of their training tended to only classify intrinsic motives with positive behaviors. Future studies should establish how best to code intrinsic motivation and other motivations from written reports of motives, and from behaviors, to establish better construct validity.

There were also limitations regarding our study sample. In a priori power analyses, we needed 100 participants given an effect size (d) of 0.67 and an error probability of 0.05. Because

we were only able to use data from 55 participants, this study is underpowered, and results should be interpreted with caution. Our participants also mostly consisted of US college students, so results from this study are not generalizable to other cultures, age groups, etc., especially when considering the effects of touch and sacrifice. Touch has been shown to have different effects depending on the frequency of touch exposure in a culture (Orth, Bouzdine-Chameeva, & Brand, 2013). Orth et al. (2013) found qualitatively and quantitatively that salespeople's touch only increased trust in their customers when they were from a culture where touch is commonly practiced. How one determines to make a sacrifice is also influenced by culture. If a culture is more collectivist than individualistic, couple members may be more likely to sacrifice because they are prioritizing the needs of their partner and the relationship above their individual needs (Markus & Kitayama, 1991; Triandis, 1989). We have also limited the external validity of our findings by focusing on early stage relationships. By including couples who have been in a relationship for 5 months or less, we may have included couples who were excited to be in a relationship (in the passionate stage of relationship development) and may be fueled by the reward and motivation areas in the brain, which may not reflect the mindsets of those who have been in a relationship for longer (Aron et al., 2005). To increase generalizability, researchers can look at these variables to get a more complete picture of the effects of touch and motivation.

In future follow-up work, researchers can experimentally manipulate motivation as the independent variable to get a better idea of how motivations can influence sacrifice behavior. This kind of manipulation has been done by Impett et al. (2013) in a study where they randomly assigned participants to either have an approach goal or an avoidance goal for hypothetical sacrifices. Asking participants to focus on a certain kind of motivation can provide experimental evidence for the effects specific motivations can have on sacrificing. It would also be interesting

to examine how the perception of the cost of a sacrifice changes before and after an intervention designed to decrease the perceived costs of making a sacrifice.

Conclusions

Strengths of this study include being the first study to experimentally test how affectionate touch could influence couple members' motivation to make a sacrifice, as no previous study has manipulated touch to see how it affects motivations for making sacrifices in a romantic relationship. We also created a new measure for relationship salience to see if it could explain the effects from touch to motivation. While relationship salience was not a mediator, we did find that higher relationship salience was correlated with a higher level of altruistic motives and a lower level of egoistic motives, shedding light on another factor associated with couple members' motivation. In addition, a new behavioral measure of sacrifice allowed us to examine sacrifice behavior without directly asking the participant to do so, which helps make participants less suspicious of the purpose of our study. Asking participants to assign tickets to themselves or to their partner is also more engaging than self-report assessments that ask participants to report their willingness to sacrifice on a questionnaire, so we have likely acquired a more valid and accurate measure of sacrifice behavior.

In conclusion, all couple members must make sacrifices at some point in their relationships, but the reasons for making a sacrifice have different effects on sacrifice behavior, which will likely impact the relationship and the individual couple members. Because motivations have the power to affect behaviors in relationships and relationship outcomes, it is important to understand what couples can do to cultivate beneficial motives for sacrifice and other pro-relationship behaviors to promote well-being for both the relationships and for the individuals. We hope that this investigation, and the results obtained, will motivate future

researchers to examine the effects of different motivations on sacrifice in close relationships and help find a way for couple members to get through the more difficult times of their relationship.

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Table 1

Means and Standard Deviations for All Study Variables

Study Variables	Mean	Standard Deviation
Background Variables		
Comfort with Touch	7.43	0.81
Relationship Quality	6.32	0.95
Proposed Mediators		
Relationship Salience	4.99	1.25
PRO	5.85	0.69
Open-Ended Motives		
Intrinsic	2.96	0.92
Extrinsic	2.31	0.63
Approach	1.53	0.52
Avoidance	1.81	0.82
Altruistic	1.96	0.80
Egoistic	1.85	0.78
Closed-Ended Motives		
Altruistic	4.75	1.35
Egoistic/Avoidance	3.55	1.64
Extrinsic	2.89	1.61
Approach	2.62	1.36
Relationship-Pressure	2.98	1.34
Equality	3.77	1.91

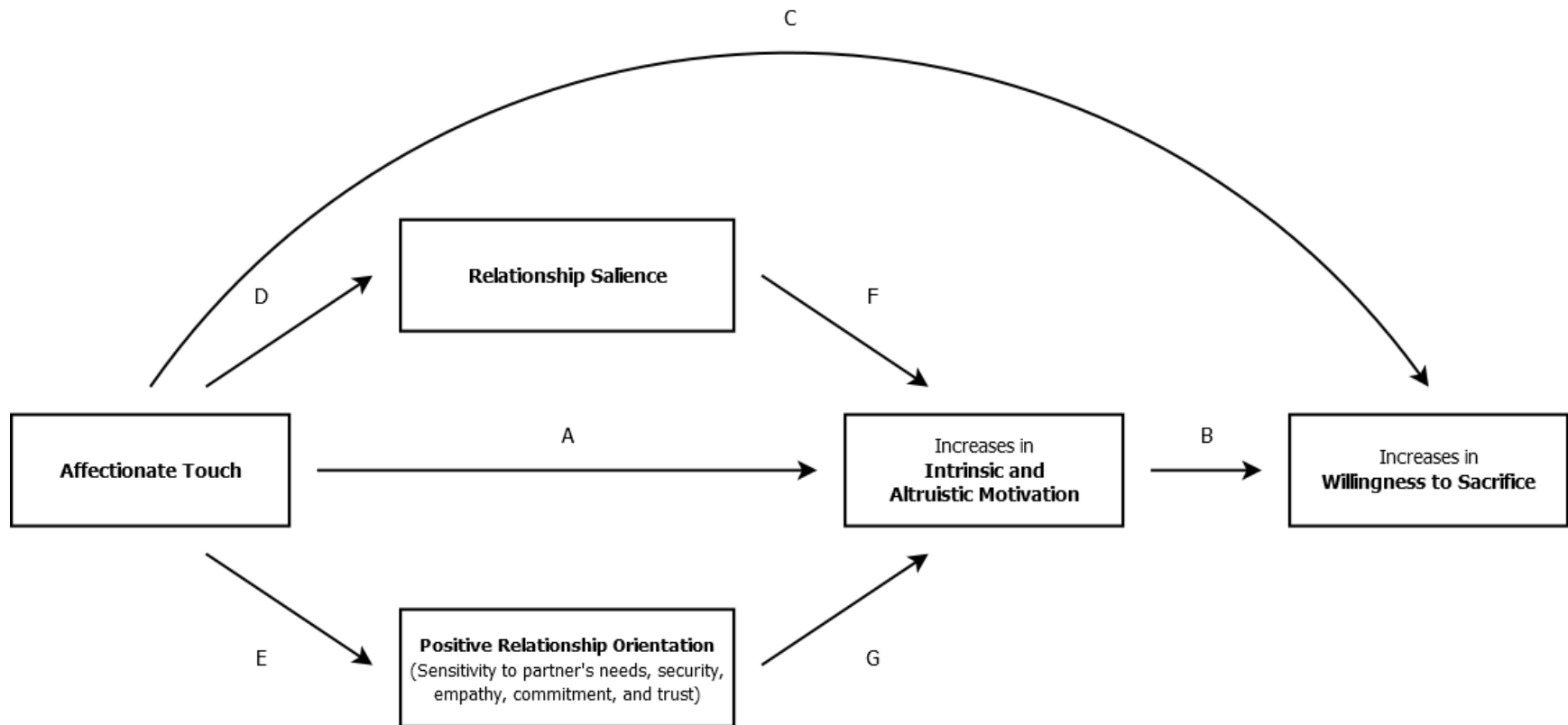
Table 2

Intercorrelations between All Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Background Variables																	
1. Comfort with Touch	—																
2. Relationship Quality	0.25 ⁺	—															
Proposed Mediators																	
3. Relationship Salience	0.44 ^{**}	0.54 ^{***}	—														
4. PRO	0.21	0.70 ^{***}	0.46 ^{***}	—													
Open-Ended Motives																	
5. Intrinsic	-0.14	-0.07	0.09	0.00	—												
6. Extrinsic	-0.03	0.06	-0.11	-0.07	-0.07	—											
7. Approach	0.32 [*]	0.18	0.16	-0.07	-0.5	-0.03	—										
8. Avoidance	-0.38 ^{**}	0.02	-0.14	0.16	0.36 ^{**}	0.14	-0.37 ^{**}	—									
9. Altruistic	0.19	0.40 ^{**}	0.40 ^{**}	0.16	0.18	-0.12	0.41 ^{**}	-0.18	—								
10. Egoistic	-0.28 [*]	-0.18	-0.29 [*]	-0.03	0.28 [*]	0.26 ⁺	-0.29 [*]	0.51 ^{***}	-0.35 ^{**}	—							
Closed-Ended Motives																	
11. Altruistic	0.25 ⁺	0.37 ^{**}	0.31 [*]	0.24 ⁺	-0.18	0.06	0.33 [*]	-0.24 ⁺	0.52 ^{***}	-0.23 ⁺	—						
12. Egoistic/ Avoidance	-0.31 [*]	-0.22	-0.22	-0.09	0.12	0.37 ^{**}	-0.39 ^{**}	0.64 ^{***}	-0.47 ^{***}	0.61 ^{***}	-0.36 ^{**}	—					
13. Extrinsic	-0.16	0.07	0.00	0.06	-0.02	0.40 ^{**}	-0.28 [*]	0.03	-0.06	-0.01	0.12	0.05	—				
14. Approach	0.05	-0.04	0.09	-0.27 [*]	0.06	-0.17	0.46 ^{***}	-0.41 ^{**}	0.22	-0.26 ⁺	0.16	-0.39 ^{**}	-0.16	—			
15. Relationship- Pressure	-0.11	-0.08	-0.20	-0.14	0.00	-0.01	-0.05	0.16	0.05	0.22 ⁺	0.25 ⁺	0.12	0.27 [*]	0.20	—		
16. Equality	-0.14	-0.10	-0.05	-0.06	-0.06	-0.02	-0.11	-0.26 ⁺	-0.12	-0.09	0.18	-0.15	0.04	0.19	0.12	—	
Sacrifice Outcome																	
17. Tickets to Self	0.35 [*]	0.29 [*]	0.24 ⁺	0.08	-0.08	-0.22	0.38 ^{**}	-0.48 ^{***}	0.64 ^{***}	-0.58 ^{***}	0.61 ^{***}	-0.75 ^{***}	-0.02	0.38 ^{**}	0.01	0.07	—

