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Consequences of Upward Social Comparisons in Social Anxiety

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CONSEQUENCES OF UPWARD SOCIAL COMPARISONS IN SOCIAL
ANXIETY

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ABSTRACT

Although social comparisons have been observed in social anxiety, the effects from the direction of the social comparison have not been adequately tested in social anxiety. This study examined the impact of an upward comparison (UC) vs. same level comparison on negative self-appraisal, negative affect, and anxiety in high vs. low social anxiety. Participants read about another student's adjustment to college in which the person has adjusted better/more smoothly or has adjusted similarly to the participants. Participants completed baseline and post-comparison measures of their negative self-appraisal, negative affect, and anxiety. Although results failed to support the study hypotheses, the manipulation appeared to mostly influence female, but not male participants. Limitations and future directions for examining social comparison in social anxiety are discussed.

INTRODUCTION

According to the American Psychiatric Association (2000), the prevalence of social anxiety disorder (SAD) ranges from 2-20%. This suggests that SAD is an important psychological problem that merits significant public awareness. SAD is a burdensome and chronic disorder, in which people fear negative evaluation from others. Even if individuals with SAD may gain a new friend from an interaction, they avoid social situations or endure them with intense anxiety. The nature of SAD may escalate the severity of the disorder if left untreated. Thus, it is critical to explore potential maintenance factors in SAD.

The aim of the present study is to examine the role of social comparison in SAD. Social comparison refers to evaluating where one stands – higher, the same, or lower - relative to another person on a specific attribute(s) (Suls, Martin, & Wheeler, 2002; Wood, 1996) and the meaning drawn from content of the comparison – better, the same, or worse – regarding oneself. People typically compare themselves with others, particularly when there is no objective information available they could use to evaluate themselves (Festinger, 1954). Social comparison may represent an important implicit process that contributes to negative self-appraisal, which is one component of SAD. Specifically, interpretations from one type of social comparison may contribute to negative self-appraisal in SAD.

SAD is characterized by a marked and persistent fear of negative evaluation in social situations (APA, 2000). Current models of SAD (Clark & Wells, 1995; Rapee & Heimberg, 1997) propose that negative self-appraisal is a primary maintenance factor of distress in SAD. Negative self-appraisal in SAD may occur through thoughts of inferiority, incompetence, unattractiveness, and inadequacy, or negative evaluation from others (Antony, Rowa, Liss, Swallow, & Swinson, 2005). These thoughts contribute to distress in social situations for individuals with SAD. Their selective attention to negative feedback from others (Schultz & Heimberg, 2008) in social situations reinforces their fear of negative evaluation.

Comparing self- and observer ratings of performance in a social situation is a common method to assess self-appraisal in SAD. Compared to observer ratings, SAD individuals rate their performance as poorer (Norton & Hope, 2001; Rapee & Lim, 1992) and showing greater negative behavior and less positive behavior (Stopa & Clark, 1993). Furthermore, they markedly overrate the extent of observable anxiety in their performance or behavior (Alden & Wallace, 1995; Norton & Hope, 2001). The discrepancies between the ratings, specifically lower self-

ratings demonstrate their negative self-appraisals. However, the mechanism causing this discrepancy, which may explain the relationship between SAD and negative self-appraisal, is unknown.

Social comparison may partially explain the association between SAD and negative self-appraisal. Social comparison processes inform people as to whether they met, exceeded, or fell short of a criterion and this should be reflected in one's self-appraisal and affect. Upward social comparisons (UCs) are comparisons of oneself to an appraised higher standard and typically induce negative affect, whereas downward social comparisons are comparisons of oneself to an appraised lower standard and typically induce positive affect (Giordano, Wood, & Michela, 2000; Morse & Gergen, 1970; Olson & Evans, 1999; Wheeler & Miyake, 1992; Wood, 1996). Perceptions of inferiority in SAD may arise from the meaning drawn from the content of UCs.

