Green Lovers' Blues: Romantic Jealousy's Effect on Self-Esteem

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Abstract

According to evolutionary theory, jealousy serves as an advantage in mate retention if effectively expressed. Social comparison theory further explains that feelings of jealousy involve a comparative process between an individual and the target threat, potentially affecting self-esteem. 105 participants were recruited from social media websites to complete a survey. A 10-item split-half version of the State Self Esteem Scale (SSES) was presented to participants prior to a Control or Experimental stimulus. Participants then completed a second split-half of the SSES to measure any significant decline in state self-esteem brought on by the jealousy induction in the Experimental condition. Analyses did not discover any significant declines on the measurement of state self-esteem. The current body of knowledge supports a correlation between jealousy and self-esteem, and future research should continue to explore the directional relationship between variables.

Romantic Jealousy's Effect on Self-Esteem

Evolutionary psychology has presented the theory that romantic jealousy, the feelings of threat or loss to an important emotional relationship, evolved as an adaptation to protect investment relationships (Buss, 1998; 2005). According to evolutionary theory, jealousy serves as an advantage in mate retention and sexual reproduction for those who are able to effectively express such feelings of romantic jealousy (Wade & Walsh, 2008). Central to human social patterns, jealousy has been shown to be a universal emotion (Buunk & Hupka, 1987). Much of evolutionary theory focuses on sex differences in the experience of romantic jealousy between males and females (Buss, 1992; Sagarin, et al, 2003; Sagarin & Guadagno, 2004), while other bodies of research primarily focus on personality traits predisposing individuals to exhibit these jealous feelings (Wade & Walsh, 2008). Previous empirical research expands on personality theory, investigating the effect of self-esteem levels on an individual's tendency toward feelings of jealousy (Steward & Beatty, 1985), though few studies have explored the reverse direction of jealousy's potential impact on self-esteem.

Evolutionary theory supports romantic jealousy as an adaptation to mate competition (Buss, 1998), while social comparison theory further explains that feelings of romantic jealousy involve a comparative process between an individual and the target threat or rival (Salovey & Rodin, 1986). Additionally, individuals continue this process by assuming their romantic partners have evaluated the target threat against them in a similar comparative process (Guerrero, et al, 1995). We assume it follows that inducing open-ended feelings of jealousy will elicit a negative effect on one's self-esteem by encouraging this ruminative comparative process.

Broadly exploring the effect of romantic jealousy on aspects of self-esteem, Guerrero et al. (1995) surveyed the restoration behaviors of individuals after inquiring about their most recent jealous episode in a meaningful relationship. Several factors were uncovered during their sorting process. Of interest to our study, analysts found self-protection strategies such as Manipulation Attempts, which included efforts to switch restorative communication onto one's partner, were common. Such findings may be interpreted as characteristic of individuals with low self-esteem and problematic communication, potentially brought on by such romantic jealousy priming.

Muise, Christofides, and Desmarais (2009) analyzed participant's Facebook access on the measure of romantic jealousy. Self-report data analyzed by a blind inter-rater discovered that access to information regarding a partner's extradyadic relationships correlated with feelings of romantic jealousy. This study detected "lack of context" as a high contributing factor on the measurement of romantic jealousy. This fits our idea that rumination and mental comparative processes continue after being primed for jealousy, whether explicitly or implicitly, hinting at an effect on self-esteem.

DeSteno, Valdesolo, and Bartlett (2006) successfully induced jealousy in a lab setting using staged manipulation to create a realistic scenario. Their experiment required participants to complete an Implicit Association Test (IAT) to assess self-esteem levels before participating in a confederate-partnered task meant to build rapport and produce an established relationship. After working with the confederate as a partner, the confederate alerted the participant that the experimenter had noted they might work alone or in pairs. In the neutral condition, the confederate left the experiment for an appointment, and in the jealousy condition joined a new partner who arrived after the first task had been completed. Joining the new partner successfully

induced jealousy, measured post-manipulation by repeating the IAT assessment and adding a jealousy scale assessment. Elevated levels of jealousy were recorded in the jealousy condition, illustrating successful manufacture of jealous feelings in an experimental setting. Additionally, their findings confirm our hypothesis that participant self-esteem is negatively impacted by this jealousy.