⁺*p* < 0.10 (2-tailed), ^{*}*p* < 0.05 (2-tailed), ^{**}*p* < 0.01 (2-tailed), ^{***}*p* < 0.001 (2-tailed)

Figure 1. *Theoretical Model of Hypotheses*



Appendix A

Study Title: Early stage relationships study

Principal Investigator: Brittany Jakubiak, Ph.D. student

Psychology Department

Carnegie Mellon University

5000 Forbes Avenue

(412) 268-8112

bjakubia@andrew.cmu.edu

Faculty Advisor: Brooke C. Feeney

Other Investigator(s): Bria Toneff, Delancey Wu

Purpose of this Study

The purpose of the study is to learn about how individuals in new romantic relationships think, feel, and behave.

Procedures

This study will take place in a one hour-long session during which you will participate in a variety of activities and complete questionnaires. You will be asked to complete questionnaires telling us about you (e.g., your age, sex, major) and your relationship. You will also be asked to participate in various activities, which may include evaluating photos, making decisions, and completing challenging tasks.

At some times throughout the study, you will be asked to complete questionnaires that ask about your thoughts and feelings about the activities. For example, you may be asked to rate how pleasant or boring each activity was and also to rate how you feel (e.g., how calm, anxious, etc. you feel at the moment.)

This study will be held at Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh PA 15213 in Baker Hall room 354C. Your participation will only be required for this one-hour session.

Participant Requirements

Participants must be 18 years of age or older. Participants must have been in a romantic relationship with one another for less than 5 months. Participants must be capable of visiting Carnegie Mellon University for one laboratory session. To be eligible to participate, both members of the romantic couple must be present.

Risks

The risks associated with participation in this study are no greater than those ordinarily encountered in daily life. On some of the questionnaires, you will be asked to rate your thoughts and feelings about your relationship. Therefore, there is a slight risk of discomfort in answering questions. If you feel uncomfortable answering any questions, you may skip those items. Additionally, if you feel uncomfortable with any of the activities, you may stop participating at any time. There is also a risk of breach of confidentiality that you participated in this study because we will collect your signatures on consent forms. However, no data will be linked to your name. Therefore, there is little apparent risk involved in participation in this study.

Benefits

By participating in this study, you will learn about psychological research. Additionally, you will benefit the scientific community and humanity broadly by helping us to answer important research questions.

Compensation & Costs

You will receive one credit towards your research requirement if you are a CMU student signing up for this study through the psychology participant pool. If you are the partner of someone participating for credit, you may choose to receive either \$10 or 1 research credit for a psychology course. If you were recruited outside of the psychology participant pool, you will be paid \$10 (\$20 per couple) for participating in this study. There will be no cost to you if you participate in this study. If you begin the study but do not complete it, you will still be given credit or monetary compensation.

Confidentiality

By participating in the study, you are indicating that you understand and agree that Carnegie Mellon may be required to disclose your consent form, data, and other personally identifiable information as required by law, regulation, subpoena or court order. Otherwise, your confidentiality will be maintained in the following manner:

Your data and consent form will be kept separate. Your consent form will be stored in a locked location on Carnegie Mellon property and will not be disclosed to third parties. By participating, you understand and agree that the data and information gathered during this study may be used by Carnegie Mellon and published and/or disclosed by Carnegie Mellon to others outside of Carnegie Mellon. However, your name, address, contact information and other direct personal identifiers in your consent form will not be mentioned in any such publication or dissemination of the research data and/or results by Carnegie Mellon.

The researchers will keep your consent form in a secured location separate from the rest of your data. The researchers will not ask for your name during any recorded activity or on any survey -- you will be assigned a number. Your data will be stored under your assigned number, not your name, and will be kept separately from your consent form. Your partner will not see any of your responses to any study materials.

Rights

Your participation is voluntary. You are free to stop your participation at any point. Refusal to participate or withdrawal of your consent or discontinued participation in the study will not result in any penalty or loss of benefits or rights to which you might otherwise be entitled. The Principal Investigator may at his/her discretion remove you from the study for any of a number of reasons. In such an event, you will not suffer any penalty or loss of benefits or rights which you might otherwise be entitled.

Right to Ask Questions & Contact Information

If you have any questions about this study, you should feel free to ask them now. If you have questions later, desire additional information, or wish to withdraw your participation please contact the Principal Investigator by mail, phone or e-mail in accordance with the contact information listed on the first page of this consent.

If you have questions pertaining to your rights as a research participant; or to report objections to this study, you should contact the Research Regulatory Compliance Office at Carnegie Mellon University. Email: irb-review@andrew.cmu.edu . Phone: 412-268-1901 or 412-268-5460.

By signing below, you agree that the above information has been explained to you and all your current questions have been answered. You understand that you may ask questions about any aspect of this research study during the course of the study and in the future. By signing this form, you agree to participate in this research study.

PARTICIPANT SIGNATURE

DATE

I certify that I have explained the nature and purpose of this research study to the above individual and I have discussed the potential benefits and possible risks of participation in the study. Any questions the individual has about this study have been answered and any future questions will be answered as they arise.

SIGNATURE OF PERSON OBTAINING CONSENT

DATE

Appendix B1

QUESTIONNAIRE SET 1

(TARGET)

YOUR BACKGROUND

1. Age: _____
2. Gender: _____ Female _____ Male _____ Other
3. 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 (e.g., M.S., M.D., Ph.D. etc.)
4. Your household income (please check one):
 - _____ \$0 - \$19,999
 - _____ \$20,000 – \$39,999
 - _____ \$40,000 - \$59,999
 - _____ \$60,000 - \$79,999
 - _____ \$80,000 - \$99,999
 - _____ \$100,000 - \$119,999
 - _____ \$120,000 or over
5. Your race (please check as many as apply):
 - _____ American Indian/ Alaska Native
 - _____ Asian
 - _____ Black or African American
 - _____ Native Hawaiian or Pacific Islander
 - _____ White (Caucasian)
 - _____ Other (please specify _____)
6. Your ethnicity:
 - _____ Not Hispanic or Latino
 - _____ Hispanic or Latino

YOUR RELATIONSHIP HISTORY

1. How long have you been with your romantic partner? _____ Years _____ Months
2. Are you and your romantic partner currently living together? _____ Yes _____ No
 If yes, approximately how long have you been living together? _____ Years _____ Months
3. Are you romantically involved with any other people right now (besides your romantic partner)?
 _____ Yes _____ No

YOUR INTERPERSONAL STYLE (ECR)

Please take a moment to think about how you ***generally*** feel in ***important relationships in your life***. Think about your past and present relationships with people who have been especially important to you, such as romantic partners and close friends. Respond to each statement in terms of how you ***generally*** feel in these relationships. Please circle **ONE** number.

		Disagree Strongly			Neutral/ Mixed			Agree Strongly
1	I prefer not to show people how I feel deep down.	1	2	3	4	5	6	7
2	I worry about being abandoned.	1	2	3	4	5	6	7
3	I am very uncomfortable being close to people.	1	2	3	4	5	6	7
4	I worry a lot about my relationships.	1	2	3	4	5	6	7
5	Just when people start to get close to me, I find myself pulling away.	1	2	3	4	5	6	7
6	I worry that people won't care about me as much as I care about them.	1	2	3	4	5	6	7
7	I get uncomfortable when people want to be very close to me.	1	2	3	4	5	6	7
8	I worry a fair amount about losing close relationships.	1	2	3	4	5	6	7
9	I don't feel comfortable opening up to others.	1	2	3	4	5	6	7
10	I often wish that other people's feelings for me were as strong as my feelings for them.	1	2	3	4	5	6	7
11	I want to get close to people, but I keep pulling back.	1	2	3	4	5	6	7
12	I often want to merge completely with people, and this sometimes scares them away.	1	2	3	4	5	6	7
13	I am nervous when people get too close to me.	1	2	3	4	5	6	7
14	I worry about being alone.	1	2	3	4	5	6	7
15	I feel comfortable sharing my private thoughts and feelings with others.	1	2	3	4	5	6	7
16	My desire to be very close sometimes scares people away.	1	2	3	4	5	6	7
17	I try to avoid getting too close to people.	1	2	3	4	5	6	7
18	I need a lot of reassurance that I am loved by others.	1	2	3	4	5	6	7

		Disagree Strongly			Neutral/ Mixed		Agree Strongly
19	I find it relatively easy to get close to others.	1	2	3	4	5	6 7
20	Sometimes I feel that I force people to show more feeling and commitment.	1	2	3	4	5	6 7
21	I find it difficult to allow myself to depend on others.	1	2	3	4	5	6 7
22	I tell close others just about everything.	1	2	3	4	5	6 7
23	I find that people don't want to get as close as I would like.	1	2	3	4	5	6 7
24	I feel comfortable depending on others.	1	2	3	4	5	6 7
25	I get frustrated when people are not around as much as I would like.	1	2	3	4	5	6 7
26	When others disapprove of me, I feel really bad about myself.	1	2	3	4	5	6 7

