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Gender Differences In Memory for Sexual Jealousy

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Abstract

The researchers aimed to investigate gender differences in memory for the domain of jealousy. 160 LSU students participated in the study. The participants read a scenario dealing with sexual or emotional jealousy, and were asked to recall the material. Women recalled more information from the stories than did men, however no gender difference was found in recognition. Both sexes recalled and recognized more information from the sexual story. A measure of blame assignment found that overall most blame was assigned to the significant other, next to the main character, and the least amount of blame was assigned to the rival. Each sex assigned more blame to cheaters of the opposite sex. Women assigned more blame to rival in the emotional condition. Opinions for the future were also analyzed. Discussion of the findings are included.

Gender Differences in Memory for Sexual Jealousy

Sexual jealousy has been shown to be one of the leading causes of homicide and battery in romantic relationships (Daly & White, 1988). It has also been shown to be a powerful influence on aggression (Paul & Galloway, 1994). For example, criminologists in the United States have regularly found sexual jealousy to be a leading homicide motive (Daly, Wilson, & Weghorst, 1982). Sexual jealousy is also a motive for nonfatal wife beating (Daly et al., 1982). Therefore, research on sexual jealousy is relevant as it addresses important problems in our society.

On a conceptual level, there are several psychological theories that attempt to explain jealousy. The proposed research examined the degree to which variables that have been found to effect jealousy can be identified as influencing basic cognitive processes. Specifically, does memory, a fundamental phenomena in information processing, show effects of variables that influence the occurrence of jealousy?

Many forms of jealousy have been identified. These include concepts such as sibling jealousy, morbid jealousy, etc. This project was limited to investigating two specific forms of jealousy: namely sexual and emotional jealousy. Sexual jealousy can be defined as a perceived threat to a valued sexual relationship that motivates behavior aimed at countering that threat (Daly et al., 1982). The second form of jealousy of interest in the present study was romantic jealousy. Romantic jealousy is a common response to a perceived threat to a valued relationship; the threat is usually from person's other than the partner's family or friends (Pines & Friedman, 1998). Romantic jealousy, in its purest form, does not contain sexual infidelity; it primarily refers to jealousy over a

situation in which a partner has developed a strong emotional attachment for another person. Differences between these two types of jealousy appear to lie in the stimuli that trigger them. For instance, romantic jealousy is triggered by the perceived threat that a partner has developed a deep emotional attachment to another person, and sexual jealousy is triggered by the discovery of a partner's sexual infidelity. It is implicitly assumed that physiological response to jealousy does not differ between these two categories.

Most research on sexual jealousy focuses on gender differences. Gender differences exist in several aspects of sexual jealousy, such as type, triggers, rivals, etc. (Paul & Galloway, 1994). For example, Paul and Galloway (1994) state that men appear to exhibit more preventative jealousy than women. That is, men try to prevent contact between their partners and other men they perceive as threats. Women tend to exhibit reactive jealousy, in which they try to prevent contact between their partners and other women after an infidelity has taken place.

Buss, Larsen, Westen, & Semelroth (1992) contrasted sexual jealousy with emotional jealousy and they also found gender differences. Buss et al. asked college students which they would perceive as more distressing, a partner developing a deep emotional attachment to someone else or the partner engaging in passionate sexual intercourse with another person without the development of an emotional attachment. More women than men reported they would be more distressed by emotional infidelity, and more men than women indicated they would be more distressed by sexual infidelity. In another study using psychophysiological responding as the measure of emotional arousal, Buss et al. found the same results when participants imagined a sexual or

emotional jealous scene. Buss and Schmitt (1993) further elaborated upon the previous findings when they reported that men rated faithfulness as the single most valued characteristic for woman in a long-term relationship.

Other studies have shown that this gender difference found by Buss in the US was found across cultures (Buunk, Angleitner, Ouibaid, & Buss, 1996). In a similar study Buunk and Hupka (1987) found that erotic behavior of the partner, such as flirting and sexual involvement, evoked jealousy when examined cross-culturally. Across cultures more women than men reported they were more upset if their partner kissed someone else, and men reacted more negatively than women to the sexual fantasies of their partner about another person. These various findings were described as providing support for evolutionary theories about jealousy.

Paul and Galloway (1994) found gender differences in jealousy in the response directed toward the partner and the rival. They found that women reacted more aggressively in that women assigned more blame to a romantic rival than men. Men were more likely than women to end a relationship after sexual infidelity. These findings provided additional support for the suggestion that women are more distressed by emotional infidelity and men by sexual infidelity. In a related vein, several studies have found that women became more jealous when they thought their marital relationship had been damaged, and men were more jealous when they thought their self-esteem had been damaged (Buunk, 1984). The results suggested that each sex was more distressed when the values they believed were important became jeopardized.

On the other hand, some research has found no gender differences in reaction to sexual jealousy. Wiederman and Allgeier (1993) reported that men and women did not

differ in their ratings of probable upset in response to sexual infidelity. However Wiederman and Allgeier did find gender differences in “jealousy evoking situations.” These investigators found that men more than women reported they were more upset when they thought of their girlfriend going to a “pick up” bar without them. Wiederman and Allgeier also found that women rated a scenario involving emotional infidelity as more upsetting than men.