Although social comparison is one form of self-evaluation and is thus intertwined with negative self-appraisal, social comparison is thought to be distinct from and precede negative self-appraisal. The meaning individuals extract from the content of the social comparison – if there is a discrepancy, how large the discrepancy is, and if the dimension the discrepancy occurs on is good or bad - may determine whether their self-evaluation is positive or negative. This is what differentiates social comparison from negative self-appraisal. Thus, the larger the perceived discrepancy drawn from an upward social comparison, the more likely one's self-evaluation will be negative.

The nature of social comparisons suggests that they may occur automatically (Wood, 1989). They occur primarily in social situations (about 39 - 49% of all social comparisons reported in (Antony, et al., 2005; Giordano, et al., 2000; Wheeler & Miyake, 1992)) or when thinking about, visualizing, or daydreaming about another person (about 21% of all social comparisons reported in (Wheeler & Miyake, 1992)).

The consequences of social comparisons prompted research on social comparison in depression and in those at-risk for eating disorders (Bazner, Bromer, Hammelstein, & Meyer, 2006; Giordano, et al., 2000; Hausenblas, Janelle, Gardner, & Focht, 2004; Rosenblatt & Greenberg, 1991; Swallow & Kuiper, 1988, 1992, 1993; Tiggemann & McGill, 2004; Trampe, Stapel, & Siero, 2007).

Research on social comparison in depression has examined whether depressed individuals were prone to making unfavorable social comparisons (i.e., UCs; (Swallow &

Kuiper, 1992, 1993)). Their interpretations of UCs may contribute to their tendency for negative self-evaluation and perceptions of inferiority (Beck, Rush, Shaw, & Emery, 1979). Several studies indicate that social comparison appears to perpetuate or worsen negative self-appraisals (Swallow & Kuiper, 1990, 1992, 1993). In turn, these negative self-appraisals likely contribute to negative affect. Depressed individuals feel worse after UCs (Bazner, et al., 2006; Giordano, et al., 2000; Rosenblatt & Greenberg, 1991).

Decreases in positive affect after making an UC depended upon the timing (current or past) and severity of depressive symptoms or episodes (Bazner, et al., 2006). Participants with low current depression, but who had previous depressive episodes experienced a greater drop in positive affect than those with no former depressive episodes. Also, participants with current depressive symptoms showed a larger decline in positive affect than those with no current depressive symptoms. Bazner et al. (2006) suggest that social comparisons and how depressed individuals interpret them may sustain their negative self-appraisals.

Like studies on social comparison in depression, studies on social comparison in those at risk for eating disorders examine how UCs may contribute to negative self-appraisals (Trampe, et al., 2007) and negative affect (Hausenblas, et al., 2004; Tiggemann & McGill, 2004). Viewing pictures of models or other thin and physically attractive individuals typically generates UCs in this subclinical population. They have obtained similar results as those for social comparison in depression. Women dissatisfied with their bodies evaluated themselves more negatively and reported greater negative affect after viewing pictures of models (Hausenblas, et al., 2004; Tiggemann & McGill, 2004; Trampe, et al., 2007). Taken together, the findings are consistent that UCs generally induce negative self-appraisals and negative affect in depressed individuals and those vulnerable to developing eating disorders.

Despite considerable research on social comparison in depression and those at-risk for eating disorders, it is surprising that there are relatively few studies addressing social comparison in SAD. Social comparison appears to be a pertinent mechanism in SAD due to the nature of the disorder and its high comorbidity with depression.

Individuals with SAD likely make comparisons in social situations as others do (Antony, et al., 2005; Wheeler & Miyake, 1992). They may compare themselves to others (i.e., social comparison) and/or to an alternative self (i.e., self-focused counterfactuals; (Roese, 1994)). Self-focused counterfactuals are comparisons of oneself to an alternative self (e.g., more idealized or

perfect version of oneself). During the actual social situation, individuals with SAD may be more likely to make social comparisons than self-focused counterfactuals because of their constant fear of negative evaluation from others, so they may implicitly monitor how they are doing in the situation relative to others.