Using established measures of jealousy and anxiety, Khanchandani and Durham (2009) showed that female college students with higher self-esteem, as measured by the Rosenberg Self Description Scale, were less susceptible to romantic jealousy inducement. Their study highlights the direction of the current body of research within our target population of college students, assuming self-esteem mediates jealousy levels, rather than the opposite. We aim to explore the inverse.

The aforementioned studies have shown that jealousy and self-esteem are correlated, though most commonly studied as self-esteem effecting jealousy. This study intends to experimentally examine the effect of romantic jealousy induction, a strategic process designed to elicit complex feelings of threat to an important emotional relationship, on participant's self-esteem as measured by the State Self-Esteem Scale (SSES). In manipulating the independent variable by introducing jealous emotions, we will have a greater sense of directional cause and effect. Through a counter-balanced online survey, participants will complete one half of the SSES, be presented with a romantic jealousy inducing or a controlled neutral stimulus, and complete the second half of the SSES to divulge any measurable impact of introducing romantic jealousy. By priming with vague scenarios of relational transgression, threats to a real or imagined meaningful relationship, we expect that participants will undergo a jealousy-related comparative self-evaluation process. We expect that this process will produce a negative effect

on previously measured levels of self-esteem.

Method

Participants

73 females, 31 males, and 1 genderqueer (n=105) ranging from 18 to 65 years of age (M=32.91, SD= 12.79) responded to our survey after clicking through social media (Facebook, Twitter) links. The criterion for inclusion was based on convenience, proximity or access to the researchers. Participants recruited from a participating Psychology course were compensated with course credit, though participants outside of the university were not compensated; there was no penalty to students for choosing not to participate. . Our sample included primarily Caucasian persons (90) with the remaining distributed as 2 Black or African Americans, 3 Asian, 3 Hispanic or Latina/o, and 6 identifying as one or more racial categories. Demographic survey of relationship status revealed 68.6 percent of the sample to be in long term relationships ranging from 1-600 months (M = 101.53, SD = 121.97) the remainder of the sample self-identified as Single or Dating.

Materials

Using Qualtrics online survey system, participants were presented with an informed consent form prior to beginning the survey (Appendix A). Upon acceptance of informed consent, participants were presented with one of two split-halves of the State Self-Esteem Scale (Heatherton & Polivy, 1991). The State Self-Esteem Scale (SSES; Appendix B) was chosen over other self-esteem measures such as the Rosenberg Self-Esteem Assessment (Schmitt & Allik, 2005) due to the 20-item length. Additionally, many self-esteem surveys measure long-term traits, while the SSES evaluation of shorter-term state will provide a more clear effect of the

independent variable manipulation. After answering 10-items of the SSES, participants were presented with an instruction screen informing them of a memory recall test to follow. They were then randomly presented with the control material, a recipe for Roux from Food.com (Appendix C), or the experimental material, a narrative (Appendix D). The Roux recipe was chosen as its bland nature is unlikely to solicit nostalgic or pleasant memories. The narrative was created to prime participants with jealous thoughts as they attend to additional details. A manipulation question set followed the control or manipulation stimulus (Appendix C, D). The Qualtrics survey also contained a final section for demographic collection including Gender, Age, Ethnicity, and Relationship Status, prior to debriefing participants with the true hypothesis of our experiment along with contact information for follow up questions.

Procedure

Using Qualtrics online survey software, a 10-item, counter-balanced split-half version of the State Self-Esteem Scale was presented to participants who digitally consented to the procedure via an informed consent introduction page. Any non-consenting subjects were sent directly to the end of the study. After the SSES half, participants were instructed that a brief memory test would follow and were then shown a text-only stimulus, either a recipe for roux from Food.com, or the narrative meant to induce jealousy. A 2-item manipulation check relevant to the material followed to assure full reading comprehension and uphold the deception of the memory recall variable deception. Participants were then directed to the second half of the SSES where any effect on the dependent variable would register. After collecting demographic information including Gender, Age, Ethnicity, and Relationship Status, participants were debriefed with our hypothesis regarding jealousy's effect on self-esteem, along with contact information for any follow up questions.

