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The Influence of Biology and Commitment Beliefs on Jealousy Responses

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Abstract

Research on biological sex differences in romantic jealousy suggests that males are more upset by sexual infidelity and females are more upset by emotional infidelity. Researchers identify two types of jealousy (i.e., sexual and emotional) and two types of commitment (i.e., sexual exclusivity and relational duration). The type of jealousy experienced may be a rational or emotional response to different commitment beliefs rather than dependent on biological sex. A sample of 230 college students completed various measures of commitment and jealousy as part of an online survey. People who valued sexually exclusive relationships were more distressed by sexual infidelity. People who valued long-term relationships were more distressed by emotional infidelity. Commitment beliefs predict jealousy responses irrespective of biological sex.

Relationships, whether they are with family, friends, or a significant other, have a major effect on a person's mood and general well being. If people have satisfying relationships, they are happy. If people's relationships are not satisfying, then they may become sad or depressed (Aro, Nyberg, Absetz, Henriksson, & Loennqvist, 2001).

Because relationships have an impact on a person's well being, it is important to understand the dimensions of relationships. Commitment beliefs and jealous responses are two aspects of relationships that can affect a person's mood and well-being.

Several theories have attempted to explain the differences between people in their commitment beliefs and jealous responses. Evolutionary theory (Buss, Larsen, Weston, & Semmolworth, 1992) credits fertilization with the basis of jealousy differences between females and males. Sociocultural theories (e.g., interdependence theory and the double-shot hypothesis), however, credit relationship beliefs for differences in commitment between people, independent of biological sex. The current study explores evolutionary and social theories as possible explanations for differences in commitment beliefs and jealous responses.

Jealousy

Maintaining meaningful and rewarding relationships with others can be difficult. Jealousy ranks highly among the many problems associated with forming and maintaining close romantic relationships (Daly, Wilson, & Weghorst, 1982). White defines jealousy as, "a complex of thoughts, feelings, and actions which follow threats to self-esteem and/or threats to the existence or quality of the relationship, when those threats are generated by the perception of a real or potential attraction between one's partner and a (perhaps imaginary) rival" (White & Mullen, 1989, p. 24). White makes the distinction that jealousy is not a single emotion but a mixture of thoughts, feelings, and emotions. Because jealousy is so diverse, the causes of and effects

jealousy can have on a relationship may be diverse as well.

In some cases, jealousy can lead people to become violent. Women who had recently left abusive relationships were interviewed to determine the reasons for the abuse. Over 54% cited a husband's jealousy as the reason for the abuse. In more extreme cases, jealousy has been the cause of murder. Experimenters coded 339 homicide cases in Detroit based on the motives of the perpetrator (e.g., arguments based on jealousy, business, or family). Of the examined cases, 58 (17%) were precipitated by jealousy (Daly et al., 1982). Though the damage caused by jealousy is not widespread, jealousy is a threat to relationships.

People often believe that jealousy is destructive to relationships and may result in violence. Some studies, however, suggest that romantic relationships containing some levels of jealousy are more likely to be successful. People who experience moderate levels of jealousy in their relationships are less likely to break up and more likely to stay in the relationship (Mathes & Severa, 1981). Mathes and Severa propose that jealousy at the beginning of a relationship keeps the partners interested in each other and prevents partners from becoming complacent with the relationship. Sheets, Fredendall, and Claypool (1997) have shown that jealousy in a relationship led partners to be reassuring of their interest in the relationship. The reassurance of the person's partner, not the person's jealous behavior, was associated with the jealous partner paying more attention to the relationship.

Despite the potential positive influence of jealousy on the relationship, people tend to experience jealousy

negatively. Men and women differ, however, on what aspects of jealousy distress them the most. In one study addressing these differences, men and women were asked to determine which of two scenarios, either sexual or emotional infidelity, distressed them more (Buss et al., 1992). Men were more distressed than women by the sexual scenario. Conversely, women were more distressed than men by the emotional infidelity scenario.

Theories of Jealousy

Scientists have proposed several theories as to why males and females differ in their experience of jealousy. The evolutionary theory, based on "internal female fertilization" (Buss, et al., 1992, p. 251), claims that in species where fertilization occurs inside the female, males must be more cautious about sexual infidelity. A male needs to ensure that the offspring produced by his mate is indeed his own. This doubt leads males to have significant "reproductive costs" over resource investments that must be protected. One cost includes financial investment. Males typically support pregnant females. The male does not want to support a child that is not his own. Another reproductive cost for males is time investment. The time spent with one female decreases the male's ability to cultivate a relationship with another female.

A male must be able to guarantee that his time and resource investments are going to be effective in securing the female and in ensuring that the offspring of the female is his own. The way males protect these "costs" is by developing jealousy. Jealousy is the male's ability to be aware of signs of sexual infidelity in the female. The evolutionary theory helps to explain why males tend to

experience higher levels of jealousy related to sexual infidelity than to emotional infidelity (Buss et al., 1992; Buunk et al., 1996).

Females, however, do not have the doubt that males have over the paternity of their offspring. The female, because fertilization occurs inside her body, never doubts if the child is hers. Raising a child, however, includes significant reproductive costs for females. The costs include being unable to reproduce with another male during the nine-month gestation period and caring for the child once it is born (Buss et al., 1992; Buunk, Angleitner, Oubaid, & Buss, 1996).

If the male invests time in another female, the female may lose his financial and emotional support. If a male becomes emotionally attached to and spends resources on other females, the female bearing his offspring will have fewer resources, reducing the success of her offspring relative to others. To protect the reproductive costs associated with raising a child, females experience higher levels of jealousy related to emotional infidelity more so than to sexual infidelity (Buss et al., 1992).

In contrast to the evolutionary explanation for sex differences in the experience of jealousy, sociocultural theorists have proposed an alternative, a rational explanation for jealousy. The “double-shot hypothesis” does not discount the effects of evolution on behavior but suggests that sociological influences affecting the beliefs of men and women about infidelity should be considered (DeSteno & Salovey, 1996). The double-shot hypothesis claims that males and females will choose either emotional or sexual infidelity based on which is most likely to suggest the other.

A situation involving a mate in love with someone else implies the likelihood of sexual infidelity occurring as well. Men, for example, may believe that women do not have sex without love. The belief that women who are engaging in sexual relationships with other men are also emotionally attached leads men to be more upset over sexual infidelity because it suggests that both sexual and emotional infidelity are occurring. Women believe, however, that men can have sex without love or that men who are emotionally attached to another woman are likely to also pursue a sexual relationship with that woman. This belief leads women to be more upset by emotional infidelity because it implies both sexual and emotional infidelity are occurring. For this reason, whether people choose sexual or emotional infidelity as more disturbing depends on which implies both are occurring (DeSteno & Salovey, 1996).