Several theories have been offered in an attempt to help explain the etiology of sexual jealousy. The two most popular are evolutionary theory and the social learning theory. It should be noted that evolutionary theory raised the question of gender differences in jealousy. Social learning theory has been offered as an alternative explanation.

The evolutionary theory holds that gender differences in sexuality are the result of natural selection (Buss et al., 1992). This view suggests that men and women possess psychological mechanisms that were differentially selected for each gender because they were adaptive during human evolution (Wiederman & Allgeier, 1993). Evolutionary theory centers on reproductive success as the mechanism underlying natural selection (Cartwright, 2000). Sexual jealousy in men is an adaptation for solving the problem of parental uncertainty (Buss & Schmit, 1993). Sexual infidelity by a man’s mate would compromise his paternity, commitments, and resources. For instance, if a man has two children and one of the children is not his own child, his reproductive success has been reduced by half. If behavior that increases parental certainty has a genetic component, it will be selected for via natural selection. Therefore men’s jealousy is hypothesized to be triggered by a partner’s sexual infidelity, which is a direct threat to a male’s reproductive

success (Buss, Larsen & Westen, 1996). Male sexual jealousy is viewed from this perspective as an attempt to guard the woman and deter male competitors. Therefore sexual jealousy in men is seen as a preventative measure (Daly et al., 1983).

Women, however, are not faced with having to solve the adaptive problem of parental uncertainty; therefore, a mate's sexual infidelity would not effect a woman's parental certainty. However, the development of an emotional attachment to a rival would potentially reduce the male's expenditure of resources, time, commitment, and parental investment on her and her children. The reduction of resources would impact negatively upon the woman's reproductive success. Therefore, jealousy in women would be triggered by a man's emotional involvement with another woman (Buss et al., 1996; Daly et al., 1982). According to Buss, potential resource loss, which reduces reproductive success, is why women are more distressed by emotional infidelity, and potential loss of reproductive success is why men are more distressed by sexual infidelity. Consistent with this view, Paul and Galloway (1994) found that women more than men are more responsive to their rivals, and that even a partner's mild flirtation, or conversation with another woman can evoke strong reactions of anger directed toward the rival.

In contrast, social learning theory asserts that men and women differ in the elicitation of jealousy because of differential socialization (Wiederman & Allgeier, 1993). That is, men and women are not reared alike and thus each learns to place value on different things. The theory suggests that gender differences are the result of the degree to which different dimensions of the self are salient in sexual activity (Wiederman et al., 1993). Sexual activity is seen as more salient to a male's self-concept and self-

esteem. For instance, men who engage in promiscuous sex with many partners are viewed by other males as heroes or positive role models, whereas women who engage in promiscuous sex are seen as tramps or morally loose persons. Anecdotally it seems that even women, regardless of how liberated they are, still condemn other women who engage in promiscuous sex as immoral people. Women have been taught by society that sexual activity in the absence of an emotional relationship is not something in which they should place much value. For women it would appear that a romantic relationship would be more salient with their self-concept, since they are taught to value intimacy in a relationship more than sexual activity (Wiederman & Allgeier, 1993). Women appear to be more comfortable with intense intimacy than men. In contrast, men appear to place less importance on emotional intimacy and greater emphasis on sexual activity. Social learning theory suggests that men and women are taught by society to place more value on the aspects of the relationships that are more salient to their self-concept.

Consistent with the social learning view, Wiederman and Allgeier (1993) found that in relationships men reported greater emphasis on sexual activity, and women on emotional sharing. Since each gender has been taught to place value on different aspects of relationships, it follows that they would also have differential concerns regarding its loss. Men would be expected to focus more on a sexual threat, and women more on an emotional threat because those are the features in relationships that they have been taught to value. Men are expected to place greater value on sexual activity and would be more concerned with a partner's sexual infidelity and/or loss of sexual access to their mate. On the other hand, since women place more value on an emotional relationship, they are more concerned with a partner's emotional infidelity (Wiederman & Allgeier, 1993). In

sum, the social learning theory asserts that gender differences in jealousy are the result of learned differential value placed on sexual activity versus emotional sharing.

Another popular theory holds that gender differences in sexual jealousy are due to the suggestion that gender is based strictly on social constructs (Hupka & Bank, 1996). The social construction theory holds that jealousy is determined by cultural and social forces, and gender differences in jealousy are influenced by social norms (Pines & Friedman, 1998). Men and women act in agreement with the concepts of masculinity and femininity prevalent in their culture. From this perspective, gender is a social construct that does not have meaning separate from society's input. Jealousy, and reactions to jealousy, are a result of a person's cultural constructs (Hupka et al., 1996). Hupka (1996) disagrees with Buss's finding that men are more distressed by sexual infidelity and women by emotional infidelity, and the evolutionary theory as an explanation for jealousy. Hupka et al found over 50% of men reported they disliked the thought of imagined emotional infidelity more than sexual infidelity. Hupka suggests that these data provide support for a social constructionist view of jealousy rather than an evolutionary one. According to Hupka, this finding supports the hypothesis that individuals learn gender roles. Hupka proposes that as equality between men and women progresses, gender roles will become more similar, as will the attributes possessed by each. Thus as society progresses toward gender equality gender differences in jealousy and other areas will begin to decrease.