Results

State Self-Esteem Scale (SSES) scores are based on a possible 100 scale points, where 20 items are scaled between 1-5, with multiple reverse scored items (see Appendix B). We are less interested in self-esteem score overall, but rather concerned with investigating changes in state self-esteem. For this, we compared the pre-test split-half score of the SSES, a possible 50 points, to the post-test split-half score of the SSES, which participants had taken after being exposed to one of two conditions.

We conducted a t-test for independent samples. Analyses showed that the Experimental group ($M = 2.059$, $SD = 3.273$) and the Control group ($M = 2.405$, $SD = 3.989$) did not show significant declines in measures of self-esteem $t(62.683) = 0.45211$, $p = 0.6528$ (see Figure 1).

Discussion

Much of the existing body of knowledge regarding jealousy and self-esteem studies the effect of self-esteem levels on an individual's disposition toward jealous feelings. As Khanchandani and Durham (2002) discuss, levels of self-esteem are negatively correlated with levels of jealous display. Experimentally measuring the effect of jealousy on self-esteem, we were unable to produce significant results despite generating sizeable power. No significant declines were found between the pre-test State Self-Esteem Scale (SSES) and the post-test SSES between the Control and Experimental groups.

There are several factors that may have contributed to this lack of a significant effect. The manipulation condition stimulus, a narrative created by the researchers, may not have been strong enough to induce jealousy in this sample. Originally, we predicted our sample would be

comprised of primarily college students, younger individuals with less relationship experience. Because developmental psychology accepts that personality traits become more consistent after the age of 30, increasing in a linear-like pattern before peaking near age 55 (Roberts & DelVecchio, 2000), our sample, with a mean age of 32.9, is likely personally secure and thus potentially unaffected by this attempt at manipulation. Considering the average length of relationships for our sample is roughly between 2 and 8 years, (*M*=101 months, *SD*=121.9 months). Sample relationship duration is heavily right skewed, as evidenced by the median length to be 22 months. The average sample relationships, however, are understood to be fairly consistent and less affected by our narrative.

Furthermore, given evolutionary theory support of jealousy as an evolved adaptation to protect investment relationships (Buss, 1998; 2005), serving as an advantage in mate retention and sexual reproduction (Wade & Walsh, 2008), we should have expected to see those participants in the longest-term relationships (31.4 percent of sample in relationships over 5 years) to have the highest jealousy levels. This was not the case, and their scores did not significantly differ from the whole of the sample.

Other limitations of the experiment are the use of online survey tools, which allowed us to reach a considerable sample, but could not control for distraction during the testing process. By exploring our manipulation check item accuracy, we found that while only one of the participants failed completely by answering both checks incorrectly, participants in the Control condition answered 15 out of 74 questions incorrectly (20.2 percent), while participants in the Experimental condition answered 10 out of 136 questions incorrectly (7.4 percent). This is a generally high success rate, potentially bolstered by our deceptive memory testing explanation, prompting participants to attend to stimuli more than they ordinarily would. The discrepancy

between the Experimental and Control accuracy may be due to the type or amount of information provided. The Experimental narrative reads as a story, common for individuals to attend to on a daily basis and perhaps simply more interesting. The Control stimulus, a detailed recipe, is also a common tool, but is generally referenced several times and not memorized. This may also point toward a weak manipulation or a less sensitive measurement scale. At 20-items, the State Self-Esteem Scale may not have been thorough enough to correct for social desirability, where a longer scale may correct for such biases. Future research with a longer measurement scale should also be wary of potential fatigue effects.

Future exploration of jealousy's effect on self-esteem may be wise to incite jealous behavior much like Desteno, Aldesolo, and Bartlett (2006) using staged event manipulation in the lab. A confederate manipulation may give more accurate results if inter-raters agree that the participant has likely been suitably provoked into jealousy prior to completing the dependent measurement scale. Directly observing behavior during such a manipulation limits intentional correction for social desirability.

Because jealousy is believed to be an evolved and useful trait, and there is a published correlation with self-esteem levels, these variables are worthy of further explanation to examine any interactions or moderators that would better explain an effect. Given jealousy is a universal trait (Buunk & Hupka, 1987) and may have a negative effect on relationship satisfaction and intimacy production, it is worthwhile to explore the cause of lowered jealousy levels. Jealousy corrodes confidence, derailing affection and eroding intimacy. As Guerrero et al. (1995) explored in their research regarding communication, jealousy can produce problematic exchanges in romantic relationships. Because of this, our and future research benefits the population as a whole through providing clues to understanding jealousy and promoting healthier

social interaction. Practical implications include foundations for producing new tools in marriage and family therapy, potentially affecting what has become a high divorce rate in the United States. More specifically, unearthing a cause and effect relationship may have practical implications in cognitive behavior therapy, assisting individuals with mechanisms to healthfully manage or mitigate destructive jealous emotions.