Commitment

Infidelity in a relationship represents a violation of an assumed contract of commitment between romantic partners. When fidelity is established, people are secure in their knowledge that their partner is invested materially and emotionally in prolonging the relationship. Being secure in this knowledge allows partners to be more satisfied with the relationship because they worry less about infidelity (Lemieux & Hale, 1999).

Not only do males and females differ in their experience of jealousy, they also differ in commitment levels (Lemieux & Hale, 1999; Sprecher, 1999). Males and females in love relationships were interviewed to determine if they differ in the types of commitment they experience. Two

major components of commitment were identified, sexual exclusivity and relational duration (Marston, Hecht, Manke, McDaniel, & Reeder, 1998).

Sexual exclusivity involves the decision to limit sexual experiences to the one partner. In a study on attitudes about sexual exclusivity and open vs. closed relationships, couples answered questions about the nature of commitment beliefs in their relationships. Couples in a closed relationship highly valued sexual exclusivity, and partners tended to confine sexual experiences to the relationship. Couples in an open relationship placed more value on sexual variety than on exclusivity and did not tend to confine sexual experiences to the relationship (Blasband & Peplau, 1985).

Another type of commitment is relational duration, which involves the decision to continue in the same relationship for a significant length of time. Relational duration may also be referred to as “future time orientation” (Oner, 2000). Future time orientation encompasses a person’s desire to plan for the future. In romantic relationships, people with high future time orientation see themselves with their partner later in life and are willing to plan their lives according to this belief of a long relationship.

Theories of Commitment

Evolutionary theory’s explanation of sex differences in jealousy (Buss et al., 1992; Buunk et al., 1996) should apply to commitment beliefs. Drawing conclusions from evolutionary theory, males and females should differ in their preferences for different types of commitment. Males who are concerned about paternity uncertainty should value sexually

exclusive partners. If a relationship is sexually exclusive, a male does not have to doubt the paternity of his offspring. Females who are concerned about securing resources should value long-term relationships. If a relationship is long-term, the female does not have to worry about losing resources to rival females.

Differences in commitment, however, may be explained not by biological sex but by sociocultural theories. Based on sociocultural theories, males and females differ in commitment beliefs because of social norms learned over a lifetime. Being part of a stable relationship is considered a social norm for females (Lemieux & Hale, 1999). A stable relationship is one that is long-term and involves high commitment. Females, therefore, should desire long-term and committed relationships because of social expectations.

Interdependence theory suggests partners’ observations of each other’s pro-relationship behaviors influence commitment. Pro-relationship behaviors are motivated by a desire to improve the relationship rather than behaviors motivated by self-interest. A man choosing to spend an anniversary at home with his partner rather than going to a baseball game with friends is an example of pro-relationship behavior. When each partner is highly committed, they will exhibit pro-relationship behavior. When a romantic partner notices these pro-relationship behaviors, she or he begins to trust the other partner more because the other partner is perceived to be interested in bettering the relationship. Trusting one’s partner leads to an increase in dependence in the relationship, which in turn increases one’s own commitment. This cycle continues as long as pro-relationship

behavior continues to be observed by each partner (Wieselquist, Rusbult, Foster, & Agnew, 1999).

Interdependence theory suggests that commitment is influenced by trust, defined as “a reflection of the partner’s commitment and benevolent intentions” (Wieselquist et al., 1999, p. 942). Trust is developed in relationships when people put themselves at risk of being hurt, and the partner responds favorably and sensitively. Since trust is dependent upon prior experience in the relationship and a willingness to put oneself at risk based on favorable experiences, it is likely to be low in beginning relationships. As relationships develop and pro-relationship behavior is observed and reciprocated, trust will increase as will commitment (Rempel, Holmes, & Zanna, 1985).

Overview and Hypotheses

Evolutionary and sociocultural theories offer different explanations for males’ and females’ ideas about jealousy and commitment beliefs. Evolutionary theory places an emphasis on biology for an explanation of sex differences. Males and females will differ in their commitment beliefs and jealous responses based on their respective reproductive motives (paternity certainty vs. securing resources). Rational theories place an emphasis on logical influences in determining males and females’ commitment beliefs and jealousy responses. According to this view, differences between males and females are based on logical beliefs related to jealousy and commitment, irrespective of biological sex.

Researchers identify two types of jealousy (i.e., sexual and emotional) and two types of commitment (i.e., sexual exclusivity and relational duration). The

type of jealousy experienced may be a rational or emotional response to different commitment beliefs.

According to evolutionary theory, males should experience more concern over sexual exclusivity. Evidence suggesting that a romantic partner is not sexually exclusive should promote feelings of sexual jealousy. According to evolutionary theory, females should experience more concern over relational duration. Evidence suggesting that a romantic partner does not value a long-term relationship should promote feelings of emotional jealousy.

The current study focused on the relationship between these different types of jealousy (sexual vs. emotional) and different types of commitment (sexual exclusivity vs. relational duration). The differences in these factors among males and females were explored. A male’s jealousy should be motivated by concerns over sexual infidelity causing males to have higher levels of sexual jealousy. A female’s jealousy should be motivated by concerns over relational duration causing females to have higher levels of emotional jealousy. Rational perspectives suggest that concerns over sexual exclusivity should promote feelings of sexual jealousy irrespective of biological sex. Similarly, beliefs that the duration of the relationship is in jeopardy should promote a rational response of emotional jealousy for both men and women. The hypotheses seek to understand the nature of jealous responses related to biological sex and commitment beliefs.

Method

Participants

A total of 177 females and 40 males were recruited through psychology classes at the University of North Florida. Of the 230 participants, 217 completed all of the required information in the study. Thirteen participants completed only part of the required information. Because these participants failed to complete some questionnaires, the missing data was excluded from some subsequent analyses. All participants were given credit in their psychology classes for participation. The majority of the participants were 19 to 24 years old (83%). The rest of the participants were 25 to 30 years old (11%) or 31 years or older (7%). All participants were treated in accordance with APA ethical guidelines.

Procedure

The experiment was presented as a web-based survey completed in a computer lab with 20 computers. Each computer displayed the web page containing the survey opened on the screen when the participants arrived. The experimenter gave the participants an informed consent as they entered the computer lab. The experimenter instructed the participants to read and sign the informed consent if they agreed to participate. Once all of the participants arrived, the experimenter led the participants through a practice survey. Although many students may have taken web-based surveys before, the practice survey ensured that all participants had experience in completing web-based surveys. The practice survey included examples of each type of input form used in the survey.