FEELINGS ABOUT YOURSELF

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1	On the whole, I am satisfied with myself.	Strongly disagree	Disagree	Agree	Strongly agree
2	At times I think I am no good at all.	Strongly disagree	Disagree	Agree	Strongly agree
3	I feel that I have a number of good qualities.	Strongly disagree	Disagree	Agree	Strongly agree
4	I am able to do things as well as most other people.	Strongly disagree	Disagree	Agree	Strongly agree
5	I feel I do not have much to be proud of.	Strongly disagree	Disagree	Agree	Strongly agree
6	I certainly feel useless at times.	Strongly disagree	Disagree	Agree	Strongly agree
7	I feel that I'm a person of worth, at least on an equal plane with others.	Strongly disagree	Disagree	Agree	Strongly agree
8	I wish I could have more respect for myself.	Strongly disagree	Disagree	Agree	Strongly agree
9	All in all, I am inclined to feel that I am a failure.	Strongly disagree	Disagree	Agree	Strongly agree
10	I take a positive attitude toward myself.	Strongly disagree	Disagree	Agree	Strongly agree

HOW YOU FEEL ABOUT YOUR RELATIONSHIP WITH YOUR PARTNER

Now, 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

Completely

- (2) Do you feel committed to maintaining your relationship with your partner?

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

Not At All

Completely

Committed

Committed

- (3) How does your relationship compare to your ideal?

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

Far From 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

Completely

- (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

Extremely

Likely to End

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

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

Completely

Attached

Attached

- (10) How much tension is there between you and your partner?

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

None

A Moderate

A Great

At All

Amount

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

Often Have

Such Fantasies

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

Extremely

Close

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

Completely

Relationship experiences

Please describe a time when a significant other hurt you, disappointed you, or let you down. Please describe the situation that occurred and how you felt during this experience in some detail.

How upsetting was this situation to you?

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

Not at all upsetting

Somewhat upsetting

Extremely upsetting

Now, think of your current romantic partner. Please list 5 ways that your current romantic partner could hurt you, disappoint you, or let you down in the future. For each response, rate how upsetting this would be to you using the scales below.

1.

How upsetting would this be for you?

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

Not at all upsetting

Somewhat upsetting

Extremely upsetting

2.

How upsetting would this be for you?

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

Not at all upsetting

Somewhat upsetting

Extremely upsetting

3. _____

How upsetting would this be for you?

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

Not at all upsetting Somewhat upsetting Extremely upsetting

Thank you for completing these questionnaires. Please open your door to let the experimenter know you are finished.

Appendix B2

QUESTIONNAIRE SET 1

(PARTNER/CONFEDERATE)

YOUR BACKGROUND

5. Age: _____
6. Gender: _____ Female _____ Male _____ Other
7. 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 (e.g., M.S., M.D., Ph.D. etc.)
5. Your race (please check as many as apply):
 _____ American Indian/ Alaska Native
 _____ Asian
 _____ Black or African American
 _____ Native Hawaiian or Pacific Islander
 _____ White (Caucasian)
 _____ Other (please specify _____)
6. Your ethnicity:
 _____ Not Hispanic or Latino
 _____ Hispanic or Latino
8. Your household income (please check one):
 _____ \$0 - \$19,999
 _____ \$20,000 – \$39,999
 _____ \$40,000 - \$59,999
 _____ \$60,000 - \$79,999
 _____ \$80,000 - \$99,999
 _____ \$100,000 - \$119,999
 _____ \$120,000 or over

YOUR RELATIONSHIP HISTORY

4. How long have you been with your romantic partner? _____ Years _____ Months
5. Are you and your romantic partner currently living together? _____ Yes _____ No
 If yes, approximately how long have you been living together? _____ Years _____ Months
6. Are you romantically involved with any other people right now (besides your romantic partner)?
 _____ Yes _____ No

YOUR INTERPERSONAL STYLE (ECR)

Please take a moment to think about how you **generally** feel in **important relationships in your life**. Think about your past and present relationships with people who have been especially important to you, such as romantic partners and close friends. Respond to each statement in terms of how you **generally** feel in these relationships. Please circle **ONE** number.

		Disagree Strongly			Neutral/ Mixed			Agree Strongly
1	I prefer not to show people how I feel deep down.	1	2	3	4	5	6	7
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3	I am very uncomfortable being close to people.	1	2	3	4	5	6	7
4	I worry a lot about my relationships.	1	2	3	4	5	6	7
5	Just when people start to get close to me, I find myself pulling away.	1	2	3	4	5	6	7
6	I worry that people won't care about me as much as I care about them.	1	2	3	4	5	6	7
7	I get uncomfortable when people want to be very close to me.	1	2	3	4	5	6	7
8	I worry a fair amount about losing close relationships.	1	2	3	4	5	6	7
9	I don't feel comfortable opening up to others.	1	2	3	4	5	6	7
10	I often wish that other people's feelings for me were as strong as my feelings for them.	1	2	3	4	5	6	7
11	I want to get close to people, but I keep pulling back.	1	2	3	4	5	6	7
12	I often want to merge completely with people, and this sometimes scares them away.	1	2	3	4	5	6	7
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18	I need a lot of reassurance that I am loved by others.	1	2	3	4	5	6	7

		Disagree Strongly			Neutral/ Mixed			Agree Strongly
19	I find it relatively easy to get close to others.	1	2	3	4	5	6	7
20	Sometimes I feel that I force people to show more feeling and commitment.	1	2	3	4	5	6	7
21	I find it difficult to allow myself to depend on others.	1	2	3	4	5	6	7
22	I tell close others just about everything.	1	2	3	4	5	6	7
23	I find that people don't want to get as close as I would like.	1	2	3	4	5	6	7
24	I feel comfortable depending on others.	1	2	3	4	5	6	7
25	I get frustrated when people are not around as much as I would like.	1	2	3	4	5	6	7
26	When others disapprove of me, I feel really bad about myself.	1	2	3	4	5	6	7

FEELINGS ABOUT YOURSELF

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1	On the whole, I am satisfied with myself.	Strongly disagree	Disagree	Agree	Strongly agree
2	At times I think I am no good at all.	Strongly disagree	Disagree	Agree	Strongly agree
3	I feel that I have a number of good qualities.	Strongly disagree	Disagree	Agree	Strongly agree
4	I am able to do things as well as most other people.	Strongly disagree	Disagree	Agree	Strongly agree
5	I feel I do not have much to be proud of.	Strongly disagree	Disagree	Agree	Strongly agree
6	I certainly feel useless at times.	Strongly disagree	Disagree	Agree	Strongly agree
7	I feel that I'm a person of worth, at least on an equal plane with others.	Strongly disagree	Disagree	Agree	Strongly agree
8	I wish I could have more respect for myself.	Strongly disagree	Disagree	Agree	Strongly agree
9	All in all, I am inclined to feel that I am a failure.	Strongly disagree	Disagree	Agree	Strongly agree
10	I take a positive attitude toward myself.	Strongly disagree	Disagree	Agree	Strongly agree

HOW YOU FEEL ABOUT YOUR RELATIONSHIP WITH YOUR PARTNER

Now, 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 Completely

- (2) Do you feel committed to maintaining your relationship with your partner?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8
 Not At All Completely
 Committed Committed

- (3) How does your relationship compare to your ideal?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8
 Far From 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 Completely

- (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 Extremely
 Likely to End 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

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

Completely

Attached

Attached

- (10) How much tension is there between you and your partner?

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

None

A Moderate

A Great

At All

Amount

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

Often Have

Such Fantasies

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

Extremely

Close

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

Completely

Thank you for completing these questionnaires. Please open your door to let the experimenter know you are finished.

Appendix C

QUESTIONNAIRE SET 2

How I Am in General

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

I am someone who...

- | | |
|--|---|
| 1. _____ Is talkative | 15. _____ Is ingenious, a deep thinker |
| 2. _____ Tends to find fault with others | 16. _____ Generates a lot of enthusiasm |
| 3. _____ Does a thorough job | 17. _____ Has a forgiving nature |
| 4. _____ Is depressed, blue | 18. _____ Tends to be disorganized |
| 5. _____ Is original, comes up with new ideas | 19. _____ Worries a lot |
| 6. _____ Is reserved | 20. _____ Has an active imagination |
| 7. _____ Is helpful and unselfish with others | 21. _____ Tends to be quiet |
| 8. _____ Can be somewhat careless | 22. _____ Likes to cooperate with others |
| 9. _____ Is relaxed, handles stress well. | 23. _____ Is generally trusting |
| 10. _____ Is curious about many different things | 24. _____ Tends to be lazy |
| 11. _____ Is full of energy | 25. _____ Is emotionally stable, not easily upset |
| 12. _____ Starts quarrels with others | 26. _____ Is inventive |
| 13. _____ Is a reliable worker | 27. _____ Has an assertive personality |
| 14. _____ Can be tense | 28. _____ Can be cold and aloof |

29. _____ Perseveres until the task is finished
30. _____ Can be moody
31. _____ Values artistic, aesthetic experiences
32. _____ Is sometimes shy, inhibited
33. _____ Is considerate and kind to almost everyone
34. _____ Does things efficiently
35. _____ Remains calm in tense situations
36. _____ Prefers work that is routine
37. _____ Is outgoing, sociable
38. _____ Is sometimes rude to others
39. _____ Makes plans and follows through with them
40. _____ Gets nervous easily
41. _____ Likes to reflect, play with ideas
42. _____ Has few artistic interests
43. _____ Is easily distracted
44. _____ Is sophisticated in art, music, or literature

My Traits

Please take a moment to think about who you are. Then, please rate yourself on each item using the scale below.