References

Buss, D. (1998). Sexual strategies theory: Historical origins and current status. *Journal of Sex Research, 35,* 19-31.

Buss, D., & Haselton, M. (2005). The evolution of jealousy. *Trends in Cognitive Sciences, 9,* 506-507. doi:10.1016/j.tics.2005.09.006

Buss, D., Larsen, R., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science, 3,* 251-255.

Buunk, B., & Hupka, R. (1987). Cross-cultural differences in the elicitation of sexual jealousy. *Journal of Sex Research, 23*, 12-22.

Desteno, D., Valdesolo, P., & Bartlett, M. (2006). Jealousy and the threatened self: Getting to the heart of the green-eyed monster. *Journal of Personality and Social Psychology, 91,* 626-641. doi:10.1037/0022-3514.91.4.626

Guerrero, L., Andersen, P., Jorgensen, P., Spitzberg, B., & Eloy, S. (1995). Coping with the green-eyed monster: Conceptualizing and measuring communicative responses to romantic jealousy. *Western Journal of Communication, 59*, 270-304.

Heatherton, T., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology, 60*, 895-910.

Khanchandani, L., & Durham, T. (2009). Jealousy during dating among female college students. *College Student Journal, 43*, 1272-1279.

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted: Does Facebook bring out the green-eyed monster of jealousy? *CyberPsychology & Behavior, 12*, 441-444. doi:10.1089/cpb.2008.0263

Roberts, B., & DelVecchio, W. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin, 126*, 3-25. doi:10.1037//0033-2909.126.I.3

Sagarin, B., & Guadagno, R. (2004). Sex differences in the contexts of extreme jealousy. *Personal Relationships, 11*, 319-328. doi:10.1111/j.1475-6811.2004.00085.x

Sagarin, B., Becker, V., Guadagno, R., Nicastle, L., & Millevoi, A. (2003). Sex differences (and similarities) in jealousy: The moderating influence of infidelity experience and sexual orientation of the infidelity. *Evolution and Human Behavior, 24*, 17-23.

Salovey, P., & Rodin, J. (1986). The differentiation of social-comparison jealousy and romantic jealousy. *Journal of Personality and Social Psychology, 50*, 1100-1112.

Schmitt, D., & Allik, J. (2005). Simultaneous administration of the Rosenberg self-esteem scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology, 89*, 623-642. doi:10.1037/0022-3514.89.4.623

Stewart, R., & Beatty, M. (1985). Jealousy and self-esteem. *Perceptual and Motor Skills, 60*, 153-154. doi:10.2466/pms.1985.60.1.153

Wade, T., & Walsh, H. (2008). Does the Big-5 relate to jealousy, or infidelity reactions? *Journal of Social, Evolutionary, and Cultural Psychology, 2*, 133-143.