Once all participants were comfortable with the format of a web-based survey, they were instructed on the format of the survey questions. The first part of the survey required the participant to answer each question based on how they experience relationships in general. The second part of the survey required the participant to think of a specific relationship. If the participant was currently in a relationship, he or she was instructed to record the name of his or her current partner on the survey by typing the name in a defined text area. If the participant was thinking of a past relationship, the survey instructed her or him to type in the name of his or her past partner and to recall how he or she behaved and felt before the relationship ended. If the participant had never been involved in a romantic relationship, the survey instructed her or him to type in the word "ideal" and to imagine what an ideal relationship would be like. Either the names the participants entered or the word "ideal" were electronically inserted (JavaScript Source) into every question to ensure that the participant answered each question according to the same specific or ideal relationship.

Once participants were finished, the webpage displayed a screen thanking them for participating. Participants were then able to collect their extra credit cards from the experimenter. The experimenter allowed the participants to read the debriefing, telling them that they may be feeling some strong emotions following the experiment, but that their answers to the survey are not an indicator of problems in their relationship. Brochures from the Counseling Center were available if the participants wanted further assistance.

Materials

Commitment measures

Surveys of commitment were separated into measures of sexual exclusivity and measures of relational duration. One measure of sexual exclusivity was the Sexual Exclusivity Attitude Scale (SEAS; Blasband & Peplau, 1985). The SEAS was a measure of general sexual exclusivity attitudes and contained 4 questions, such as “Sexual fidelity is essential to a long-lasting relationship.” The scale was scored on a 1-to-4 scale, where 1 was *strongly disagree* and 4 was *strongly agree*. The SEAS has acceptable reliability (Cronbach’s $\alpha = .66$).

Another general measure of sexual exclusivity used in the survey was the beliefs on exclusivity section of the Survey of Interpersonal Reactions (SIR-BE; as cited in White & Mullen, 1989). The measure included 5 questions, such as “If two people truly love each other, they will feel no need for other relationships.” The SIR was measured on a 1-to-5 scale, where 1 was *very characteristic of me* and 5 was *very uncharacteristic of me* (see Appendix A). The SIR-BE has moderate to high reliability (Cronbach’s $\alpha = .88$).

The third measure of sexual exclusivity was the feelings and behaviors section of the Survey of Interpersonal Reactions (SIR-FB; as cited in White & Mullen, 1989). While the other two surveys of sexual exclusivity measure general beliefs, the feelings and behaviors section of the SIR was a measure of specific relationship beliefs. One of the five questions included in the survey was “X can love someone else and still love me,” where X signifies the specific partner’s name. This measure was scored on a 1-to-5

scale, where 1 was *very characteristic of me* and 5 was *very uncharacteristic of me* (see Appendix B). The SIR-FB has moderate to high reliability (Cronbach’s $\alpha = .88$).

Measures of relational duration were also included in the survey. The Future Time Orientation of Romantic Relationships (FTORR; Oner, 2000) measured general ideas about relational duration. The FTORR included 11 questions, such as “I prefer to enjoy the present time without considering the future of my relationships with the opposite sex.” The participants answered each question using a 1-to-4 scale, where 1 is *not true of me at all* and 4 is *very true of me*. The FTORR has high reliability (Cronbach’s $\alpha = .89$).

The survey included two questions to determine the participant’s commitment to the relationship and the participant’s belief about his or her partner’s commitment to the relationship, such as “To what degree do you feel committed to maintaining your relationship” (Wieselquist, Rusbult, Foster, & Agnew, 1999). The levels of specific relational duration beliefs about the relationship were measured on a 0-to-5 scale with 0 being *not very committed* and 5 being *completely committed*. The reported test-retest reliability for both questions is acceptable ($r_{tt} = .82$).

Personal Commitment questions were included from the Commitment to Marriage scale (COM; Adams & Jones, 1997). The Personal Commitment questions were changed in the current experiment from being related to marital commitment to measuring commitment in other types of relationships. The questions measured relational duration of a specific relationship, such as “I want to grow old with X,” where X signifies a

specific partner's name. Participants answered each question using a 1-to-4 scale, where 1 was *strongly disagree* and 4 was *strongly agree*. The internal consistency of the COM is high (Cronbach's $\alpha = .91$).

Jealousy Measures

Measures of jealousy were separated into two categories, sexual jealousy and emotional jealousy. Questions from the Self-Report Jealousy Scale were included as measures of general sexual jealousy (SRJS; as cited in White & Mullen, 1989). The SRJS included 6 statements, such as "You find your romantic partner having an affair." The questions were answered on a 1-to-9 scale, where 1 was *not very jealous*, 5 was *somewhat jealous*, and 9 was *extremely jealous* (see Appendix C). The internal consistency is high (Cronbach's $\alpha = .90$).

Sexual possessiveness questions from the Interpersonal Relationship Scale were included as a measure of jealousy in a specific relationship (IRS-SP; as cited in White & Mullen, 1989). This scale was comprised of three questions related to sexual jealousy, such as "It would bother me if X frequently had satisfying sexual relations with someone else." The participants used a 1-to-4-point scale with the points labeled *strongly agree*, *slightly agree*, *slightly disagree*, and *strongly disagree*, respectively (see Appendix D). The IRS-SP has high test-retest reliability ($r_{tt} = .86$).

Participants also completed questions from the Interpersonal Jealousy Scale (IJS; as cited in White & Mullen, 1989). The questions were intended to measure beliefs about emotional jealousy. The scale consisted of 27 questions, such as "If my romantic

partner admired someone of the opposite sex, I would feel irritated." The questions were scored on a 1-to-9 scale, where 1 was *absolutely false*, 5 was *neither true nor false*, and 9 was *absolutely true* (see Appendix E). The IJS has high internal consistency (Cronbach's $\alpha = .92$).

Buss et al.'s (1992) two forced choice questions asked participants to choose which of two scenarios, such as "Imagining your partner forming a deep emotional attachment to that person" or "Imagining your partner enjoying passionate sexual intercourse with that other person," was more distressing. The two forced choice questions regarding sexual and emotional jealousy were separated within the second part of the survey. The participants answered the questions related to a specific relationship.

Participants also completed the Relationship Jealousy Scale (RJS; White & Mullen, 1989). The scale asked six multiple-choice questions, such as "How often do you get jealous of your partner's relationships with those of the opposite sex?" The questions were a general measure of jealousy, neither emotional nor sexual. The RJS has acceptable internal consistency (Cronbach's $\alpha \approx .80$).