Wood (1989) suggests that social comparison may occur through inference or by not explicitly considering a reference point, which may occur in SAD. For example, individuals with SAD may think “I’m acting awkwardly” during a social situation. This thought demonstrates the failure to explicitly consider a reference point. However, they may implicitly perceive a discrepancy between themselves and others. Others are perceived as ranking higher on or having more of a specific attractive attribute than they do. Thus, individuals with SAD infer that they fell short of expectation. This suggests that an UC has occurred. Because Wood (1996) suggests that social comparison is automatic, social comparison may be an amplified implicit process in SAD.

Based on Clark and Wells (1995), perceived discrepancies between self and others from UCs would distress individuals with SAD for two reasons. First, they may make a greater number of UCs due to their fear of negative evaluation and inclination to evaluate themselves negatively (Rapee & Heimberg, 1997). Second, when they make UCs, the meaning they draw from the content of the comparison may lead them to overestimate the discrepancy between themselves and others. Individuals with SAD may perceive the inferences drawn from the content of UCs as very threatening.

Their overestimation of the perceived discrepancy between themselves and others on a specific attribute from an UC may contribute to negative self-appraisals. This may occur through self-critical thoughts such as “I act awkward” or heightened fears of negative evaluation (Antony, et al., 2005). In turn, negative self-appraisal from UCs will influence their affect. Schlenker and Leary (1982) suggest that as the discrepancy between self and others increases, one’s anxiety likely increases. Negative self-appraisals from UCs may generate markedly more distress and negative affect. Consequently, the negative self-appraisal and affect resulting from the initial UC may sustain or exacerbate their social anxiety.

Antony, Rowa, Liss, Swallow, and Swinson (2005) proposed that social comparison processes mediate the relationship between SAD and negative self-evaluation. Specifically, UCs may at least partially explain the association between SAD and negative self-evaluation. Antony

et al. (2005) used diaries to explore social comparison processes in SAD. The sample consisted of individuals with SAD and nonclinical control individuals. Although the groups did not differ in the *number* of social comparisons they made over 14 days, they significantly differed in the *types* of comparisons made. UCs comprised 64% of all the social comparisons individuals with SAD made, relative to 39% that control individuals made in the same time frame (Antony, et al., 2005).

There were no significant differences in the types of situations in which participants made the social comparisons in Antony et al. (2005). Consistent with previous research (Wheeler & Miyake, 1992), social comparisons occurred most frequently during social situations (39% for individuals with SAD, 35% for control). The second situation in which participants made social comparisons were just thinking about a person or seeing someone. Furthermore, social comparisons influenced subsequent affect in Antony et al. (2005). Though UCs increased anxiety across participants, the SAD group showed a greater elevation in anxiety than the control group. In contrast, downward comparisons produced negligible effects on anxiety. Downward social comparisons could be a logical addition to SAD treatment, given that they typically generate positive affect. However, Antony et al.'s (2005) results suggest a minimal effect of downward comparisons in SAD. UCs in SAD appear more important to study to determine if social comparison partially mediates the association between SAD and negative self-appraisal.

One concern regarding the results from Antony et al. (2005) was that the gender distribution among participants with SAD and nonclinical controls was significantly different. Women made up a greater percentage of nonclinical controls than participants with SAD (83% vs. 59%). They investigated if gender moderated affective responses from the comparisons because the difference in gender distribution between the groups may have explained differences between individuals with SAD and nonclinical controls on depression, anxiety, and negative mood. For the most part, this was not the case. However, among participants with SAD, men reported greater negative mood and depression than women after an upward comparison. In addition, regardless of group, women reported greater anxiety than men after an upward comparison.

The present study sought to extend Antony et al.'s (2005) results by directly manipulating social comparison. Whereas Antony et al. (2005) instructed individuals with SAD and

nonclinical controls to rate their affect on several dimensions before and after making a social comparison in the real world, the present study experimentally manipulated the direction of the social comparison (UC or same-level [SLC]) to examine its impact on negative self-appraisal, negative affect, and anxiety in high versus low socially anxious individuals. Furthermore, we wanted to examine if gender remained an important factor in responses elicited from the social comparison manipulation because we had a roughly equivalent percentage of men and women.