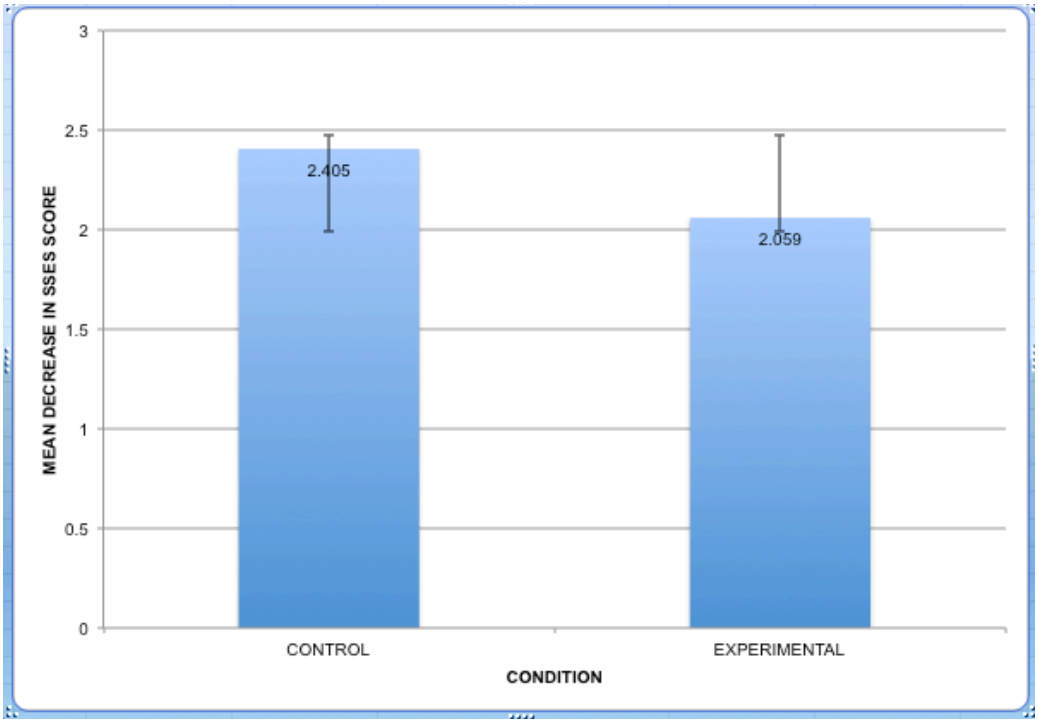

Fig. 1

Means of difference in score between pre-test SSES and post-test SSES for Experimental and Control conditions

Appendix A

Informed Consent Form:

We appreciate your consideration for participating in this survey.

Participation
This study is investigating self-esteem and short-term memory recall, and as such, we do not anticipate that taking this survey will contain any risk or inconvenience to you. Be assured that your participation is strictly voluntary. You may withdraw your participation at any time, including exiting the survey at any point, without penalty.

Should you choose to participate, please answer the following questions as honestly as possible. These questions concern day-to-day emotions and a brief memory recall test. The entire survey should take you less than 10 minutes.

Confidentiality
All information collected will be anonymous, used only for research, and will be kept confidential. There will be no connection to you specifically in the results or in future publication of the results.

I understand the risks and benefits of participating in this study

✓ Accept

____ Do not accept

Appendix B

This is a questionnaire designed to measure what you are thinking at this moment. There is no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer.

Again, please answer these questions as they are true for you RIGHT NOW.

1. I feel confident about my abilities.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

2. I am worried about whether I am regarded as a success or failure.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

3. I feel satisfied with the way my body looks right now.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

4. I feel frustrated or rattled about my performance.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

5. I feel that I am having trouble understanding things that I read.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

6. I feel that others respect and admire me.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

7. I am dissatisfied with my weight.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

8. I feel self-conscious.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

9. I feel as smart as others.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

10. I feel displeased with myself.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

11. I feel good about myself.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

12. I am pleased with my appearance right now.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

13. I am worried about what other people think of me.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

14. I feel confident that I understand things.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

15. I feel inferior to others at this moment.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

16. I feel unattractive.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

17. I feel concerned about the impression I am making.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

18. I feel that I have less scholastic ability right now than others.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

19. I feel like I'm not doing well.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

20. I am worried about looking foolish.

1	2	3	4	5
Not At All	A Little Bit	Somewhat	Very Much	Extremely

Scoring:
Items 2, 4, 5, 7, 8, 10, 13, 15, 16, 17, 18, 19, 20 are reverse-scored.
Sum scores from all items and keep scale as a continuous measure of state self-esteem.

The subcomponents are scored as follows:
Performance Self-esteem items: 1, 4, 5, 9, 14, 18, and 19.
Social Self-esteem items: 2, 8, 10, 13, 15, 17, and 20.
Appearance Self-esteem items: 3, 6, 7, 11, 12, and 16.

Appendix C

Please complete the following recall task to measure short-term memory and attention to detail. Please carefully read the following passage, after which you will be directed to a short quiz.

How to Make Roux: A Step-by-Step Guide

Roux can be made with a variety of oils and animal fats. They are commonly made with vegetable oil, olive oil, or clarified butter, but can also be made with bacon grease or other rendered fats. Since an oil-based roux will separate as the flour settles to the bottom, clarified butter is the preferred fat to use when making a roux for future use, as it will harden when refrigerated, trapping the flour in suspension.