Other Measures

To evaluate the effects of jealousy and commitment on a person's feelings of self-worth, the participants completed Rosenberg's (1965) Self-Esteem Scale (RSES). This scale included ten questions, such as "I take a positive attitude toward myself." The questions were scored on a 1-to-4 scale where 1 was *strongly agree* and 4 was *strongly disagree*. The RSES has

acceptable internal consistency (Cronbach's $\alpha = .83$).

Participants completed a measure of trust after completing the jealousy and commitment questions. One measure included three trust questions from the Interpersonal Relationship Scale (IRS-T; as cited in White & Mullen, 1989). The questions measured trust regarding a specific relationship, including "I have confidence that X is not cheating behind my back," where X signifies a specific romantic partner's name. Participants answered the questions on a 1-to-4 scale, where 1 was *very false* and 4 was *very true* (see Appendix F). The IRS-T has acceptable test-retest reliability ($r_{tt} = .86$).

Participants received the questions in one of four orders. The commitment and jealousy measures contained general and specific questions. In all four forms, the general questions preceded the specific questions. Half of the participants received jealousy questions first, and the other half received commitment questions first.

Results

In this study, participants completed the same survey online. The study was, therefore, a correlational design. The first step in the analysis evaluated the reliability and validity of the measures. All surveys that purported to measure the same construct should be related to each other. The second step evaluated sex differences in jealousy and commitment in a replication of Buss et al.'s (1992) experiment. After examining sex differences, hypotheses about jealousy and commitment beliefs were tested.

Reliability and Validity of Measures

Before testing hypotheses, the reliability and validity of the measures were tested. Although all of the surveys used had reported high reliability, the reliability was evaluated with the current sample to ensure consistency of interpretation. The Sexual Exclusivity Attitude Scale (SEAS; Blasband & Peplau, 1985) has acceptable internal consistency (Cronbach's $\alpha = .66$). The Survey of Interpersonal Reactions (SIR-BE; as cited in White & Mullen, 1989) has acceptable internal consistency (Cronbach's $\alpha = .66$). The Survey of Interpersonal Reactions (SIR-FB; as cited in White & Mullen, 1989) has acceptable internal consistency (Cronbach's $\alpha = .62$). The Future Time Orientation of Romantic Relationships (FTORR; Oner, 2000) has moderate to high internal consistency (Cronbach's $\alpha = .76$). The Commitment to Marriage scale (COM; Adams & Jones, 1997) has high internal consistency (Cronbach's $\alpha = .90$). The Self-Report Jealousy Scale (SRJS; as cited in White & Mullen, 1989) has a moderate to high internal consistency (Cronbach's $\alpha = .78$). The sexual possessiveness questions from the Interpersonal Relationship Scale (IRS-SP; as cited in White & Mullen, 1989) have an acceptable internal consistency (Cronbach's $\alpha = .64$). The Interpersonal Jealousy Scale (IJS; as cited in White & Mullen, 1989) has a moderate to high internal consistency (Cronbach's $\alpha = .88$). The two forced choice questions (Buss et al., 1992) have an acceptable internal consistency (Cronbach's $\alpha = .63$). The Relationship Jealousy Scale (RJS; White & Mullen, 1989) has a moderate to high internal consistency (Cronbach's $\alpha = .82$). The trust questions from the Interpersonal Relationship Scale (IRS-T; as cited in White &

Mullen, 1989) have a moderate to high internal consistency (Cronbach's $\alpha = .84$). All of the scales have acceptable reliability. A sum of each participant's responses to the questions for each scale was calculated and used in further analyses.

The surveys for jealousy and commitment were tested to ensure the scales measured the same construct. Jealousy measures should be related to each other, and commitment measures should be related to each other. The three measures of sexual exclusivity, the SEAS, the SIR-BE, and the SIR-FB, were tested for construct validity. The SIR-BE and the SIR-FB were significantly related [$r(210) = .20, p = .004$] and served as measures of sexual exclusivity in subsequent analyses. The SEAS was not related to either the SIR-BE [$r(210) = .05, p = .50$] or the SIR-FB [$r(197) = .006, p = .94$]. The SEAS was related, however, to the FTORR [$r(210) = .24, p = .001$]. Because the SEAS was not related to other measures of sexual exclusivity, it was not used in subsequent analyses.

The two measures of relational duration, the FTORR and the COM, were tested to ensure they were related. The FTORR and the COM were significantly related to each other, $r(197) = .47, p < .0001$. Both were used as measures of relational duration.

The two measures of sexual jealousy, the SRJS and the IRS-SP were significantly related to each other [$r(197) = .32, p < .0001$] and both were used as measures of sexual jealousy. The IJS was originally believed to be a measure of emotional jealousy. The IJS was related, however, to the measures of sexual jealousy [SRJS, $r(210) = .68, p < .0001$; IRS-SP, $r(197) = .40, p < .0001$] and sexual exclusivity [SIR-BE, $r(210)$

$= .24, p < .0001$; SIR-FB, $r(197) = .30, p < .0001$]. The validity of the IJS as an independent measure of emotional jealousy was not supported, and the IJS was not used in subsequent analyses.

All scales that should be related to each other were tested for convergent validity. Most scales tested produced adequate correlations with other theoretically related scales. The scales demonstrating questionable convergent validity (the IJS and the SEAS) were excluded from further analyses.

Sex Differences

After ensuring the validity of the measures, sex differences in beliefs about jealousy and commitment were explored to replicate Buss et al.'s (1992) work. Buss et al. found that males tended to experience a higher degree of sexual jealousy than did females, and females tended to experience a higher degree of emotional jealousy than did males. As expected, there were significant sex differences on Buss et al.'s forced choice questions. Females were more likely to choose emotional infidelity as more distressing than were males on both the first [$\chi^2(1, N=217) = 5.49, p = .02$] and the second [$\chi^2(1, N=217) = 14.90, p < .0001$] forced choice questions. The difference between jealous responses in females and males yielded small to moderate effect-size estimates ($d = .16$ and $.26$, for the first and second forced-choice questions, respectively). The two forced choice questions were related to each other, $r(214) = .48, p < .0001$. A new combined measure was computed for further analyses, assigning each participant a new number that represented the frequency that the participant chose sexual infidelity over

emotional infidelity on the two forced choice questions.

Contrary to evolutionary theory, females and males did not differ in their responses to questions about sexual jealousy on the IRS-SP, $t(215) = 1.46$, $p = .15$, or on the SRJS, $t(197) = .56$, $p = .57$. Males and females should have differed in their beliefs about sexual exclusivity and responses to sexual jealousy, with males believing sexual exclusivity was more important to a relationship than females. Instead, females either had stronger beliefs than males or did not differ from males in their beliefs. These findings do not support traditional evolutionary theories about romantic jealousy and commitment.