There are other theories and hypotheses that try to explain the gender differences in sexual jealousy, with some research to support each. For example, DeSteno and Salovey (1996) proposed a double shot hypothesis for sexual jealousy. The double shot

hypothesis states that some individuals believe emotional and sexual infidelity are not independent events. Individuals may feel that if an emotional infidelity has occurred that a sexual infidelity will follow shortly. If a research participant believes this, then they will not see a difference between the two forms of jealousy. DeSteno and Salovey (1996) suggest that Buss's results may be due to the fact that participants believed that one form of infidelity implied the occurrence of the other. At this time no single theory can provide a complete explanation for the cause of sexual jealousy or the triggers that elicit it. The likelihood is that the cause of jealousy is the result of a number of variables and their interactions. It seems that at this time there is no one theoretical approach that satisfactorily can explain jealousy. Evolutionary theory did, however, provide the heuristics that developed this line of research. The proposed research will not attempt to discriminate between or among these theories.

The research on sexual jealousy has some serious limitations. Most of the data obtained are collected from self-reports and forced choice methodology (Harris, 2000; DeSteno & Salovey, 1996). In fact, gender differences are frequently absent when studies use continuous rating scales rather than forced choice questionnaires to show how distressed a participant would be over both types of infidelity (DeSteno & Salovey, 1996; Harris, 2000). It has been suggested that many problems complicate and confound self-reports. These included concerns such as participants trying to please the experimenter, or unwillingness to disclose personally relevant information. However, research on jealousy will continue to use indirect methods to test hypotheses because as of now there are no direct tests for jealousy. Ethical and practical issues limit the direct elicitation and study of jealousy.

Research on sexual jealousy has spread over a range of topics including what triggers jealousy, reactions, blame, and most commonly gender differences. However there has been no reported research in the domain of memory for jealous stimulus content. To partially address this deficiency the present study examined gender differences in the processing of information from the domain of jealousy. It has been suggested that men and women process sexual material differently (Geer, Lapour, & Jackson, 1993). For example, Geer et al. applied the information-processing model to cognitive factors in sexuality. When presented with sexual information, one must recognize the information as sexual, and then encode and enter it into memory. Geer and McGlone (1990) found gender differences in memory for erotic, romantic, and neutral stories. They found that males accurately identified more erotic sentences, and females accurately identified more romantic sentences from the story. Some possible explanations for this difference include attentional or response biases.

The information-processing model is viewed as important in understanding gender differences in sexuality. Kenrick, Sadalla, and Keefe (1998) asked the question do the notions of parental investment and sexual selection have implications for cognitive processes such as attention, encoding, categorization, and retrieval? They argue that cognitive and evolutionary theories would have much to gain by encouraging cross-fertilization between the disciplines. This is why one must look to the IPA when trying to assess gender differences in sexuality. The Information Processing Approach (IPA) suggests that attentional processes may be a possible explanation for gender differences (Geer et al., 1990). Symons (1987) suggested that men and women differ in their encoding of sexual information, however, there is no definite evidence to support

this (as cited in Geer et al., 1993). Research has shown that men and women process erotic stimuli differently (Geer et al., 1990). The IPA is important in that if males and females process sexual information differently, then their responses to sexual information or situations will be different. With this in view, the proposed research will evaluate if gender differences can be identified in memory for the domain of sexual jealousy. The finding of gender differences in the processing of sexual material and gender differences in sexual jealousy strongly suggests that this line of research yields interesting results.

Past research has established that there are gender differences in jealousy. However, much of the previous research on jealousy has focused on the importance of sexual and romantic jealousy to each gender, and suggesting explanations and theories for the cause of jealousy. The present project differs from past studies in that it examined the possibility that gender differences exist in memory for material from the domain of jealousy. That is, the present research looked at gender differences in memory for jealousy. To examine this possibility, participants read one of two scenarios that dealt with either sexual or emotional jealousy. In the scenarios a couple has experienced either an emotional or sexual infidelity, and the corresponding jealousy, which followed. Within both of these stories the gender of the cheating partner was also manipulated. The study yielded a 2 x 2 x 2 experimental design. The independent variables were participant gender, content of the scenarios, and gender of cheater. The principal dependent measures were memory tasks, namely free recall scores and recognition scores. Other dependent measures analyzed in this study were questionnaires assesses participant's opinions and blame ratings.

We proposed there would be significant gender differences in memory for jealousy. According to past research males are more disturbed by sexual infidelity, and females more disturbed by emotional infidelity (Buss et al., 1996). We proposed this gender difference would be represented in participant's recall and recognition scores. It was hypothesized that males would accurately remember more events from the story dealing with sexual jealousy and women would accurately remember more events from the story dealing with emotional jealousy. It was also hypothesized that each sex would recall more information from a story in which the cheater in story was of the opposite sex. That is, the researcher proposed a man would accurately recall more information in a story in which the woman was the cheater and the man the victim. On the other hand, women would accurately recall more information in a story in which the man was the cheater.