1 = never or almost never true; 7 = always or almost always true

1	self-reliant	1	2	3	4	5	6	7
2	yielding	1	2	3	4	5	6	7
3	helpful	1	2	3	4	5	6	7
4	defends own beliefs	1	2	3	4	5	6	7
5	cheerful	1	2	3	4	5	6	7
6	moody	1	2	3	4	5	6	7
7	independent	1	2	3	4	5	6	7
8	shy	1	2	3	4	5	6	7
9	conscientious	1	2	3	4	5	6	7
10	athletic	1	2	3	4	5	6	7
11	affectionate	1	2	3	4	5	6	7
12	theatrical	1	2	3	4	5	6	7
13	assertive	1	2	3	4	5	6	7
14	flatterable	1	2	3	4	5	6	7
15	happy	1	2	3	4	5	6	7
16	strong personality	1	2	3	4	5	6	7
17	loyal	1	2	3	4	5	6	7
18	unpredictable	1	2	3	4	5	6	7
19	forceful	1	2	3	4	5	6	7
20	feminine	1	2	3	4	5	6	7
21	reliable	1	2	3	4	5	6	7
22	analytical	1	2	3	4	5	6	7
23	sympathetic	1	2	3	4	5	6	7
24	jealous	1	2	3	4	5	6	7
25	has leadership abilities	1	2	3	4	5	6	7
26	sensitive to the needs of others	1	2	3	4	5	6	7
27	truthful	1	2	3	4	5	6	7

1 = never or almost never true; 7 = always or almost always true

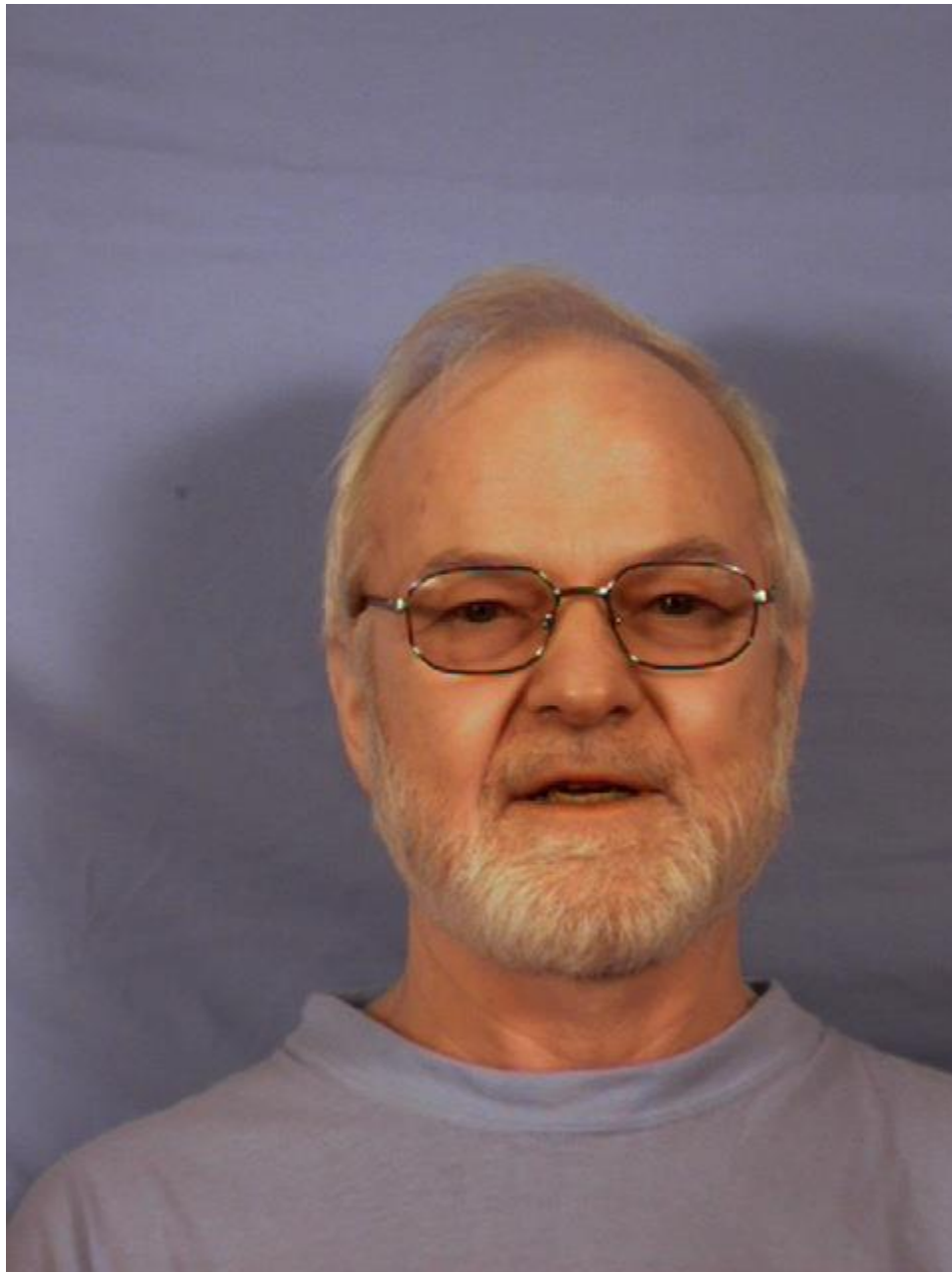
28	willing to take risks	1	2	3	4	5	6	7
29	understanding	1	2	3	4	5	6	7
30	secretive	1	2	3	4	5	6	7
31	makes decisions easily	1	2	3	4	5	6	7
32	solemn	1	2	3	4	5	6	7
33	willing to take a stand	1	2	3	4	5	6	7
34	tender	1	2	3	4	5	6	7
35	friendly	1	2	3	4	5	6	7
36	aggressive	1	2	3	4	5	6	7
37	gullible	1	2	3	4	5	6	7
38	inefficient	1	2	3	4	5	6	7
39	acts as a leader	1	2	3	4	5	6	7
40	childlike	1	2	3	4	5	6	7
41	adaptable	1	2	3	4	5	6	7
42	individualistic	1	2	3	4	5	6	7
43	does not use harsh language	1	2	3	4	5	6	7
44	unsystematic	1	2	3	4	5	6	7
45	competitive	1	2	3	4	5	6	7
46	loves children	1	2	3	4	5	6	7
47	tactful	1	2	3	4	5	6	7
48	ambitious	1	2	3	4	5	6	7
49	gentle	1	2	3	4	5	6	7
50	conventional	1	2	3	4	5	6	7

Appendix D

1.



2.



3.



4.



5.



6.



7.



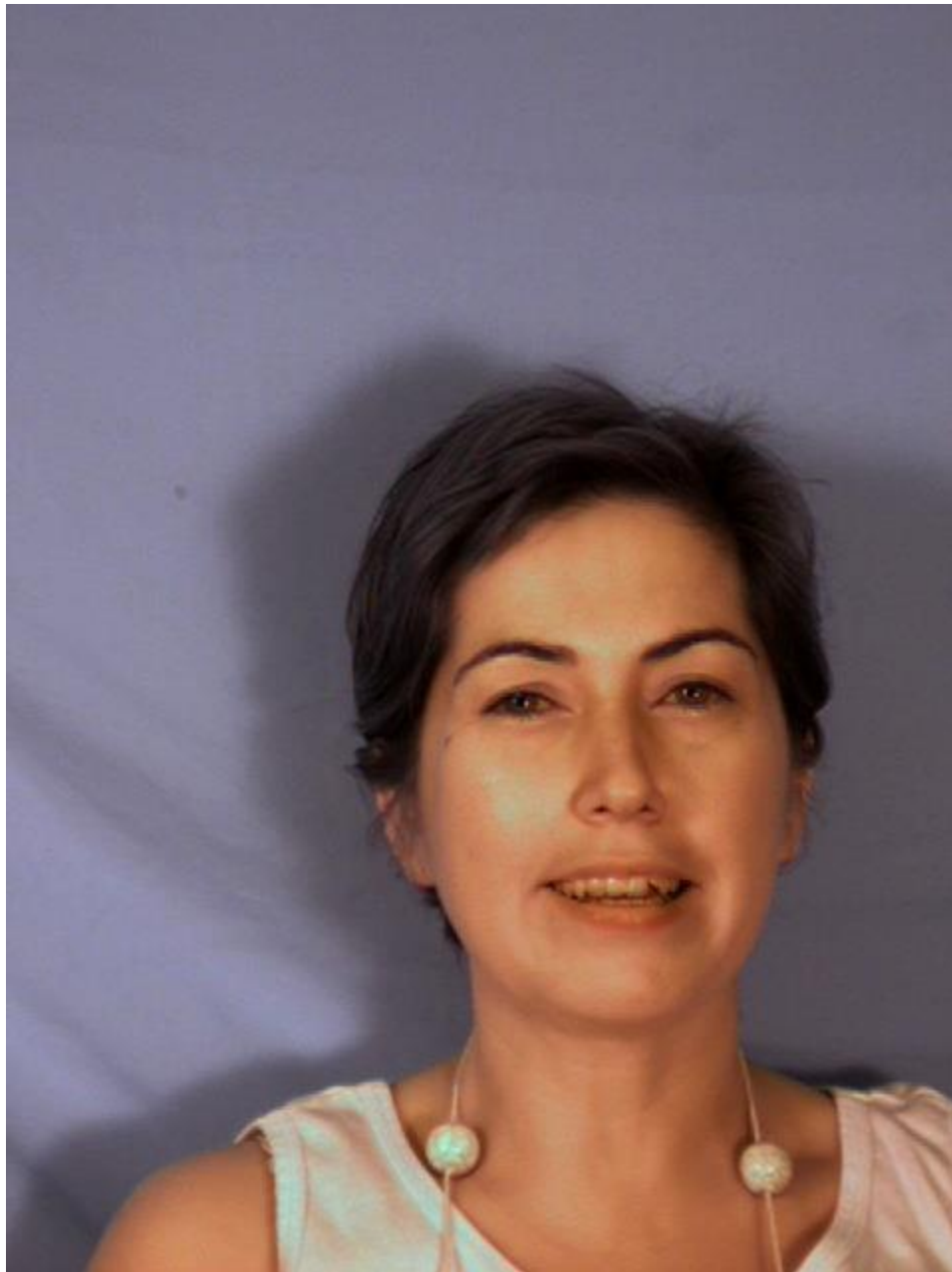
8.