Males and females did not differ in their responses on the SIR-BE, $t(197) = 1.66$, $p = .098$. Both males and females believed sexual exclusivity was important to a relationship. Females had higher scores than males on the SIR-FB, $t(215) = 4.95$, $p < .0001$. Females were more likely to endorse statements indicating a strong commitment belief that romantic relationships should be sexually exclusive.

Sex differences were observed in beliefs about relational duration. Females, more so than males, believed relational duration was important to a relationship, FTORR, $t(197) = 2.03$, $p = .04$. Males and females did not differ in their responses on the COM, indicating that males and females both believe that relationships should be long-term, $t(215) = 1.30$, $p = .097$.

In summary, Buss et al.'s (1992) study with the forced choice questions was replicated. Females chose emotional infidelity as more distressing than did males. When sex differences were examined using other measures of

jealousy, however, these same sex differences in jealousy responses were not found. Females and males differed in their commitment beliefs, though not in the way evolution theory would have predicted. Although both females and males agreed that sexual exclusivity was important to a relationship, females scored higher than males in beliefs about sexual exclusivity. Sex differences were also shown on the measures of relational duration. Females, more so than males, agreed that long-term relationships were more desirable than short-term relationships, which is consistent with evolution theory.

Jealousy and Commitment Beliefs

The final step in the analyses tested hypotheses concerning the relationship between the effect of commitment beliefs on jealousy responses. These analyses observed relationships between jealousy and commitment that were not dependent upon sex. It was hypothesized that beliefs about sexual infidelity would be related to sexual exclusivity and beliefs about emotional infidelity would be related to relational duration. It was also hypothesized that commitment beliefs and jealousy would be related to trust. Analyses controlled for the potential influence of self-esteem and socially desirable responses.

Correlational tests were used to test whether beliefs about commitment predicted jealousy responses. Participants who had strong beliefs in commitment based on sexual exclusivity (measured by the SIR-BE) were more distressed by sexual infidelity (measured by the SRJS), $r(210) = .24$, $p < .0001$ (see Figure 1). This was consistent with the hypothesis that people who value sexually exclusive relationships are more

distressed by sexual infidelity. Participants who had experienced infidelity in past relationships were likely to demonstrate a correspondence between a desire for sexually exclusive relationships, a distressed response to sexual infidelity [$r(107) = .34, p < .0001$].

Participants who had strong beliefs concerning relational duration (FTORR) were more likely to be distressed by emotional infidelity than by sexual infidelity over the two forced-choice questions on this topic, $r(197) = .22, p = .002$ (see Figure 2). These results are consistent with the hypotheses that people who believed strongly in long-term relationships would be more distressed by emotional infidelity. This relationship was dependent upon whether a participant had experienced infidelity in a current or previous relationship. Participants who had experienced infidelity showed no difference between their beliefs about long-term relationships and whether sexual or emotional infidelity was more distressing, $r(88) = .16, p = .09$. Participants who had experienced infidelity and believed that long-term relationships were important were more likely to say that emotional infidelity was more distressing than sexual infidelity, $r(88) = .31, p = .003$.

Although there were strong relationships between commitment beliefs and feelings of jealousy, it was possible the relationships were driven by biological sex. Females could have been high in relational duration and emotional jealousy, and males could have been high in sexual exclusivity and sexual jealousy. Partial correlations controlling for sex determined if commitment beliefs and jealous feelings could be accounted for by sex. The relationship

between sexual exclusivity (measured by the SIR-BE) and sexual jealousy (measured by the SRJS) was not accounted for by sex, $r_p(197) = .28, p < .0001$. The influence sexual exclusivity beliefs had on sexual jealousy was not explained by biological sex. The relationship between relational duration (measured by the FTORR) and emotional jealousy (measured by Buss et al.'s forced choice questions) was not accounted for by sex, $r_p(197) = .19, p = .007$. The influence relational duration beliefs had on emotional jealousy, thus, was not explained by biological sex.

Not only were participants' beliefs about jealousy dependent upon their beliefs about commitment, participants' levels of trust influenced commitment beliefs. Participants who trusted their partners were also more likely to value long-term relationships (COM), $r(214) = .31, p < .0001$. The relationship between trust and relational duration beliefs (FTORR) was smaller, $r(197) = .20, p = .02$. The relationship between trust and FTORR was dependent upon whether or not a person had experienced infidelity in a current or previous relationship. Participants who have not experienced infidelity in past relationships and who trusted their romantic partners were more likely to value long-term relationships [$r(88) = .36, p = .001$]. No relationship was observed between FTORR and trust in participants who had experienced infidelity, $r(104) = .05, p = .60$. The relationship between trust and commitment as measured by the COM also differed based on whether or not someone had experienced infidelity. Participants who had experienced infidelity and who trusted their partners valued long-term relationships, $r(118) = .20, p = .03$ (see Figure 3). This

relationship was stronger for participants who had never experienced infidelity in a relationship, $r(194) = .49, p < .0001$. Participants who trust their partners show a strong tendency to believe in long-term relationships. This supports the hypothesis that trust and commitment influence each other in a relationship. The influence of trust on commitment, however, is moderated by experience with infidelity.

Participants' beliefs about trust were also related to their beliefs about jealousy. Participants who reported less trust in their romantic partners were more likely to be highly sexually jealous (on the SRJS), $r(197) = -.18, p = .01$. This relationship was dependent upon whether participants had previously experienced infidelity. Participants who have past experience with infidelity in close romantic relationships and who are less trusting of their partners experience more sexual jealousy, $r(107) = -.23, p = .02$. No statistical relationship existed between trust and sexual jealousy in those participants without any experience with infidelity. Those participants who had low trust for their partners also reported high levels of jealousy on the RJS, a measure of general jealousy responses, $r(214) = -.37, p < .0001$ (see Figure 4).

In summary, the analyses suggest a strong relationship between sexual jealousy and sexual exclusivity as well as between emotional jealousy and relational duration. Participants who valued sexually exclusive relationships were more likely to be distressed by sexual infidelity. Participants who valued long-term relationships were more likely to be distressed by emotional infidelity. The relationships between commitment and jealousy were not influenced by biological sex. This

supports the hypotheses that commitment beliefs influence jealousy. Experience also influenced participants' jealousy responses. Participants differed on their beliefs based on previous experience with infidelity and whether they were thinking of a current or past relationship.

Beliefs about relational duration and jealousy were related to trust. Participants who trusted their partners had a tendency to be less jealous than partners who did not trust their partners. This supports the hypothesis that trust influences feelings of jealousy. Participants who trusted their partners were also highly committed to their partners and valued long-term relationships. This supports the hypothesis that feelings of trust influence commitment beliefs.