These predictions follow from some general observations from information processing research. It is suggested that a participant would pay more attention to a story to which they can relate personally. For example, a female would pay more attention to a story in which a woman experienced emotional jealousy than would a man. As noted, researchers have suggested that possible explanations for gender differences in sexuality are attentional and response biases (Geer et al., 1990). It has also been suggested that sexual material is not equally salient to both genders. In fact it has been suggested that sexual activity may be more salient to a male's self-concept, and emotional attachment more salient to a female's self concept (Wiederman et al., 1993). Therefore saliency may influence the variables that effect memory. If men and women attend to and encode the information differently, each focusing more on the information that is salient with their

self-concept, it is expected that they will recall the information differently as well. In the present study this simple mechanism was offered as the basis for the predictions.

The present study also examined errors in recall for the scenarios. An error was defined as a distortion of an event in the story, or an intrusion of information that was not presented in the story. Errors and intrusions will be divided into several subcategories: neutral, sexual infidelity/ jealousy, and emotional infidelity/ jealousy. If recall errors follow a pattern that reflects the previously identified gender differences, the relevance of the IPA to helping understand jealousy will be made clearer.

As an aside, participants were asked their opinions about the situation presented to them in the scenarios. Some studies have shown that blame plays a major role in response to jealousy. Paul and Galloway (1994) found women reacted more aggressively to a rival than did men. Therefore the researcher hypothesized that in both cases more women than men would put blame on the rival rather than the cheating partner. Anecdotally it seems that women tend to place more blame on the rival, "she shouldn't be trying to take my man." In contrast, men tend to place more blame on the partner; "you shouldn't have worn that sexy dress." These analyses were explanatory in nature and were added to evaluate the possible role of these variables in the processing of jealous material.

A pilot study was conducted to ensure that the scenarios were as clear and unambiguous as possible. The scenarios contained a story of a couple involved in a long-term relationship. A married relationship, although seen as more invested and sometimes important, was not used since the majority of participants were college students for whom marriage would not personally relevant. However, to ensure that participants realized the

seriousness of the relationship, the couples in the stories were described as having become engaged recently. Care was taken to see that the two scenarios were equated on length and on as many other details as possible.

Pilot Study

Method

Participants

Participants were male and female college undergraduates aged 18 or older attending Louisiana State University. The participants volunteered to participate in the study to receive extra credit for their psychology classes.

Materials

Participants read one of two stories dealing with either emotional or sexual jealousy. Participants were given a sheet of paper and instructed to do a free recall of the story to assess clarity. Participants were then asked to identify whether the scenario they read dealt with emotional or sexual content. Finally, participants were asked for suggestions to improve the scenarios. Scoring for recall was based on a predetermined scoring protocol of important memory units. The experimenter examined the recall protocols to insure that the participant's recall a substantial portion of the scenario. The scoring protocol was updated after examining the results of the pilot study.

Procedure

Upon arrival at the lab the experimenter described to the participant all the aspects of the study in which they were participating. After they indicated that they understood the role they would play in the study, the participants signed an informed consent form. After participants signed the consent form the experimenter began the study. The

experimenter gave the participants a copy of either the sexual or emotional scenario. After reading these scenarios, participants were asked to complete a free recall of the story. Participants were asked if they thought the story dealt with a sexual or emotional content. Participants were also asked if any elements of the story were ambiguous. Finally, participants were asked for suggestions to improve the stories. We now turn our attention to the principal study.

Principal Study

Method

Participants

One hundred and sixty undergraduate students attending Louisiana State University participated in the study. Participants were volunteering in order to receive extra credit for a psychology course. Random assignment was used to place participants in the different conditions of the experiment. In a demographic questionnaire participant's sexual orientation was assessed. The main analysis included only data generated from heterosexual participants. If an adequate number of homosexual participants had completed the study, then that data would have been analyzed separately. Unfortunately, few people from the homosexual population participated.

Materials

Participants read a scenario dealing with either emotional or sexual jealousy, and where the cheater was either a male or female. The scenarios were presented on a computer program called E-Prime. This program allowed participants to read each sentence in the scenario one at a time. After reading the scenario, participants completed a 15-minute filler task. Next participants were given a blank sheet of paper and asked to

recall the information in the scenario as accurately as possible. The recalled information was scored to obtain one of the study's dependant variables. Participants were given a demographic questionnaire (Appendix A). The questionnaire was used to obtain information about personal characteristics such as the participant's age, gender, sexual orientation, and personal relationship status. In this questionnaire the participants were asked to report their relationship intensity: married, single, casually dating, etc. Participants were then asked to give a blame measurement for the characters in the scenarios. Participants were told they would be using a 100-point percentage scale to rate which character(s) they believed were responsible for the problem that existed in the scenario (Appendix B). The participant was asked additional questions to obtain their opinions about the situation presented in the scenarios. Participants were asked to rate on a Likert scale the opinions about the couple's future, the commonality of the situation, and if the participant's thought the couple would be helped by therapy (Appendix C).

The stories were matched for length and content, except for manipulations. The narrator for each story was the victim, the person whose partner committed either a sexual or an emotional infidelity. The scenario containing the emotional infidelity did not contain sexual intercourse, or a physical relationship of any kind existing between the emotional cheater and the rival. The emotional scenario only described the close friendship that exists between the cheater and the rival. It did contain repeated comments about the emotional attachment/bond developing between the cheater and the rival. In contrast, the sexual scenario did not contain an emotional relationship between the cheating characters, just a single, casual, sexual encounter. The sexual scenario did not

contain explicit sexual material, rather it just stated a sexual act took place. The scenarios involved characters who are young college students.