We predicted that the UC condition would produce greater negative affect relative to the SLC condition, controlling for depression. Second, we predicted an interaction of social comparison condition (UC vs SLC) and time (pre-comparison versus post-comparison), such that the SLC condition would produce minimal changes in negative affect and anxiety, whereas the UC condition would produce significantly greater negative affect and anxiety, controlling for depression. A similar interaction was predicted for negative self-appraisals with social anxiety level and social comparison condition as the independent variables when controlling for depression. Within the UC condition, we predicted that participants with high social anxiety, relative to those with low social anxiety, would show a substantially greater increase in negative affect, anxiety, and negative self-appraisal following the manipulation after controlling for depression. Within the SLC condition, we predict minimal changes in those same variables after controlling for depression.

When given the option of either working with a partner or alone for the final task, we predicted an interaction of social anxiety level and social comparison condition. We predicted that after controlling for depression, the SLC condition and those with low social anxiety in the UC condition would be more likely choose to work with a partner. However, those with high social anxiety in the UC condition were predicted to be more likely to choose to work alone.

Finally, we tested several mediational models using Baron and Kenny's (1986) criteria. First, upward comparisons may mediate the relationship between the social comparison manipulation and negative affect and/or negative self-appraisal. Second, upward comparisons may mediate the relationship between social anxiety and negative self-appraisal. Third, trait social comparison may partially mediate the relationship between social anxiety and negative self-appraisal. These mediational models will control for social comparison condition and BDI scores. We will also use the Sobel test (1982) to test for the significance of the mediational models.

METHODS

Participants

One-hundred five Florida State University first-year undergraduates in an Introductory Psychology course participated in the study. While any first year undergraduate in this course was eligible to participate in the study, we overselected for individuals with one or both of the following characteristics: (1) those with high social anxiety (greater than 1 *SD* above the mean from mass screening data), and (2) men to achieve a roughly equal distribution of men and women in the sample. As shown in Table 1, the sample was 51.4% female with a mean age of 18.32 years (*SD* = .49). The ethnic composition of the sample was 60.0% Caucasian, 13.3% Hispanic/Latino, 6.7% Mixed, 3.8% African American, 1.0% Asian, 1.0% Other, and 14.3% did not report their ethnicity.

Measures

Demographic questionnaire. Participants reported their age, gender, ethnicity, and year in school.

Beck Depression Inventory, 2nd edition (BDI-II; (Beck, Steer, & Brown, 1996)). Participants reported their degree of current depressive symptoms. The BDI-II controls for any depressive symptoms due to the comorbidity of SAD and depression. The BDI scale has high internal consistency, reliability, and validity (Beck, et al., 1996).

Social Interaction Anxiety Scale (SIAS; (Mattick & Clarke, 1997)). This 19 item questionnaire measures fear of social interactions on a scale of 0 (not at all) to 4 (extremely). This scale has excellent psychometric properties ($\alpha = .94$; test-retest reliability = .92 over 4 weeks and 12 weeks).

Positive and Negative Affect Schedule (PANAS; (Watson, Clark, & Tellegen, 1988)). This 20 item questionnaire measures the current degree of positive and negative affect on a scale from 1 (not at all) to 5 (extremely). Participants completed the PANAS at two time points. The first PANAS (pre-comparison) was administered when participants arrived for the study. The second PANAS (post-comparison) was given after the social comparison manipulation to measure the emotions the task elicited.

State-Trait Anxiety Inventory-State (STAI-S, (Spielberger, 1983)). Participants reported their current anxiety on a scale of 1 (not at all) to 4 (very much so). The STAI has sound

psychometric properties (Knight, Waal-Manning, & Spears, 1983). The STAI-S will be administered before and after the comparison manipulation to measure any change in anxiety.

Social Activity Survey (SAS; (Watson, Clark, McIntyre, & Hamaker, 1992)). Participants reported the frequency of and interest in various social activities and interpersonal behaviors they performed in the past week (e.g., exercising and going to a movie). The SAS was included to increase the believability about the nature of the study.