9.



10.



11.



12.



13.



14.



15.



Appendix E

Photo Number:

Photo Rating Sheets

Please look carefully at the person in the picture. Then complete this rating sheet with your guesses about the person pictured. You may continue to look at the photo as much as you'd like to make your ratings.

1. Current relationship status (please check one):

_____ single

_____ in a casual relationship

_____ in a committed relationship

_____ engaged

_____ married

2. Previous relationships (please check one):

_____ never married previously

_____ divorced previously

_____ widowed previously

3. Longest romantic relationship: _____(years)_____ (months)

4. Number of children: _____

5. Likelihood of cheating on a romantic partner (circle one):

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

6. Likelihood of using an online dating site (circle one):

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

7. Life expectancy: _____ years

8. Profession: _____

Circle the number that is closest to the word that best describes this person in his/her romantic relationships:

cold	1	2	3	4	5	6	7	warm
passionate	1	2	3	4	5	6	7	calm
dominant	1	2	3	4	5	6	7	submissive
inattentive	1	2	3	4	5	6	7	attentive

kind	1	2	3	4	5	6	7	unkind
predictable	1	2	3	4	5	6	7	unpredictable
fair	1	2	3	4	5	6	7	unfair
active	1	2	3	4	5	6	7	passive
volatile	1	2	3	4	5	6	7	stable

Personality:

Here are a number of personality traits that may or may not apply to this person. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of statements applies to the person pictured, even if you think one characteristic applies more strongly than the other.

1	2	3	4	5	6	7
Disagree	Disagree	Disagree	Neither agree	Agree	Agree	Agree
Strongly	modestly	a little	nor disagree	a little	modestly	Strongly

I see the person pictured as:

- | | |
|--|-------------------------------------|
| _____ 1. Extraverted, enthusiastic. | _____ 6. Reserved, quiet. |
| _____ 2. Critical, quarrelsome. | _____ 7. Sympathetic, warm. |
| _____ 3. Dependable, self-disciplined. | _____ 8. Disorganized, careless. |
| _____ 4. Anxious, easily upset. | _____ 9. Calm, emotionally stable. |
| _____ 5. Open to new experiences, complex. | _____ 10. Conventional, uncreative. |

Appendix F

QUESTIONNAIRE SET 3

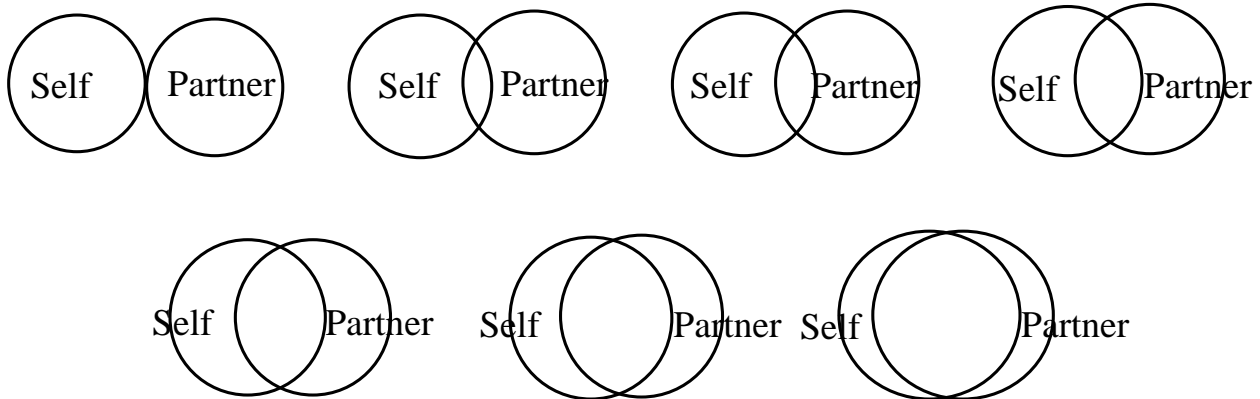
How Do You Feel Right Now? (SSS)

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-----2-----3-----4-----5-----6		
Not at all		Very much
Comforted	_____	Supported _____
		Attentive _____
Nervous	_____	Stressed out _____
		Enthusiastic _____
Secure	_____	Calm _____
		Encouraged _____
Anxious	_____	Loved _____
		Cared for _____
Safe	_____	Excited _____
		Upset _____
Worried	_____	Protected _____
		Unthreatened _____

*It is normal for feelings in relationships to change minute-to-minute. For the questions on this page, think about how you're feeling **right now**.*

Circle the picture below the best represents your relationship with your partner at this time.



Indicate your agreement with the following statements right now:

I feel a sense of “oneness” with my partner.

1-----2-----3-----4-----5-----6-----7
Not At All **Extremely**

I feel like my partner and I are in sync.

1-----2-----3-----4-----5-----6-----7
Not At All **Extremely**

I feel more connected with my partner than usual.

1-----2-----3-----4-----5-----6-----7
Not At All **Extremely**

Your Thoughts and Feelings Right Now

Please rate each of the following statements according to how much you agree or disagree with it *right now*. For each statement, please write the number, using the scale below, that best indicates how you feel right now.

1	2	3	4	5	6	7
Disagree			Neither agree			Agree
Strongly			nor disagree			Strongly
1.	Right now, my relationship is one of my top priorities.....					_____
2.	Right now, I'm not that focused on my relationship.....					_____
3.	Right now, I am thinking a great deal about my relationship.....					_____
4.	Right now, my attention is on my partner.....					_____
5.	Right now, my relationship is at the forefront of my mind.....					_____
6.	Right now, my attention is on things other than my partner.....					_____
7.	Right now, I would be able to tell if my partner needs my help or support.....					_____
8.	Right now, I have mixed feelings about being close to my partner.....					_____
9.	Right now, I want my relationship with my partner to last for a very long time.....					_____
10.	Right now, I would be able to easily recognize my partner's needs and feelings.....					_____
11.	Right now, I feel secure.....					_____
12.	Right now, I feel my partner acts in an inconsistent manner that is hard to predict.....					_____
13.	Right now, I don't feel concerned about my partner's problems.....					_____
14.	Right now, I feel I can rely on my partner to react in a positive way if I expose my weaknesses to him/her.....					_____

1	2	3	4	5	6	7
Disagree			Neither agree			Agree
Strongly			nor disagree			Strongly

15. Right now, I can trust in my partner..... _____

16. Right now, I wouldn't be very good at "tuning in" to my partner's needs or
feelings..... _____

17. Right now, I feel relaxed knowing that my partner is there for me now..... _____

18. Right now, it feels likely that I will date someone other than my partner within
the next year..... _____

19. Right now, I can empathize with my partner and his/her problems..... _____

20. Right now, I am committed to maintaining my relationship with my partner..... _____

21. Right now, I find it difficult to see things from my partner's point of view..... _____

Thank you for completing these questionnaires. Please open your door to let the experimenter know you are finished.

Appendix G

PARTNER QUESTIONNAIRE

Following the instructions the experimenter gave about how to behave during my partner's photo-rating task was...

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
Easy Challenging
1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
Comfortable Uncomfortable
1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
Not stressful Stressful
1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
Not enjoyable Enjoyable
1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
Very pleasant Very unpleasant

HOW DID YOU FEEL ABOUT THESE INSTRUCTIONS?

Please think about how you felt while you were *performing the instructions the experimenter gave you about how to behave during your partner's photo rating activity*. Then rate the extent to which you felt each of the following emotions by placing a number between 1 and 5 in the space to the right of each one. Please be honest so that we can understand how you truly felt.

1 = Not At All

2 = A Little Bit

3 = Somewhat

4 = Very Much

5 = Extremely

Pleased _____	Afraid _____	Calm _____
Concerned _____	Angry _____	Nervous _____
Enthusiastic _____	Scared _____	Happy _____
Anxious _____	Ashamed _____	Proud _____
Sad _____	Excited _____	Upset _____
Worried _____	Stressed Out _____	Bored _____

Please describe anything that made it difficult to follow the instructions.

How often did you touch your partner during the time they were evaluating photos?

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

Not at all Intermittently Continuously
 (sometimes) (the whole time)

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

... while you are relaxing together, like when you are watching tv?

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

Never Very often

...when you are in public?

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

Never Very often

... when your partner is doing work (e.g., school work, professional work)?

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

Never Very often

I am usually very comfortable touching my partner.

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

Not at all Completely

True True

What do you think was the purpose of this study?

You have completed the study. You can rest quietly until the experimenter returns.