Discussion

This study investigated the effect commitment beliefs have on feelings of jealousy. Previous research had shown sex differences in jealousy, with males more distressed by sexual infidelity and females more distressed by emotional infidelity (Buss et al., 1992). When using the forced choice questions created by Buss et al. (1992), males and females differed in which type of jealousy would distress them more. Males tended to be more upset than females by sexual infidelity, and females tended to be more upset than males by emotional infidelity. These findings supported the evolutionary basis of jealousy.

The evolutionary theory was not supported, however, when measures of sexual jealousy other than the forced choice questions were used. According to evolutionary theory, males should have been distressed by sexual infidelity

more than females because males desire to protect their paternity claim on the child. Females and males did not differ in their beliefs about sexual jealousy using measures (i.e., the IRS-SP and the SRJS) other than the forced choice questions. According to evolutionary theory, males should value sexual exclusivity more so than do females. Measures of sexual exclusivity used in the current study showed that females valued sexual exclusivity in relationships more so than males did.

Rational explanations of commitment were more reliable predictors of jealous feelings. Beliefs about commitment influenced feelings of jealousy, independent of sex. Consistent with the hypothesis, people who valued sexually exclusive relationships were more distressed by sexual infidelity. In a sexually exclusive relationship, partners limit all sexual relationships to each other. If both partners have agreed to be exclusive, then any doubt about fidelity threatens the relationship and leads partners to experience sexual jealousy. Also consistent with the hypothesis, people who valued long-term relationships were more distressed by emotional infidelity. In a long-term relationship, partners have decided to continue in the relationship for a significant amount of time. During this time, both partners become more dependent on each other (Rempel et al., 1985; Wieselquist et al., 1999). As this dependency grows, people will be more distressed by thoughts of their partner falling in love with someone else and ending the relationship. Doubt over a partner's desire for a long-term relationship caused people to experience emotional jealousy.

While some sex differences in jealous feelings were suggested by the

current study, commitment beliefs more accurately predicted whether a person would be more distressed by sexual or emotional infidelity. The effects of commitment beliefs remained after controlling for a person's biological sex. Although evolution theory may have an effect on behavior, a person's commitment beliefs seemed to have the greatest effect on jealous feelings. The results of the current study did not discount the effects of biological sex but placed a greater emphasis on commitment beliefs in determining whether a person would be more distressed by sexual or emotional infidelity.

In the current study, participants who trusted their partners were also more likely to value long-term relationships. These results support the interdependence theory (Wieselquist et al., 1999). In a long-term relationship, partners become more dependent on each other as they share more experiences and resources. This dependence increases partners' commitment to each other. The more a person sees his or her partner engaging in pro-relationship behaviors, the more the person will trust that the partner is committed to improving and maintaining the relationship. As this trust is built in the relationship, partners will be more likely to value a long-term relationship. Conversely, people who did not trust their partners were more likely to be jealous. This also helps support interdependence theory. Trust and commitment are dependent upon a person's observation of pro-relationship behavior (Wieselquist et al., 1999). Not trusting implies that a person is not observing pro-relationship behaviors from his or her partner. Perhaps the partner is making more self-interested

choices that damage the relationship and, subsequently, lowers a person's trust in his or her romantic partner.

Previous experience with infidelity seemed to have an affect on some of the relationships between commitment, jealousy, and trust. Participants who had previous experience with infidelity and who were less trusting of their partners experienced more sexual jealousy than did participants with no previous experience with infidelity. If a person has experience with infidelity in a past relationship, he or she may exhibit more suspicious behavior and assume infidelity will occur again. Expecting a romantic partner to be unfaithful will cause people to be less trusting of their partners, perhaps even suspecting innocent behavior as threatening to the relationship (Bringle, 1995).

Limitations and Further Directions

Although commitment beliefs were found to influence jealous reactions independent of sex, the ratio of male to female participants was relatively low. The number of male participants was about 4 times less than the number of female participants. The female participants may have had a larger impact on the results than did the male participants. If more males were present in the study, sex differences might have been shown on the measures of sexual exclusivity and sexual jealousy.

Further research is needed to understand the effects of relationship status on commitment beliefs and jealousy responses. The results of this study were based predominately on people in dating relationships. Married couples, however, view commitment differently than dating couples (Adams & Jones, 1997). People who are married

tend to experience higher levels of commitment to the relationship and to the partner than do people in casual dating relationships. To better understand commitment beliefs and jealousy in all types of relationships, married and dating couples should be compared in further studies.

Other relationship beliefs can be further investigated. The double-shot hypothesis (DeSteno & Salovey, 1996), for example, has proven useful in explaining jealous responses. Future research on this topic could have participants rate how much their partner having sex with another person implies they are in love with the other person. Participants could rate how much their partner being in love with another person implies they are having sex with the other person. People who highly rate that sex implies love should be more distressed by sexual infidelity than emotional infidelity. People who highly rate that love implies sex should be more distressed by emotional infidelity than sexual infidelity.

Summary

The current study demonstrated that commitment beliefs influence jealousy responses, irrespective of biological sex. People who value sexually exclusive relationships are more distressed by sexual infidelity, and people who value long-term relationships are more distressed by emotional infidelity. In relationships where jealous feelings occur often, couples may not be happy. Several counselors offer different treatments for jealousy in relationships (e.g., Pines, 1992; Verhulst, 1985; Francis, 1977). Since this study demonstrated that commitment beliefs influence jealousy,

it might be beneficial for counselors and couples to evaluate their commitment beliefs before trying to treat the jealous feelings. By better understanding the commitment beliefs of each partner, couples might be better able to understand and maybe even lessen destructive jealous feelings. Counselors should not assume that males and females will always experience different types of jealous feelings based on biological sex. Commitment beliefs may be a better indicator of jealous feelings.

Appendix A

Beliefs on Exclusivity Questions from the Survey of Interpersonal Reactions (SIR-BE; as cited in White & Mullen, 1989)

Please use the following scale to indicate how characteristic or uncharacteristic each statement is of you.

1 = Very Uncharacteristic of Me 3 = Neutral 5 = Very Characteristic of Me

1. If two people truly love each other, they will feel no need for other relationships.
2. Becoming interested in another person does not mean you have grown tired of or dissatisfied with your current relationship.
3. My romantic partner's wanting to become close to someone else doesn't mean s/he is less interested in me.
4. If my romantic partner really loved me, s/he wouldn't want to be with anyone else.
5. If my romantic partner wants to go out with other people, s/he must not care for me anymore.

Appendix B

Feelings and Behaviors Questions from the Survey of Interpersonal Reactions (SIR-FB; as cited in White & Mullen, 1989)

Please use the following scale to indicate how characteristic or uncharacteristic each statement is of you.