Iowa-Netherlands Comparison Orientation Measure (INCOM; (Gibbons & Buunk, 1999)). This questionnaire measures the tendency to generally engage in social comparison. Items are rated on a scale from 1 (strongly disagree) to 5 (strongly agree). The INCOM has sound psychometric properties. Total scores on the measure were used to test the hypothesis that trait social comparison orientation mediated the relationship between social anxiety and negative self-appraisal.

Self-appraisal assessment (Wilson & Rapee, 2006). Participants rated the extent to which 30 words (14 positive words, 16 negative words) described themselves at that moment on a scale from 0 (much less than average) to 6 (much more than average). Participants completed this assessment before and after the social comparison manipulation.

Visual analogue scale of social comparison. Participants drew a tickmark on a line representing where they felt they stood in relation to another FSU student on 14 dimensions (see (Antony, et al., 2005)) after they read about them. We were interested in participants' ratings of themselves as compared to the student they read about on the following dimensions: personality, social skills, signs of anxiety, intelligence, and overall/general. The overall dimension was not included in Antony et al. (Antony, et al., 2005). It was important to include in this study because it adds to the information already collected from the more specific dimensions. The midpoint of the line was labeled with "FSU student you read about". The placement of the tickmark indicated the direction of the social comparison. If the tickmark was to the left of the midpoint, then participants reported feeling worse on the dimension than the student as they read about him/her (i.e., upward comparison). If the tickmark was to the right of the midpoint, then participants reported feeling better on the dimension than the student as they read about him/her (i.e., downward comparison). The distance of the tickmark from the midpoint indicated the degree of the social comparison. This measure was used to test several mediational models: (1) that upward comparisons mediated the relationship between the social comparison manipulation and

negative affect and/or negative self-appraisal; (2) that upward comparisons mediated the relationship between social anxiety and negative self-appraisal; and (3) that trait social comparison partially mediated the relationship between social anxiety and negative self-appraisal

Preference rating for behavioral task (Maner, DeWall, Baumeister, & Schaller, 2007).

This questionnaire assessed participants' desire for social interaction after reading about a fellow student's adjustment to college. Participants reported the degree to which they preferred writing down their thoughts and feedback in a room by themselves as well as being interviewed by a student liaison who would write down their thoughts and feedback. The purpose of the task was to provide a behavior-like measure of social anxiety after the social comparison manipulation. The rating scale ranged from 0 (not at all) to 11 (extremely).

General impressions of the study. Participants completed a debriefing form that asked for their thoughts about the study. This measure asks questions to determine if the social comparison manipulation worked and for suspicion about the believability and purpose of the study.

Design

The present study used a mixed-factorial design. We used a between-subjects design to examine differences between the conditions on the direction of the social comparison (upward or same level). As shown in Figure 1, participants were randomly assigned either to the UC or SLC condition. For each condition, we used a within-subjects design to measure changes in the dependent variables before and after the social comparison manipulation. The independent variables were condition (UC or SLC) and social anxiety (high or low). The dependent variables were negative affect, anxiety, and negative self-appraisal. Because none of the participants guessed the true purpose of the study, all participants were included in the main analyses.

Procedure

When participants arrived at the lab, they were greeted by an experimenter and taken to a room where the experimenter introduced the study. Participants were told that we were interested in how they perceived themselves vs how they perceived other students' adjustment to college. Specifically, they were told we were interested in examining how a variety of personality factors may impact their experience. Participants were told that they would complete various tasks, including filling out questionnaires. After signing the informed consent form, participants completed a baseline assessment of self-report measures.

After filling out the self-report measures, participants were randomly assigned to one of two social comparison conditions (UC or SLC). Participants in each condition read a sex-matched bogus student profile for 5 minutes. This profile was ostensibly written by a fellow FSU freshman about his/her first year experience. The profile included details about the student and his/her adjustment to college, such as name, age, hometown, major, grade point average, activities, hobbies, and plans after graduation (see Appendices B and C).

After five minutes, participants completed the self-evaluation measure, followed by another packet of self-report questionnaires (post-comparison), which assessed their current thoughts and emotions.