Appendix H

QUESTIONNAIRE SET 5

Your Thoughts and Feelings About the Raffle Task

In the space below, please describe *why you divided up the raffle the way you did*. There are no right or wrong ways to divide the tickets between you and your partner. We would just like to understand why you divided the tickets the way that you did. Please help us by answering honestly and providing as much detail as possible. Possible reasons might be that you felt obligated to split up the raffle tickets in a certain way, you would feel guilty if you divided up the tickets in a different way, etc. You may have had a variety of reasons, or you may have had just one or two. Please list as many reasons as you actually had. There are not right or wrong reasons. We just want to know how you truly feel. If you need more space to write, let the experimenter know.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Your Thoughts and Feelings About the Raffle Task

Please rate the following statements about **why** you divided the raffle tickets the way you did using the following scale. Please rate statements only as true if they represented your initial reason(s) for dividing up the tickets the way you did.

1	2	3	4	5	6	7
Not at all			Somewhat			Very true
true			true			

I divided the raffle tickets the way I did because...

1. I did not want to do the task..... _____
2. I didn't want to feel guilty..... _____
3. I felt external pressure to divide the raffle tickets in a certain way..... _____
4. I wanted my partner to do the task..... _____
5. I wanted to do the task..... _____
6. The task seemed fun or interesting to do..... _____
7. I did not want to seem mean or unkind..... _____
8. I didn't want to seem like a pushover..... _____
9. My partner would be more willing to do the task than I would..... _____
10. I'm better at these kinds of tasks than my partner..... _____
11. I wanted to help out my partner..... _____
12. My partner is better at these kinds of tasks than me..... _____
13. My partner would have divided them the way I did..... _____
14. My partner would be embarrassing if he/she tried to do the task. _____
15. I was worried about what the experimenter would think of me. _____
16. I was worried about what my partner would do or think. _____
17. I would embarrass myself if I tried to do the task..... _____
18. I wanted to get back at my partner for something..... _____
19. I tried to divide them as fairly as possible..... _____
20. I get a lot of pleasure out of making things easier for my partner..... _____

1	2	3	4	5	6	7
Not at all			Somewhat			Very true
true			true			

21. I enjoy taking care of my partner..... _____
22. I fear my partner will become unhappy with our relationship if I don't do things for
him/her..... _____
23. I feel that helping my partner out is a way to fulfill my role as his/her partner..... _____
24. Taking care of my partner is what it means to be in a relationship..... _____
25. I need to be unselfish for the sake of our relationship..... _____
26. I get anxious if I don't feel like I'm helpful to my partner..... _____

Think back to the part of the study when your rated faces.

Was your partner in the room with you during this time? Yes No

If yes (your partner was in the room with you), please complete the questions below. If no (your partner was not in the room with you), please skip this page and continue on the next page.

1. Indicate what you thought about your partners behavior while you rated faced by writing a number between 1 and 5 in the space to the right of each of the words listed below.

1=Not at all

2=A little bit

3=Somewhat

4=Very much

5=Extremely

My partner's behavior was:

Loving	_____	Thoughtful	_____	Awkward	_____
Annoying	_____	Controlling	_____	Caring	_____
Warm	_____	Kind	_____	Affectionate	_____
Frustrating	_____	Unusual	_____	Natural	_____

2. Did you partner touch you at all while you rated photos? Yes No
3. Did your partner talk to you while you rated the photos? Yes No
4. Do you think your partner influenced how you rated the photos? Yes No

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

... while you are relaxing together, like when you are watching tv?

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
 Never Very often

...when you are in public?

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
 Never Very often

... when you are doing work (e.g., school work, professional work)?

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
 Never Very often

I am usually very comfortable being touched by my partner.

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8
 Not at all Completely
 True True

What do you think was the purpose of this study?

Thank you for completing these questionnaires. Please open your door to let the experimenter know you are finished.

Appendix I

Debriefing Sheet

Study Title: Early stage relationships study

Principal Investigator: Brittany Jakubiak, Ph.D. student

Psychology Department
Carnegie Mellon University
5000 Forbes Avenue
(412) 268-8112
bjakubia@andrew.cmu.edu

Faculty Advisor: Brooke C. Feeney

Other Investigator(s): Bria Toneff, Delancey Wu

Thank you for participating today!

Your participation has helped us to move forward in answering our research questions, and we appreciate that you have volunteered your time.

Explanation of Study

We're interested in how receiving affectionate touch affects individuals' decision-making in their relationships. We are interested in decisions about how you spend your time and about sacrificing, in particular. To address this question, we asked one of the couple members to help us as a confederate to either provide or not provide touch during the study. Which participant was the confederate and your assigned experimental condition were both randomly determined before the study started. This study will allow us to investigate whether affectionate touch leads people to behave differently and feel differently about their relationships. We predict that when one receives touch, they will become more motivated to prioritize activities with their partner and more motivated to sacrifice. We also wanted to see whether your perception of your relationship and your feelings impact these decisions. The results of this study will help us to understand the effects of touch in romantic relationships. We hope to contribute to the literature about why touch in relationships is related to positive relationship and individual outcomes and to find ways to help couples experience fulfilling relationships.

Questions or Concerns?

If you have any additional questions or concerns, please contact Brittany Jakubiak (information above). We welcome your feedback.

If any of the questions you considered today made you feel upset and you would like to talk to someone, Counseling and Psychological Services are offered for free on campus. You can make an appointment by calling 412-268-2922.

Appendix J

Protocol and Script: Romantic Couples in Different Contexts Study

Please arrive 30 minutes early to get everything prepared.

Setup

1. Have the packets you need laid out.
2. Count out 9 raffle tickets for raffle task.
3. Put the “Study in Progress” signs on the study doors.
4. Have experimenter sheet out.
5. Flip a coin to assign participants to roles of “target” and “partner”.
 - a. Heads = target is person who sits on the **right** side of the sofa
 - b. Tails = target is person who sits on the **left**

When participants arrive:

1. Greet the couple
2. Thank them for coming – and convey our appreciation for their time and participation.

As you read the script, be sure to look up at the couple often and pause to make sure they’re processing the information and to see if they have questions. Even though you’re reading a script, do it in a conversational way with a conversational tone. Interact with the participants as well, and don’t just read the script without regard for the participants’ reactions and comprehension.

Note on assigning packet colors:

The target participant will get the colored packets. The partner will get the white packets.

Introduction

[Bring consent forms and background questionnaires (Q1)]

Welcome to our study, and thank you for participating today. I'll be reading these instructions to make sure everyone who participates gets the same information, but please feel free to stop me if you have any questions.

Before we begin, please put your cell phones away or turn them off so they are not distracting during the session and does not interrupt our activities. *[Pause to allow participants to put away phones.]*

Thanks! Participating is completely voluntary, so you are free to skip any questions you don't feel comfortable answering, and you may leave at any time.

In this lab, we study many aspects of social psychology, particularly romantic relationships. We want to learn more about how people think and feel and behave in their relationships. For example, we are interested in are how partners communicate with each other and how relationships influence individual well-being at different relationship stages. In this study, we are recruiting couples who have been in a relationship for a relatively short time (less than 5 months) and we will have you participate in a variety of activities together and separately. You will fill out questionnaires about yourselves and your experiences, evaluate images, and participate in decision-making tasks. We're just generally interested in relationships and individuals who are in relationships. There are no right or wrong ways to behave while you're here and there are no "right-answers" to any questions, so please just answer honestly and respond the way you normally would in your everyday life. I'll provide more information about each activity as we go, and feel free to ask questions if you have any.

All of the information we collect from you today will be kept strictly confidential and anonymous. We will ensure this by assigning your data a random code number, so please don't write your name on any of the materials. Also, all of the information you provide will be used only in the form of summaries combined across all participants. You won't be identified or singled out in anyway.

Please take a moment to read over and sign these consent forms. If you would like a copy to take with you, I can provide one for you.

Background Questionnaire (Q1)

Thanks!

The first activity involves completing some background questionnaires. Please answer them honestly and thoughtfully, and let me know if you have any questions as you're working. If you have any questions, just open your door and I'll come to you.

[To partner] I'll have you work next door so that you both have privacy to complete your questionnaires. When you're finished, please open your door to let me know when you're ready to continue.

*[Give participants background questionnaires in their respective rooms and then leave. Return when participants open their doors, **but go to target participant first. Let the confederate wait if they finish first.]***

Touch Task Prep

[Bring bogus packet for target.]

[Give instructions to each participant in their own room, but give instructions to target first.]

[To target] Thank you for completing those questionnaires. Now I have a personality packet for you both to fill out so you can stay in your separate rooms a bit longer. Please read the instructions and answer the questions in the packet. If you finish before I come back, please wait until I return. *[Hand target bogus questionnaire.]*

[Walk back to confederate's room when confederate is ready.]

TOUCH CONDITION *****

Instead of working on an activity, I would like to ask you to help with this study by being part of our experiment. Here is what will happen. For the next activity, your partner will evaluate images during two sessions with a break in between. While your partner is evaluating the images (both before and after the break), please sit with your partner and affectionately touch them for the whole time. You can hold your partner's hand, have your arm around them, rest your hand on their leg, or something similar. You should do whatever would be normal and comfortable to you and your partner. 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 both sessions. 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 you can feel free to smile at them or anything like that. 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. Before the activity, I'm going to tell your partner that you got to choose from a list of possible fun activities for this portion of the study and your choice was to sit in the same room with them. 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 both sessions of the next activity. You can start as soon as they begin the evaluation task – take a break during the break period while you both complete questionnaires – and then begin again during the second session of your partner's evaluation task. Let's go see if your partner is ready for the next activity.