1 = Very Uncharacteristic of Me 3 = Neutral 5 = Very Characteristic of Me

1. X can love someone else and still love me.
2. When X expresses interest in someone else, I feel uncomfortable.
3. If X becomes close to someone else, I feel happy for him/her.
4. I don't worry or become suspicious when someone of the opposite sex calls.
5. I don't become defensive when X starts showing interest in another wo/man.

Appendix C

Self-Report Jealousy Scale (SRJS; as cited in White & Mullen, 1989)

Please use the following scale to indicate how jealous you would feel.

1=Not very Jealous 3=Slightly Jealous
5=Somewhat Jealous 7=Very Jealous
9=Extremely Jealous

1. You find your romantic partner is having an affair.
2. Your romantic partner looks at another.
3. Your romantic partner spends increasingly more time with

others.

4. You are stood up, and then learn that your romantic partner was out with another person.
5. Your romantic partner expresses a desire to date others.
6. Another person is flirting with your romantic partner.
7. Your romantic partner spends increasingly more time in outside activities.

Appendix D

Sexual Possessiveness Questions from the Interpersonal Relationship Scale (IRS-SP; as cited in White & Mullen, 1989)

Please use the following scale to indicate how much you agree or disagree with the following statements.

1 = Strongly Disagree 2 = Disagree
3 = Agree 4 = Strongly Agree

1. It would bother me if X frequently had satisfying sexual relations with someone else.
2. I want X to enjoy sex only with me.
3. When X goes out with another wo/man, I become physically upset.

Appendix E

Interpersonal Jealousy Scale (IJS; as cited in White & Mullen, 1989)

Please use the following scale to indicate how true or untrue each statement is of you.

1 = Absolutely False 5 = Neither
True nor False 9 = Absolutely True

1. If my romantic partner were to see an old friend of the opposite sex and respond with a great deal of happiness, I would be annoyed.
2. If my romantic partner went out with same-sex friends, I would feel compelled to know what he/she did.
3. If my romantic partner admired someone of the opposite sex, I would feel irritated.
4. If my romantic partner were to help someone of the opposite sex with his/her homework, I would feel suspicious.
5. When my romantic partner likes one of my friends, I am pleased.
6. If my romantic partner were to go away for the weekend without me, my only concern would be with whether he/she had a good time.
7. If my romantic partner were helpful to someone of the opposite sex, I would feel jealous.
8. When my romantic partner talks of happy experiences of his/her past, I feel sad that I wasn't part of them.
9. If my romantic partner were to become displeased about the time I spend with others, I would be flattered.
10. If my romantic partner my romantic partner and I went to a party and I lost sight of him/her, I would become uncomfortable.
11. I want my romantic partner to remain good friends with the people he/she used to date.
12. If my romantic partner were to date others, I would feel unhappy.

13. If I noted that my romantic partner and a person of the opposite sex have something in common, I would become envious.
14. If my romantic partner were to become very close to someone of the opposite sex, I would feel very unhappy and/or angry.
15. I would like my romantic partner to be faithful to me.
16. I don't think it would bother me if my romantic partner flirted with someone of the opposite sex.
17. If someone of the opposite sex were to compliment my romantic partner, I would feel that the person was trying to take my romantic partner away from me.
18. I feel good when my romantic partner makes a new friend.
19. If my romantic partner were to spend the night comforting a friend of the opposite sex who had just had a tragic experience, my romantic partner's compassion would please me.
20. If someone of the opposite sex were to pay attention to my romantic partner, I would become possessive of him/her.
21. If my romantic partner were to become exuberant and hug someone of the opposite sex, it would make me feel good that he/she was expressing his/her feelings openly.
22. The thought of my romantic partner kissing someone else drives me up the wall.
23. If someone of the opposite sex lit up at the sight of my romantic partner, I would become uneasy.
24. I like to find fault with my romantic partner's old dates.
25. I feel possessive toward my romantic partner.
26. If I saw a picture of my romantic partner and an old date I would feel unhappy.
27. If my romantic partner were to accidentally call me by the wrong name, I would become furious.

Appendix F

Trust Questions from the Interpersonal Relationship Scale (IRS-T; as cited in White & Mullen, 1989)

Please use the following scale to indicate how true or untrue each statement is of you.

1 = Very False 2 = False 3 = True
4 = Very True

1. I have confidence that X is not cheating behind my back
2. When I am away from X for any length of time, I do not become suspicious of X's whereabouts.
3. I see X as a faithful person.

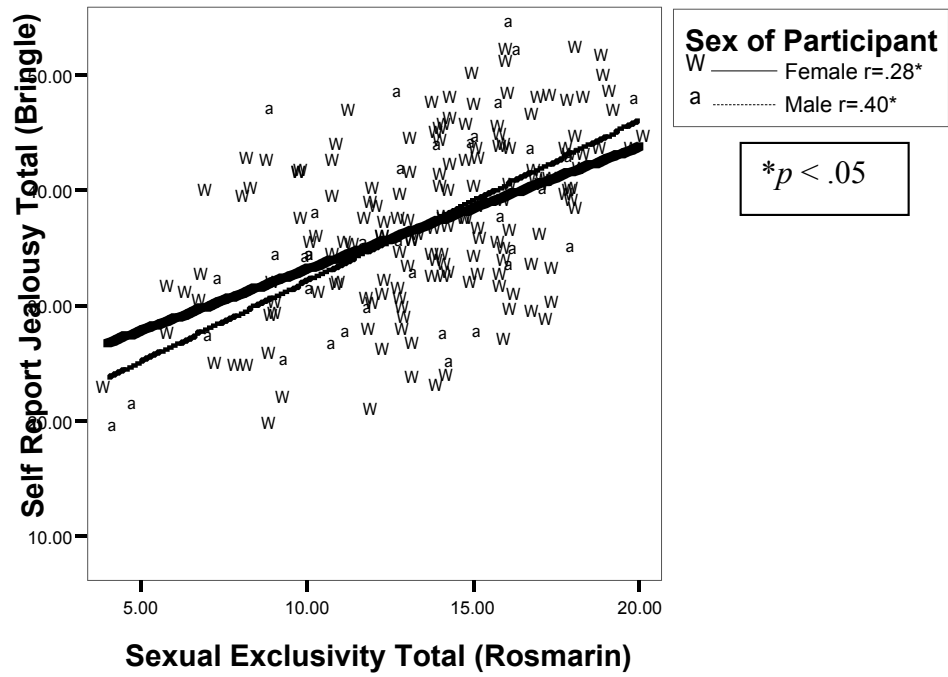


Figure 1. Influence of Sexual Exclusivity Beliefs on Feelings of Sexual Jealousy.