Procedure

Female experimenters conducted the experimental sessions, and random assignment was used to assign participants to conditions. The experiment took roughly thirty minutes. Upon the participant's entrance into the lab, the experimenter gave a general description of the experiment. Participants who wished to participate in the study, were then asked to read and sign an informed consent form. Participants were informed they were participating in an experiment assessing non-professional opinions on situations facing clinical psychologists in private practice. Participants were instructed that they were going to read a scenario, and then be asked to recall the information they read. After reading the story, participants were given a neutral filler task. This task consisted of some basic math problems without the use of a calculator. This task provided a 10-minute distraction. Next participants were asked to recall the information they read in the scenarios as accurately as possible. After the recall, participants filled out a simple demographic questionnaire. Then participants were asked to rate their opinions on the situation presented in the scenario. They were also asked to assign a blame rating to the character or characters that were responsible for the problem presented in the scenario. Participants were instructed to assign blame to the characters using a 100-point percentage scale. They were instructed they could divide the points among all the characters or assign all the points to just one character. Finally, the participants were given a recognition task of possible sentences that appeared in the story. They were told to circle yes if the sentence appeared in the scenario and no if it did not.

Upon completing this task participants were debriefed and given one extra credit point for their participation.

The scenarios were divided into memory units using examples from Anderson and Pichert (1978). A memory unit consists of the main ideas of the information present in the story. The dependent measure, taken from Anderson and Pichert, was the proportion of accurate recall to the total possible memory units. Errors in recall were also scored, and divided into one of three categories: sexual, emotional, or neutral. Intrusions were also scored and divided into the appropriate categories. The scoring protocol was designed by the experimenter using the memory unit model. After reviewing the pilot data, the researchers decided to break the each scenario into forty-one memory units. The memory units were very similar, except for the variables manipulated by the experimenters. Basically the experimenters removed the doctor's dialogue from the story and broke the rest of the information into forty-one memory units. Researchers combined similar sentences into a single memory unit. Using these memory units, the experimenter's created four sets of scoring sheets for each condition. Two well-trained judges were used to score the recall. During the training process, the judges spent a month scoring mock recalls. Since it was not plausible to assume that participant's would be able to remember every word of every sentence, judges were instructed to give credit to the participant's if they recalled the main gist of the memory units.

Scoring procedures for this experiment went as follows. The two judges received photocopies of the participants' recall. This measure was taken to insure that the judges were blind to any personal information about the participant. The judges were usually given about twenty recalls at once, and these must be completed within a three-day time

period. Judges scored the recall individually. They were instructed to use the scoring sheets to check off each memory unit that was present in the participant's recall. They were also instructed to circle any errors or intrusions in red ink. After individually scoring the recall, the judges met and compared their scores. When there were discrepancies in the judge's decisions, a third judge served as the tiebreaker. The judges then gave each recall a total recall score and an error/intrusion score. The recognition task of this experiment was scored separately from the recall using a key made by the experimenter.

A 2 x 2 x 2 factorial design was used in this the study. The factors were gender of the participant, type of jealousy (emotional or sexual), and gender of the cheater. General linear models (SPSS), MANOVA and ANOVA were used to analyze the independent variables: gender of participant, story type, and gender of the cheater. The GLM was also used to analyze the dependent variable of proportion of accurate memory recall to total possible memory units, and total recognition scores. The blame rating, and opinion rating, were also analyzed to examine their relationship to the independent variables described above.

Results

Researchers first analyzed the data obtained from the recall and recognition tasks given to the participants. The analysis used a MANOVA with total recall and total recognition as the dependant variables. The independent variables were gender of the participant, content of the story, and the gender of the cheater in the story. The overall MANOVA found a significant main effect for gender, $F(1, 150) = 6.35, p < .002$ and a significant main effect for content, $F(1, 150) = 9.14, p < .001$. The main effect of gender

for recall was that overall women ($M=19.13$) had higher scores than men ($M=16.59$). The main effect of content for recall was that overall the sexual story yielded higher memory scores ($M=19.13$) than did the emotional story ($M=16.59$). There were no significant interaction effects found in this analysis. These findings justified follow-up univariate analyses of the two memory dependent variables of recall and recognition.

We considered first the ANOVA of the recall and recognition scores. The main effect for gender remaining significant, $F(1, 150)=11.22, p<.001$, for recall scenarios. However for recognition scores the gender effect was not significant $F(1, 150)=.217, p>.642$). Females performed significantly better than males on all recall tasks regardless of the content of the story. For a graphical depiction of the means for both genders see Figure 1.

We next consider the univariate analysis findings for the story content. There was significant content difference for both the dependent measures of recall, $F(1, 150)=10.97, p<.001$, and recognition $F(1, 150)=11.53, p<.001$. Participants recalled more information from stories that contained sexual content, $M=19.83$ and $SD=5.5$, than from stories that contained an emotional content, $M=16.58$ and $SD=4.0$. On the recognition tasks participants also performed better on sexual stories, $M=19.35$, than on stories dealing with emotional content, $M=18.48$. There were no significant interactions in the univariate analysis of the memory data. Therefore on the basis of these results, we rejected the hypothesis that males would recall more on a story with sexual content and that females would perform better on stories that dealt with an emotional content.