NO TOUCH CONDITION *****

Instead of working on an activity, I would like to ask you to help with this study by being part of our experiment. Here is what will happen. For the next activity, your partner will evaluate images during two sessions with a break in between. While your partner is evaluating the images (both before and after the break), please sit on the other couch across from your partner and relax by yourself. We have some magazines by that sofa. You can read a magazine, read something on your phone, or just relax quietly. Just do whatever is natural and comfortable for you during this time. Please do not talk to your partner during the sessions because they will be working, but you can feel free to smile at them or anything like that. 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. Before the activity, I'm going to tell your partner that you got to choose from a list of possible fun activities for this portion of the study, and your choice was to sit in the same room with them. At the end of the study, I will tell them that I actually asked you to sit with them and asked you to sit on the other sofa. 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 on the other couch opposite to your partner during both sessions of the next activity. I'll have you both fill out a questionnaire during the break between the activities and then you can continue to rest on the opposite sofa during the second session of your partner's evaluation task. Let's go see if your partner is ready for the next activity.

Touch Task Pt. 1

[Take confederate back to living room lab]

[Bring evaluation packet]

Okay, we're ready to start the next activity. **[To target]** Your partner already got started with a decision making activity; he/she got to choose what he/she wanted to do during this portion of the study from a list of fun options. Your partner chose... *[flip to the paper underneath and read word for word – it will say “to relax in the same room as your partner so you two can be together” – flip back]*

[Look up during this part:] So is it okay if he/she hangs out in here while you work on your next task? **[So don't ask if it's okay at all?]**

Your next activity is to make evaluations of the people in each of these photos in this packet. You will be judging each person's age, height, gender, education level, life expectancy, etc. Also, please list 5 personality adjectives that you think describe the person in the photo – things like “funny”, “kind”, “smart” – not adjectives that describe physical appearance. You don't have to put too much effort into this task—it's just your first impressions, so don't think too hard about it. Just write whatever comes to mind.

This activity is about your own impressions only, so your partner should not participate in making evaluations. I've instructed him/her not to talk to you while you work on the activity, but you can look at each other, smile at each other, and stuff like that.

You don't have to finish all of the photos. I'll just have you work for a period of time and however many you rate is fine. Feel free to take breaks as you need them. I will also give you a break from this activity when you're halfway through it, so that you can do something else and then continue evaluating photos again. We used to have people complete this evaluation activity all in one go, but participants said they preferred to break it up in this way so that it doesn't become too tedious and so that their evaluations are as accurate as possible. During the break, we'll have you complete some more questionnaires.

Do you have any questions? *[Answer any questions.]* Alright! I'll leave you to your evaluations, and I'll be back in five minutes.

[Leave couple for 5 minutes. Prepare Mediation Questionnaire (Q2).]

Mediation Questionnaire (Q2)

Thank you for doing the first part of that task. I'm going to give you a break from the evaluation activity now and have you complete this set of questionnaires. You can both complete these questionnaires in this room, but *[to confederate]* please sit at this table *[gesture towards table to the side]* to complete your questionnaire so that you both have privacy. Please do not talk as you complete your questionnaires. Open the door when you both have finished.

Touch Task Pt. 2

Thank you for completing those questionnaires. Now we will return to the evaluation activity, so please continue the activity as you were doing before with this new packet. I'll be back in a few minutes.
[Leave couple for 3 minutes. Prepare the 9 raffle tickets for the target.]

Increasing Dependence Questionnaires

Okay, we're finished with that activity. Thank you for your help.

You will do your next activities in separate rooms. But first, I have a few more questionnaires for you to complete. I'll have you work on these in separate rooms again, and please open your doors when you are finished. Then, we'll get started on the next activities.

[Give Increasing Dependence questionnaire to target]

Experiences during the study questionnaire – Partner only

I just have one last questionnaire for you to complete today. This questionnaire asks you to tell us how you felt about following the instructions I gave you earlier for when you sat in the room with your partner as he/she did the evaluation activity. You can open the door when you're finished, and then I'll just let you hang out while you partner finishes a final activity.

[Give Experiences of Touch questionnaire to the confederate (Q3 C)]

Raffle Task – Target only

Now you have the opportunity to make a choice. For the next activity, one of you will need to participate in a task that most participants find to be stressful. The exact task will be randomly determined by a coin flip—It will either be a 5-minute speech or a 5-minute mental arithmetic task—and either way, one of you will perform the task in front of a trained evaluator. The task also will be videotaped so that other evaluators can view the tapes later to rate them. I'll provide more instructions about these tasks later.

Because this task tends to be a stressful one for participants, we randomly select one of you to do this task based on a raffle. But we also give one couple member the opportunity set up the raffle, so we're giving you this opportunity while your partner is finishing up his/her questionnaires. There are 9 raffle tickets total (to make it a legitimate drawing), and you'll get to choose whose name to write on each of the tickets. You can write your name or your partner's name on each ticket, and you must write one name on each ticket. Your partner will not know or be told how you divided up the tickets; they will only know who was selected for the task. Only we will know how you divided up the tickets for the purposes of this study.

When you are done filling out the raffle tickets, please open your door so I know when you are finished.

[Prepare Motives for Sacrifice Questionnaire (Q3 T). When target is done filling out raffle tickets, collect raffle tickets.]

Thanks. Please fill out this last questionnaire while I get everything organized for the next task.

[Hand out Motives for Sacrifice Questionnaire (Q3 T).]

[When finished...]

Thank you for your patience. **[To target]** I said that there would be one more activity, but we have actually reached the end of the study and have finished all of the activities. I'm going to get your partner to describe the purpose of the study and answer any questions you have.

Debriefing

[Pause throughout to ask if the couple has questions. Make sure they're following what you're saying, and let the couple make comments, suggestions, etc.]

I want to thank you very much for your participation in our research project. We really appreciate your time, effort, and willingness to help us learn more about relationships.

I'd like to tell you about the research we are conducting, but first, can you tell me what you think the purpose of this research is?

[Take note of guesses on experimenter sheet. If they have guesses, ask when they had their guesses.]

Okay. Overall, we're interested in how people make decisions about their relationships. First of all, we're interested in decisions about how much time people spend together and what kinds of activities they plan to do together. We're also interested in difficult decisions – decisions made when couple members disagree or when the decision would impact one couple-member more than the other. Past research has shown that how you make decisions within your relationship can impact your satisfaction with your relationship and your own well-being. Sometimes partners have to let go of their own interest for the interest of their partner, which is also known as making a sacrifice. Even when people sacrifice, they can do so for many different reasons. People have different kinds of motivations for everything they do. Sometimes people do things because they truly enjoy doing it, called intrinsic motivation, whereas sometimes people do things because they feel some sort of external pressure – like to get approval or avoid punishment, and this is called extrinsic motivation. Actions that are intrinsically motivated often lead to a higher level of satisfaction in relationships and improvements to one's well-being. The main goal of this study is to find a way to help people make decisions in their relationships that are intrinsically motivated and are driven by their true desires.

We think that affectionate touch is one behavior that might influence decision-making in relationships and also motivation for decisions. Touch makes us aware of our relationships with our partners, so it might make us more likely to want to prioritize doing activities that involve them, and it might make us more likely to want to sacrifice for them when we're given the opportunity.

To investigate this prediction, we asked one of you to help us with the study by touching (or by not touching) your partner during the image evaluation task. In other couples, we had one partner help out by not touching (providing touch) instead. So, while it seemed like your partner was *[touching / not touching]* you because they chose to do so, we actually asked them to behave in that specific way for the study. Seeing the differences between touch and no touch will allow us to determine whether touch influences people's decision making in relationships.

We gave one of you the opportunity to make a sacrifice to see how touch affects willingness and motivation to make a sacrifice. **[To confederate]** Your partner was told that one of you would have to do a stressful task, but we would determine which one of you would do the task by having a raffle. Your partner filled out several raffle tickets with either your name or his/her name. Afterwards, we asked about possible reasons why you divided up the tickets the way you did to look at what kinds of motivations you had in making this decision.

This raffle task was made to be difficult on purpose, so don't feel bad for however you decided to divide up the raffle tickets. We have seen many different ways of dividing up the tickets, and there are truly no right or wrong ways to have done this task. Different things work for different people, and you know your partner better than anyone else. Your decision about how to divide the raffle tickets (and all of your data from the study) is completely confidential, so **[to confederate]** please don't ask or pressure your partner to reveal how they divided up the raffle tickets. Because all collected research data is confidential, it is important that you help us maintain each other's confidentiality and respect each other's privacy with regard to all aspects of the study – including the questionnaires and the raffle.

The results of this study will help us learn how people can become more intrinsically motivated in their relationships and whether touch can help promote that motivation.

Do you have any questions so far? *[Answer any questions that they have.]*

Great! Lastly, as I stated before, all the information that we obtained from you today will be kept completely anonymous and confidential. No one outside of the research staff will have access to the data, and research staff will use the data for research purposes only. Only our highly trained research staff would ever have access to any of your information.

[Give debriefing sheet]

Here is an information sheet for you to take with you. It is basically just a brief summary of everything I've just explained to you. If you are interested in learning more about the research we are doing, or if you have any future questions, comments, or suggestions, please feel free to contact us at the phone number or email address provided on your feedback sheet.

Also, if you know of other couples who will be participating in our study, please help us keep the nature of the study confidential until they have had a chance to participate.

[Say thanks. Give credit or payment. If giving payment, remember to have them sign a receipt for each participant who's receiving money.]

Finishing Up

1. Count how many of the target's raffle tickets had their name or their partner's name. Write down how many of each on the experimenter sheet.

Appendix K

Motives Coding Manual

Background/Intro Notes

In this study, one couple member was given an opportunity to divide 9 raffle tickets between him/herself and his/her partner to determine who would have to do an unpleasant task (i.e., give a speech and do complex mental arithmetic). This person was instructed to write either his/her own initials or his/her partner's initials on each ticket. Afterwards, participants were asked to write why they divided the tickets the way they did. It is this open-ended response that should be coded for the degree to which 6 types of motives were present.