Next, participants were asked to answer questions about how FSU could improve the adjustment to college. Participants could either write down their answers in a room by themselves or have a “student liaison to the university administration” interview them. They rated their preference for which option they would like. They were told that the experimenter would consider this as well as availability when deciding which option the participant would complete. In actuality, participants did not complete this task. Next participants completed a form about their general impressions of the study.

After completing the general impressions form, participants were debriefed, thanked, and dismissed.

RESULTS

Preliminary analyses

Chi square tests indicated that there were no significant differences between the conditions on gender ($\chi^2(1, N = 105) = 2.81, p = .09$) or race/ethnicity ($\chi^2(5, N = 90) = 9.52, p = .09$). One way analysis of variance indicated that there were no significant differences between the conditions on social anxiety ($F(1, 92) = .28, p = .60$). As shown in Table 1, the internal consistency of the questionnaires, except for the self-appraisal assessment at both time points, ranged from adequate to excellent.

We examined for the presence of outliers on all study variables. There were outliers only on baseline and post-manipulation negative affect. We moved the outliers to the upper or lower criterion (i.e., median \pm 2 interquartile ranges). Furthermore, the skewness and kurtosis for each of these variables was within the accepted range (\pm 2).

Manipulation check

Findings from the general impressions questionnaire provided a manipulation check. Participants reported comparing themselves somewhat ($M = 5.77, SD = 1.89$; range = 1-9) to the student they read about during the manipulation. These results suggest that the manipulation was moderate in eliciting social comparisons. Because of gender differences following upward comparisons in Antony et al. (2005), we examined if there were gender differences in the degree of social comparison elicited in the present study. Linear regression indicated that women ($M = 6.15$) compared themselves to the student they read about significantly more than men ($M = 5.36$) did ($b = -3.60, F(1, 102) = 5.17, p = .03, \text{partial } r^2 = .05$). In addition, we examined if there were gender differences in trait social comparison orientation, an alternative measure of social comparison. Women ($M = 6.44$) engaged in social comparison significantly more often than men ($M = 5.44$) ($b = -1.00, F(1, 102) = 7.91, p = .006, \text{partial } r^2 = .07$). Because women compare themselves to others more than men, it suggests the possibility that women may be more likely to show the predicted effects from a social comparison manipulation than men.

Primary analyses

Hierarchical linear regressions were used to test the first three hypotheses. This also allowed us to check if the manipulation elicited the intended emotional responses. We examined if there were main effects and interactions of social anxiety and condition on change in negative affect, state anxiety, and negative self-appraisal from the manipulation. Depression was entered

in the first step, the centered main effects of social anxiety and condition in the second step, and the interaction of the centered main effects in the third step. There was a marginally significant main effect of social anxiety on change in negative affect ($b = -.03$, $F(1, 86) = 2.94$, $p = .09$, partial $r^2 = .03$). Higher social anxiety was slightly associated with less decrease in negative affect. There was no significant main effect of condition ($p = .57$). The manipulation failed to increase negative affect. Furthermore, there was no significant interaction of social anxiety and condition on change in negative affect ($p = .16$).

Similar hierarchical regressions were constructed to examine change in state anxiety and negative self-appraisal from the manipulation. Inconsistent with predictions, there were no significant main effects or interactions found for change in state anxiety or negative self-appraisal from the manipulation ($ps > .34$).

Primary analyses without controlling for depression

As discussed earlier, most of the previous research on social comparison has examined it in the context of depression. Given the high comorbidity of social anxiety and depression, we examined if the null results in the previous analyses were explained by depression. We reran the previous analyses without controlling for depression. There were no significant main effects or interaction for change in negative affect ($ps > .13$). For change in state anxiety, there was a marginally significant main effect of social anxiety ($b = .01$, $F(1, 86) = 3.08$, $p = .09$, partial $r^2 = .03$). Greater social anxiety was marginally associated with greater change in state anxiety. There were no other significant main effects or interaction for change in state anxiety ($ps > .43$). For change in negative self-evaluation, there was a main effect of social anxiety ($b = .06$, $F(1, 87) = 2.98$, $p = .09$, partial $r^2 = .03$). Higher social anxiety was slightly associated with greater negative self-evaluation. No other significant main effects or interactions for change in negative self-appraisal emerged ($ps > .79$).