In turn we rejected the hypothesis that males would recall more from a story in which the gender of the cheater was varied. We also rejected the hypothesis that

there would be a triple interaction effect for the variables of gender, content, and gender of cheater.

An additional dependent variable examined in this study was blame. We investigated whether or not our independent variables influenced the assignment of blame to the three characters in the stories. Remember that participants were instructed to assign a numerical value for the three characters and make the values add up to 100%. We hypothesized, based on previous research by Paul and Galloway (1994), that females would place more blame on the rival, where as males would tend to place more blame on their partners.

The data were analyzed by a repeated measures ANOVA. The three independent variables were participant gender, content, and gender of cheater. The three dependant measures were the percentages of blame given to the storyteller, the cheater, and the rival. We found a significant main effect for character, and a character content interaction. The assumption of sphericity was violated so that in our analyses we used the Greenhouse-Geisser correction to adjust the degrees of freedom. For the main effect of character, we found a significant finding, $F(1.903, 285.44)=111.739, p<.001$. Using a Bonferroni adjustment for number of comparisons we found that each character significant differed from each other, $p<.001$. Collapsed across all conditions most blame was assigned to the cheater, $M=55.93$, next to the main character, $M=29.15$, and the least amount of blame was assigned to the other, $M=14.95$. We also found a significant character by content interaction, $F(1.903, 285.44)=52.13, p<.001$, that supported the further exploration of these data. A triple interaction effect was found between character,

gender, and gender of the cheater, $F(1,150)=4.49$, $p<.036$. To explore this interaction we conducted subsequent ANOVAs on each character.

The univariate ANOVA of the dependant variable of blame placed on the main character yielded no significant effects. The univariate analysis of blame placed on the cheater yielded a significant interaction effect between participant gender and content, $F(1, 150)=3.99$, $p<.05$. As inspection of Figure 2 shows, males did not differ in amount of blame assigned to the cheater as a function of story content. For females, however, it may be noted that more blame was placed in stories containing emotional content. In addition the univariate analysis of blame assigned to the cheater found a significant interaction effect for the independent variables of participant gender and gender of the cheater, $F(1, 150)=5.09$, $p<.05$. Not surprisingly, each sex assigned higher percentages of blame to the cheaters in the stories when the cheater was a member of the opposite sex (See Figure 3).

In the univariate analysis of blame assigned to rivals a significant interaction between gender of the participant and gender of the cheater in the story. As Figure 4 demonstrates, each participant placed more blame on rivals of the same gender and less blame on rivals of the opposite gender.

Another dependant measure used in this study consisted of the responses to an opinion questionnaire (See Appendix B). In this questionnaire participants were asked to give their opinions concerning the scenarios they read. Participants were asked to rate their opinions on these questions: how common did they think the situation was, what did they predict for the future of the couple, and rate if they think therapy will help the couple. Univariate ANOVAS of those variables were conducted. The independent

variables were participant gender, content, and gender of the cheater. There were no significant differences in opinions about commonality or therapy. However researchers did find a significant interaction for gender difference of participant gender by gender of the cheater in opinions concerning the prediction for the future of the couple, $F(1, 150)=3.93, p<.05$. When the gender the cheater was female, males predicted the couple would more likely to breakup, $M=1.72$ than did females, $M=2.65$. This effect was not observed by either sex when the gender of the cheater was male. Figure 5 contains a graphical representation of these data.

We also examined memory errors and intrusions in the recall data. No significant differences in errors and intrusions were identified in any of these data.

Discussion

The present study investigated gender differences in memory for jealousy. We hypothesized, based on extrapolations from evolutionary theory, that gender differences would exist in recall for sexual and emotional jealousy. That is, females would recall more information from a story containing emotional jealousy and males would recall more information from a story containing sexual jealousy. However of the data analyses found no significant gender difference existed between gender and the content of the story. In fact females significantly outperformed males in all conditions of the recall, regardless of the content of the stories. There was also a main effect for content of the stories. Participants recalled stories dealing with sexual jealousy better than stories dealing with emotional jealousy. We also hypothesized that there would be an interaction effect for gender of the participant and gender of the cheater in the story. Data showed no interaction between these two variables. We also predicted a triple interaction effect

for subject gender, type of jealousy, and gender of the cheater. The analyses showed no interaction effect for these variables.

The fact that females recalled more information than males regardless of content, doesn't necessarily mean that females are more attentive to jealousy of all types. This finding may be related to a simple fact like attention to detail. Since participants were instructed to write down as many details as they could remember, it is quite possible that females were more willing to recount as much of the story as they could. It is possible males just wrote the main facts of the story. This perhaps could be best described as a response bias. Additionally, no gender differences were found in the recognition part of the experiment. This implies that while males might have not been willing to write as much as females, they still absorbed the same information as the females.

Free recall tasks are also generally more difficult than recognition tasks. It is possible that participants were less cooperative upon receiving such a tedious task. Additional variables such as impatient participants, personality, and writing ability may have influenced these findings.