There are four varieties of roux: white, blond, brown, and dark brown. The different colors are a result of how long the roux is cooked; white is cooked for the shortest time, while dark brown cooks the longest. White and blond roux are the most common, used to thicken sauces, soups, and chowders. Brown and dark brown roux have more flavor, but less thickening power than white or blond roux. These roux are primarily used in Cajun and Creole dishes, most notably gumbo and jambalaya.

1. Begin making the roux by melting 1 cup of clarified butter in a saucepan over medium heat. Once the butter is hot enough that a pinch of flour sprinkled into it will slowly start to bubble, proceed to the next step.

2. Whisk 1-3/4 cups of flour into the clarified butter until a thick, rough paste forms. Whisk constantly while it bubbles over medium heat. As it cooks, the roux will become smooth and begin to thin.

3. The white stage is reached once the flour loses its raw smell, after about 5 minutes of cooking and stirring. Although slightly grainy in texture, it is much smoother than it was at the beginning. The mixture is bubbling vigorously and the color is a little paler than when the clarified butter and flour were first combined.

4. After about 20 minutes of continuous cooking and stirring, the roux will reach the blond stage. The bubbles are beginning to slow, and the aroma has taken on nuances of popcorn or toasted bread. The roux is now tan colored, very smooth, and thinner than it was at the white stage.

5. Brown roux will reach a peanut butter-brown color after approximately 35 minutes of cooking and stirring. Its aroma is more pronounced and sharper than the nutty nuances of blond roux. The roux is now thinner, and the bubbling has slowed even more.

6. Even darker than brown roux, the dark brown stage occurs after about 45 minutes of cooking, and is the color of melted milk chocolate. Its aroma will also mellow from the strong, roasted flavor of brown roux and will actually smell a little like chocolate. The roux is no longer bubbling, and is very thin.

Multiple choice manipulation check questions containing one correct answer:
1. How many different types of roux are there?
2. How many minutes of continuous cooking does it take for the roux to reach the **blond stage**?

Appendix D

Please complete the following recall task to measure short-term memory and attention to detail. Please carefully read the following passage, after which you will be directed to a short quiz.

You and your partner have been seeing each other for about a year. Your partner is someone you could see yourself with for the rest of your life. They are thoughtful, easygoing, funny and extremely attractive. Lately, your partner is starting to stay later at work and is suddenly spending a lot of time with one of their coworkers. Your partner is constantly talking about how great, funny and enjoyable this co-worker is. This weekend your partner and co-worker are going on a business trip to Duluth, MN. Your partner enthusiastically packed for the trip, distracted from your attempts to connect in the short time you have together before they go.

On Friday you call your partner to see if they arrived safely. They answer the phone and you hear their coworker laughing and what sounds like a nightclub. They tell you that they went for some drinks to talk about their meeting tomorrow. Your partner seems very anxious to get off the phone. You call again Saturday and your partner does not answer or return your phone call. They posted a photo of themselves on Instagram, arms around their co-worker, on the shore of Lake Superior. You do not hear from your partner until they are on their drive home Sunday.

On Sunday, when your partner gets home you ask them how their trip was, they are rather short with you and do not want to talk about it. When you question further they provide one-word answers and eventually end the conversation by saying nothing is going on between them. You and your partner both go to bed upset. While your partner is sleeping, you notice a new text message pop up on their phone's lock-screen. The message reads, "I had a really great time with you this weekend!! I hope we can sneak away like that again ;)"

Multiple choice manipulation check questions containing one correct answer:
1. Where did your partner go on their business trip?
2. What day of the week did your partner return home?

Appendix E

Debriefing:

Thank you for completing our experiment!

This study was testing how jealousy effects state (temporary) self-esteem. You were either in the control condition, in which you were shown a recipe for Roux, or the experimental condition in which you were harmlessly, but subconsciously primed with concepts encouraging rumination on potential partner-infidelity, arousing jealousy.

We hypothesize that priming with jealousy vignettes will have a short-lived, but negative effect on participant's state self-esteem.

If you have any questions, you can contact the primary investigators at qualtricsmemorysurvey@gmail.com