Exploratory analyses: Gender as a moderator of condition and social anxiety on change in negative affect, state anxiety, and negative self-appraisal.

The gender differences in emotional responses to upward comparisons in Antony et al. (2005) suggest that gender may have been a factor in change in emotional responses from the manipulation in the present study. We conducted exploratory analyses to examine if gender obscured changes in negative affect, state anxiety, and negative self-appraisal. We tested for a three way interaction of social anxiety, condition, and gender on those variables. Using

hierarchical linear regression, depression was entered in the first step, the centered main effects of social anxiety, condition, and gender in the second step, all possible two way interactions of the centered main effects in the third step, and the three way interaction of the centered main effects in the fourth step. No significant main effects or interactions emerged for change in negative affect ($ps > .11$).

Similar three way interactions were constructed to examine change in state anxiety and negative self-appraisal. For change in state anxiety, there was a significant main effect of gender ($b = 2.13, F(1, 82) = 3.92, p = .05, \text{partial } r^2 = .05$), but no main effects of condition or social anxiety ($ps > .22$). Men (relative to women) tended to report greater change in state anxiety from the manipulation. There were no significant two way interactions ($ps > .51$). However, there was a marginal three way interaction of social anxiety, condition, and gender on change in state anxiety ($b = .31, F(1, 82) = 3.47, p = .07, \text{partial } r^2 = .04$).

To interpret this three way interaction, we probed the two way interaction of social anxiety and condition among men and women. Among men, no significant main effects or interaction were found ($ps > .37$). Among women, although there were no significant main effects ($ps > .22$), the interaction of social anxiety and condition trended toward significance ($p = .09$) (see Figure 2).

For change in negative self-appraisal, no significant main effects or interactions were found ($ps > .18$).

Taken together, the previous results suggest that the manipulation was not strong enough to elicit change in negative affect, state anxiety, or negative self-appraisal. Higher social anxiety was associated with a smaller decrease in negative affect. However, neither condition appeared to impact change in state anxiety or negative self-appraisal. Further analyses suggested that while gender did not obscure the results for change in negative affect or negative self-appraisal for the entire sample, it may have obscured the result for change in state anxiety among women. Finally, depression accounted for marginal changes in state anxiety and negative self-appraisal for those with higher social anxiety.

Behavioral measures of social anxiety

Hierarchical linear regressions were used to test the fourth hypothesis. We assessed their desire for social interaction after the manipulation by asking their preference to work with a partner as well as to work alone. We predicted interactions of social anxiety and condition on

preferences to work with a partner as well as on preferences to work alone after the manipulation. There was a main effect of social anxiety on desire to work with a partner ($b = -.06$, $F(1, 88) = 3.75$, $p = .05$, partial $r^2 = .04$). Greater social anxiety was associated with less desire to work with a partner. However, there was no significant main effect of condition or interaction of social anxiety and condition in preferences to work with a partner ($ps > .36$). No main effects of social anxiety or condition or interaction of these two variables were found for desire to work alone ($ps > .38$). Thus, there was partial support for our hypothesis that greater social anxiety would be associated with a decreased preference to work with a partner following the manipulation.

Behavioral measures without controlling for depression.

We reran the previous analyses to determine if depression explained the null results. Similar hierarchical regressions were constructed. There was a significant main effect of social anxiety on preference to work with a partner after the manipulation ($b = -.05$, $F(1, 89) = 3.96$, $p = .05$, partial $r^2 = .04$). Higher social anxiety was associated with decreased preference to work with a partner. No other significant effects were found ($ps > .36$). There were no main effects or interaction for preference to work alone after the manipulation ($ps > .26$).

Exploratory analyses: Gender as a moderator of desire for social interaction after the manipulation.