Finally, the effect of content on recall may have been due to the fact sexual infidelity is more exciting than an emotional infidelity. It is possible that recalling details from a story describing an affair would be easier than from a story dealing with a friendship. All participants recognized more sentences from a story dealing with sexual jealousy. So it is possible participants found the scenario containing a sexual infidelity easier to remember than one containing an emotional infidelity. Our data do not suggest that memory for scenarios that vary in the type of infidelity described are a function of the participant's gender as might be expected from evolutionary theory.

Additional variables were analyzed in this study. Paul and Galloway have shown gender differences in blame for an infidelity. The present study allowed participants to assign blame to the characters in the story; the victim, cheater, and the rival. Collapsed across all conditions most blame was placed on the cheater, next on the main character, and least on the other.

Paul and Galloway have shown that in the case of sexual infidelities women tend to place more blame on the rival, where as men place more blame on the partner (1994). An interesting addition in this study, was the manipulation of the sex of the cheater. As expected, each gender tended to place more blame on the cheater when they were of the opposite sex. For example females placed more blame on a male cheater than they did on a female cheater.

Some interesting findings that emerged from this study that differed from past research were in blaming the rival. Past research has suggested that males place more blame on the partner and females on the rival in a sexual infidelity. We found no gender difference in blame of the cheater for either sexual or emotionally infidelities. However, gender differences did exist in blaming the rival. There was a significant difference for females when blaming sexual and emotional rivals. Females placed more blame on a rival in the emotional scenarios. From an evolutionary perspective it would make sense for a woman to blame an emotional rival because an emotional rival would threaten her with loss of her resources. While no content effect was observed for males, there was an effect when sex of the cheater was varied. Males placed significantly less blame on female rivals. Again from an evolutionary perspective a female rival would pose no reproductive threat to a man.

Participants were asked to give their views or opinions about certain aspects of the relationship presented in the scenarios. We found a gender difference in the prediction of the future, whether the couple would stay together or break up. Data showed an interesting difference when gender of the cheater was analyzed. Men, in contrast to women, predicted a greater chance for breakup when the female was the cheater. The sexes were in agreement about the future when the male was the cheater. Again, from an evolutionary perspective males should be less likely to stay with a woman who cheated on him because there would be a greater chance that any children she produces would be the offspring of another man.

Overall the researchers found that memory does not reflect the variables that are predicted by evolutionary theory. Women outperformed men in all areas of memory. Blame was found to be consistent with evolutionary theories' predictions pertaining to gender differences. Memory may still be effected by jealousy, however, and improvements in this might have led to this discovery.

Improvements to this study would have to start with the scenarios. It is possible that one of the scenarios was either less interesting or harder to recall than the other. It is also possible that people had a hard time with the recall because they could not relate to the characters in the story, for instance they might have never dealt with an infidelity. Improvements could also be made in the studies design. Since the free recall portion of the experiment seemed very difficult for the participants, researchers might try a different method such as a cued recall task. Possible error may have existed in the scoring of the free recall, so changing the memory task might also help to reduced errors in scoring.

Future research on the topic of gender difference in jealousy should focus on additional variables that influence jealousy. For example, extensive personal history questionnaires accessing things like past experiences with jealous/infidelity, might provide extra insight into a person's views about jealousy. There is a possibility that jealousy is an implicit attitude, meaning people may not realize that they have jealous tendencies. Memory, even though it was not effected by the variables manipulated in this study, is still an important construct when looking at jealousy. Information about jealousy is most likely effected by some variable, like past history, before it is processed and stored into an individual's memory. Perhaps sampling a broader subject pool might have changed the outcome of this study. As pointed out in introduction there are certain ethical limitations to research concerning jealousy.

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Appendix A

Demographic Questionnaire

All information on this form is confidential. It will never be paired with your name or any identifying information. Any information you give on this form will be solely for research purposes.

Please answer the questions below.

Age: _____

Sex: M F

Sexual Orientation: Bisexual Homosexual Heterosexual

Please check your current relationship intensity:

_____ Single

_____ Married

_____ Engaged

_____ Seriously dating a single person

_____ Casually dating one or more persons

Appendix B

In the story you have just read a relationship problem existed. Listed below are the three main characters in the story, using percentages please rate how responsible you feel each character is for this infidelity. Please make the percentage scale add up to 100%. You may delegate the percentages as you see fit giving scores from 0-100 to any character.

Jenny _____

Mark _____

Sarah _____

Appendix C

This questionnaire is designed to assess your opinions on the relationship you read in the study.

How common do you think the situation described by the client in the story is?

Rare					Very Common
1	2	3	4	5	

What do you predict as the future of this relationship?

Breakup		Postpone wed		Married as scheduled
1	2	3	4	5

Do you think that therapy will help this couple?