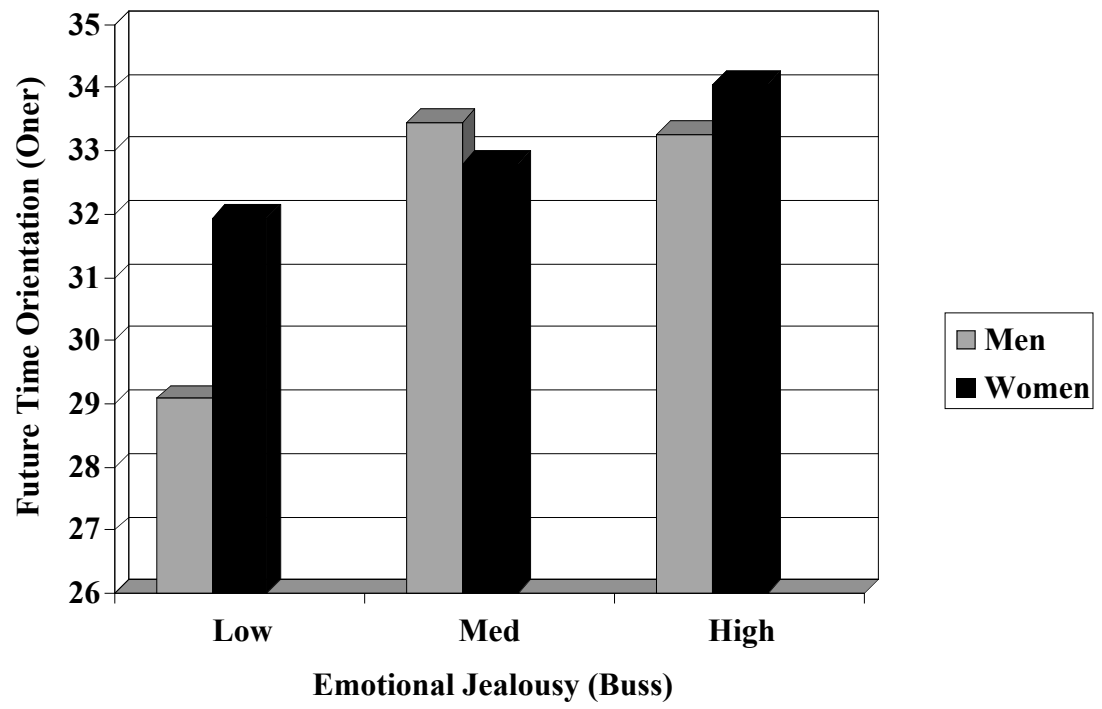


Figure 2. Relational Duration and Feelings of Emotional Jealousy.

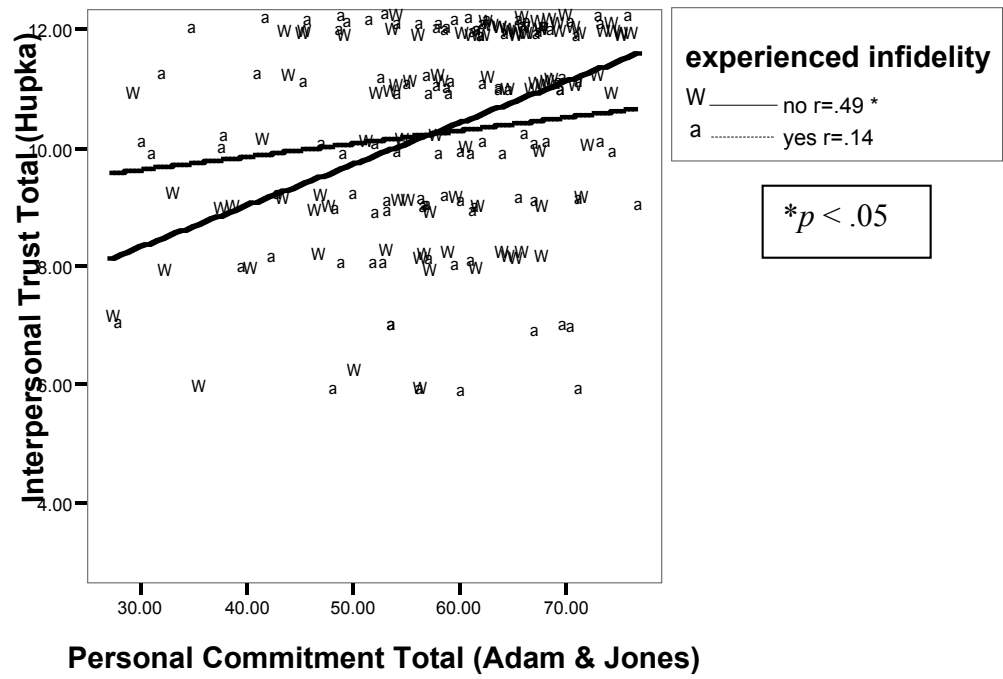


Figure 3. Influence of Experience on Personal Commitment to a Relationship (i.e., Relational Duration and Trust).

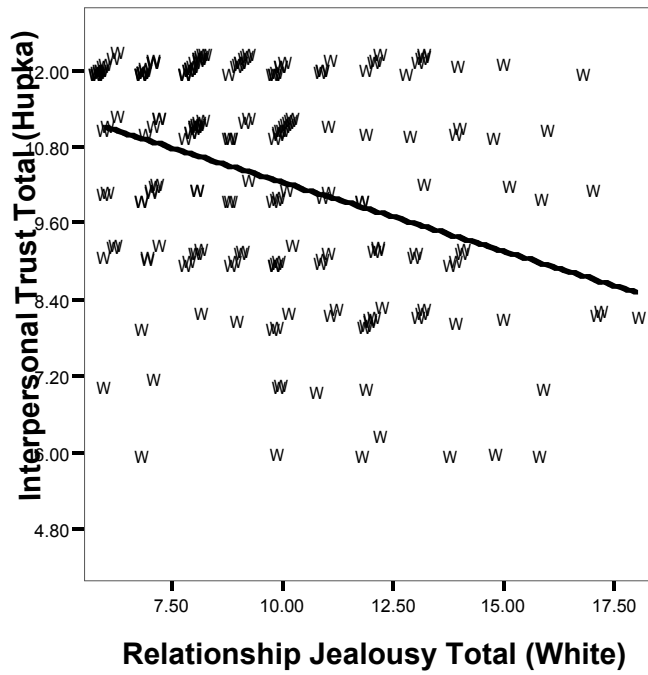


Figure 4. Romantic Jealousy (General) and Trust.

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