There are 3 axes of motives (and 6 types): intrinsic vs. extrinsic, approach vs. avoidant, and altruistic vs. egoistic. While each axis has two ends, these ends are *not mutually exclusive*. That means that individuals may have both intrinsic and extrinsic motives to varying degrees – or both approach and avoidance motives to varying degrees, etc. For example, if someone says, “I divided the tickets the way I did because I didn’t want to feel guilty,” this would be an extrinsic motive, but if the same person also says, “The task seemed fun to do,” this response would also be coded as intrinsic. So, the presence of one motive does not mean that the other cannot also exist.

You will rate the whole free-write section and make ratings to indicate the extent to which each type of motive is present in the writing. Use the rating scale below. After assigning a rating, please provide evidence (on the codesheet near each rating) for why you rated the particular motive the way you did; for example, provide actual quotes from the free-write that indicate that particular motive. Try to not read too much into a statement or make too big of an inference. Also, not every sentence is relevant to the motivations you have to code for, so you don’t have to code irrelevant statements.

When using the 5-point rating scale below, make your ratings to represent how strongly the motive was present. Do not rely on the amount of writing to determine how strongly a particular motive is present – as someone may clearly and strongly express a given motive in one statement.

Note: How the participant actually divides the tickets should not affect your ratings because sometimes participants with the same motives do not divide the tickets the same way. For example, two participants can say, “I did not want to do the task,” but one participant could give their partner all the tickets and none for themselves while the other participant could give 5 tickets to their partner and 4 tickets to themselves. Despite the fact that these two participants divided the tickets differently, they

still expressed the same motive and would receive similar (avoidance) ratings. Also, please do not look at the motives questionnaire that the participants completed after the free-write section, as these two sections are two separate measures, so we don't want coders to be influenced by the participants' self-ratings of their motives.

Rating Scale Number Definitions

Each motive should be rated on the following 5-point scale as defined below:

1 = Not at all

None of this type of motive was mentioned in the free-write.

2 = Low Quality

The free-write is weak or low in clarity of this motive type.

3 = Moderate Quality

The free-write indicates a moderate level of strength and clarity of the type of motive described.

4 = High Quality

The free-write indicates a high level of strength and clarity of the type of motive described.

5 = Highest Quality

The free-write shows the clearest and strongest statements of this type of motive that could be expected to occur in the motive free-write. There should be no confusion about what this participant's motive was. The participant need not to have written many sentences about this motive as long as they are clear about why they divided the tickets the way they did.

Motive Definitions

Intrinsic- Intrinsic motivation is the degree to which a participant does something because they gain internal rewards out of doing a certain activity. People with intrinsic motivation are also internally driven to behave and do certain activities according to one's self-endorsed values (Gaine & La Guardia, 2009). Such internal reasons often include having genuine interest in the activity or doing the activity because they sincerely believe in doing the activity to fulfill an internal need. *Doing something intrinsically doesn't mean that it results in a positive action*; someone can be intrinsically motivated to do something negative, such as making their partner do the task as pay back for something. Because intrinsic motivation comes from an internal drive, this means that something should only be coded as intrinsic if it's not entirely dependent or contingent on the partner's (or anyone else's) wishes or motives.

Statements that have the phrases "I want," "I believe," or "I would rather" should be rated at least a 2 or 3 for intrinsic and rated higher if more evidence of intrinsic motivation is present in the free-write. These phrases don't have to be present in the free-write, but if they are present, please follow the rule above.

Examples:

- I wanted to help out my partner. ("I want" indicates that the target was motivated by their internal desires.)
- I get a lot of pleasure out of making things easier for my partner. (The partner gets internal satisfaction out of making things easier for their partner.)

Extrinsic- Extrinsic motivation is the degree to which someone does an action to get external rewards (or an outcome or consequence not related to the original action). This type of motivation arises from outside the individual, as opposed to **intrinsic motivation**, which originates inside of the individual. One kind of extrinsic motivation is feeling a sense of obligation to fulfill some sort of external rule such as social norms, partner's wishes, etc. Another kind is to make a sacrifice to either avoid something (avoid feeling guilty if didn't sacrifice) or by using the action as a means to an end (making a sacrifice just to look impressive to others). Often when someone says that they "should" do something or do not want to "seem" like something (such as they don't want to seem mean), this implies extrinsic motivation because they feel like they have to adhere to some external pressure or rule. If it was intrinsic, they wouldn't feel like they *should've* done something; they would have just done it without saying they *should* do it. A statement would also be considered extrinsic if the participant cited or mentioned some external reason for why they made their decision.

In cases where a participant says they would have split the tickets evenly but couldn't, give a rating of at least a 2 but no more than a 3 (depending on strength and clarity), unless there is another extrinsic motive mentioned in the response. This type of statement suggests that the participant is following fairness norms (which is indicative of some degree of extrinsic motivation)

Examples:

- I should sacrifice for my partner to make them happy. (Different from "I wanted to sacrifice for my partner to make them happy," which would be coded as intrinsic because "I wanted" indicates want to satisfy internal desires.)
- I didn't want to seem like a pushover. (Worried about how they would look to other people)
- I didn't want my partner to get angry at me. (Worried about how partner would perceive target and want to avoid the negative consequence of partner wrath)

Approach- Approach motivation is about wanting to attain or fulfill some goal or gain something positive, such as getting the opportunity to try out the task. This includes motives that include approaching the task or another positive goal related to the task.

Examples:

- I wanted to do the task. (Wants to fulfill a goal of doing the task)
- The task seemed fun or interesting to do. (Gaining a positive experience)
- I wanted to help out my partner. (Wants to help out partner by approaching the task)

Exploration- Participants' motives reflect an engagement in exploration when they express a willingness or desire to try something new, unfamiliar, and/or challenging. The participant expresses a readiness or willingness to take on a challenge. Even if the participant fears that they will mess up or experience some negative consequence from taking on the challenge, they are willing to try it. The motive would also reflect exploration if the participant expresses an interest in discovering something about himself/herself – or about learning something else. Exploration involves the motive to move away from one's secure base to engage actively in the external environment (e.g., through work, play, socializing, taking on challenges/risks, learning, discovery).

Exploration can be classified as a type of approach motivation. However, you will give separate codes for approach motivation and exploration, as there will not always be complete overlap between the 2 codes. That is, giving a high rating for approach motivation does not necessarily mean that exploration also gets a high rating, because you can be approach oriented without exploring. For example, if someone wants to do the task to help their partner or to avoid negative consequences from the partner (unless they mention that helping their partner is new and challenging), they would receive a high rating for approach but a low rating for exploration based on that statement. If there is a high rating for exploration, though, then approach should also get a high rating. If the participant makes any indication that they are familiar with the task, they should receive a rating of a 1 or a 2 depending on the degree of familiarity.

Examples:

- The task seemed interesting to try out. (Shows interest in trying something new)
- I wanted to try something new.
- I wanted to challenge myself with this task. (Wants to challenge self)
- I wanted to try this task, even though I might mess up or feel embarrassed doing it. (Wants to try the task even though there's a risk of failing or some other negative consequence)
- I wanted to find out if I could do it. (Wants to learn something about the self)

Avoidance- Avoidance motivation is about “avoiding” or preventing some negative consequence from happening by taking on some action, such as making a sacrifice to avoid making the partner angry. This includes avoiding the task or some other negative outcome related to doing or not doing the task.

Examples:

- I didn't want to do the task. (Wants to avoid the task)
- I didn't want to feel guilty. (Wants to avoid feeling guilty)
- I would embarrass myself if I tried to do the task. (Wants to avoid the task because would be embarrassed)
- I fear my partner will become unhappy with our relationship if I don't do things for him/her. (Doing things in order to avoid partner being unhappy)
- I get anxious if I don't feel like I'm helpful to my partner. (Wants to avoid feeling anxious.)

Altruistic – Statements with altruistic motivation prioritize the partner over the self to improve the partner’s welfare. When one has altruistic motivation, benefiting/helping the partner is one’s ultimate goal, so if there happens to be some benefits to the self, this is just a side effect of helping one’s partner. This can include showing love and concern for one’s partner, reducing stress in one’s partner, etc.

Examples:

- I wanted to help out my partner. (Partner’s interest first)
- I enjoy helping my partner.
- I love my partner and want them to be happy.

Egoistic- Statements with egoistic motivation prioritize the self over the partner to improve one’s own welfare. In this case, benefiting the self is one’s ultimate goal (whether it’s gaining something positive or avoiding something negative to the self), so even if one also happens to be helping the partner in the process, this just a side effect of helping oneself.

This can sound like intrinsic motivation, but it is possible that someone can have egoistic and extrinsic motivations at the same time, such as if someone says “I feel like I should put my needs first.” Although this would suggest that the person wants to help themselves, the “should” suggests that they don’t want to do this for internal reasons, and they feel like they should adhere to some external rule that says to look out for yourself first. Egoistic motives can also include interest in the activity, obtaining a feeling of power, and/or a feeling of obligation (Feeney & Collins, 2003). Also, if someone states that they are helping someone else to benefit themselves, this would be rated high for egoistic and low or none for altruistic because they indicated they are doing it for themselves.

Examples:

- The task seemed fun or interesting to do. (Finds task fun, so acting on own interest)
- I did not want to seem mean or unkind (because the target is concerned about *how they appear* to others, such as their partner, so they have their own interests in mind rather than their partner’s interests.)
- I like doing tasks like this.
- I didn’t want to give a speech.
- I’m not good at these types of tasks.