YES		MAYBE		NO
1	2	3	4	5

Figure 1

Recall by Content & Gender

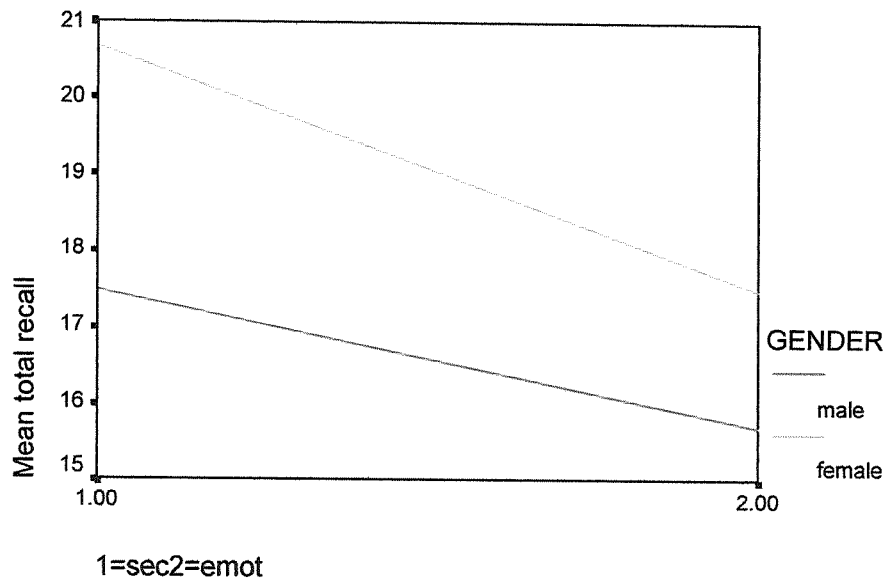
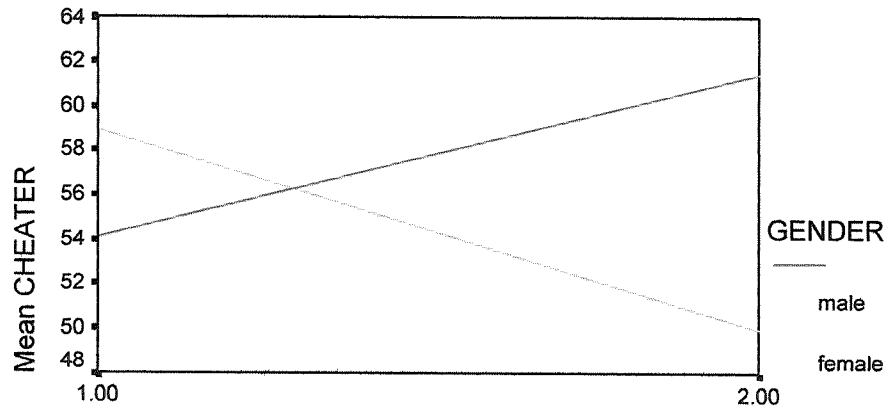


Figure 2

Blame Assigned to Cheater



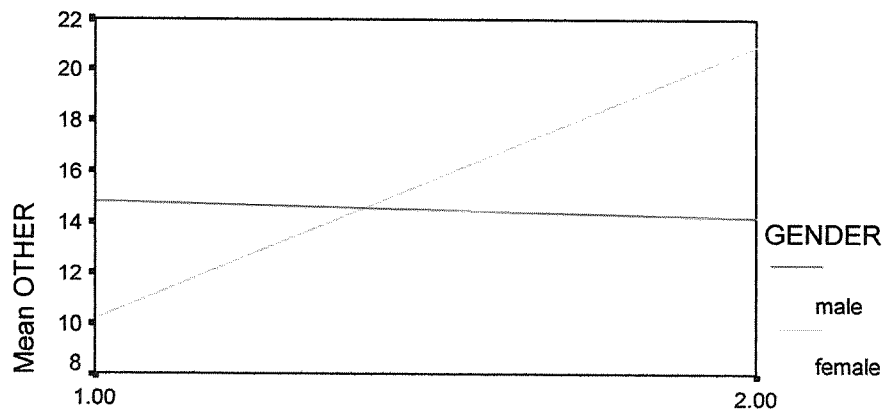
Male=1fem=2

1=Gender of cheater was male

2=Gender of cheater was female

Figure 3

Blame Assigned to Rival



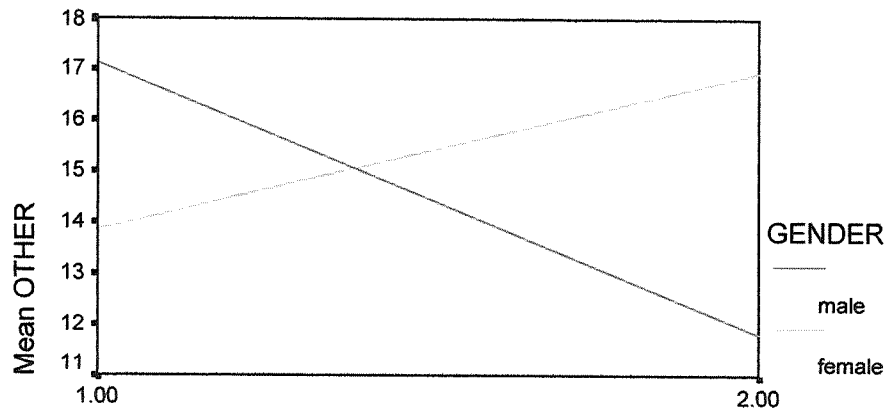
1=sec2=emot

1=Sexual Scenario

2=Emotional Scenario

Figure 4

Blame Assigned to Rival



Male=1fem=2

1=Male cheater

2=Female cheater

Figure 5