Preliminary findings from Antony et al. (2005) and the present study suggest that there may be gender differences in emotional responses from social comparisons. If emotional responses from social comparison depend upon gender, the emotions elicited may influence subsequent behavioral preferences. Thus there may be gender differences in desire for social interaction after the manipulation. We examined if gender obscured the effects of condition on desire to work alone and with a partner. First, we tested for a three way interaction of social anxiety, condition, and gender on preference to work with a partner after the manipulation. We entered depression in the first step, the centered main effects of social anxiety, condition, and gender in the second step, all possible two way interactions of the centered main effects in the third step, and the three way interaction of the centered main effects in the final step in the hierarchical linear regression. There was a significant main effect of social anxiety ($b = -.06$, $F(1, 84) = 4.08$, $p = .05$, partial $r^2 = .05$) and a marginal main effect of gender ($b = 1.30$, $F(1, 84) = 3.69$, $p = .06$, partial $r^2 = .04$). Higher social anxiety was associated with less desire to work

with a partner. However, men tended to have a higher preference to work with a partner. No other significant effects were found from this analysis ($ps > .14$).

Second, we tested for the same three way interaction on preference to work alone after the manipulation. Hierarchical linear regression indicated that there was a marginal main effect of gender on desire to work alone after the manipulation ($b = -1.16$, $F(1, 84) = 3.41$, $p = .07$, partial $r^2 = .04$). Women tended to have a slightly higher preference to work alone. There were no other main effects ($ps > .35$). The marginal main effect of gender was qualified by a significant interaction of condition and gender ($b = -2.86$, $F(1, 84) = 5.36$, $p = .02$, partial $r^2 = .06$). To interpret this two way interaction, we assessed the simple effects of condition among men and women. Among men, there was no association between condition and desire to work alone after the manipulation ($p = .17$). Among women, there was a marginally significant association between condition and desire to work alone ($b = 1.48$, $F(1, 84) = 3.02$, $p = .09$, partial $r^2 = .03$). Women in the UC condition (relative to women in the SLC condition) tended to have a slightly higher preference to work alone (see Figure 3).

Exploratory analyses not controlling for depression.

We reran the previous analyses not controlling for depression. There were marginally significant main effects of social anxiety ($b = -.05$, $F(1, 85) = 3.55$, $p = .06$, partial $r^2 = .04$) and gender ($b = 1.17$, $F(1, 85) = 3.23$, $p = .08$, partial $r^2 = .04$) on preference to work with a partner after the manipulation. Higher social anxiety was associated with decreased preference to work with a partner, whereas men slightly tended to prefer to work with a partner. There were no other significant main effects or interactions for preference to work with a partner ($ps > .13$). There was a marginal main effect of gender on preference to work alone after the manipulation ($b = -1.11$, $F(1, 85) = 3.33$, $p = .07$, partial $r^2 = .04$). Men slightly tended to have decreased preference to work alone after the manipulation. This result was qualified by a significant two way interaction of condition and gender ($b = -2.79$, $F(1, 85) = 5.29$, $p = .02$, partial $r^2 = .06$), as well as a significant three way interaction of social anxiety, condition, and gender ($b = -.20$, $F(1, 85) = 4.08$, $p = .05$, partial $r^2 = .05$).

To decompose the three way interaction, we examined the two way interaction of social anxiety and condition among men and women. Among women, there were no significant main effects or interaction ($ps > .10$). Among men, there was a marginally significant two way interaction of social anxiety and condition ($b = -.12$, $F(1, 39) = 4.08$, $p = .06$, partial $r^2 = .09$).

Then, we examined the simple effects of condition at high (1 SD above) and low (1 SD below) levels of social anxiety among men. Among men with high levels of social anxiety, the UC condition was significantly associated with lower preference to work alone ($b = -2.99$, $F(1, 39) = 6.28$, $p = .02$, partial $r^2 = .14$). In contrast, among men with low levels of social anxiety, there was no significant association between condition and preference to work alone ($p = .82$).

To decompose the two way interaction of condition and gender, we examined the simple effects of condition among men and women. Among men, the UC condition was marginally associated with lower preference to work alone ($b = -1.53$, $F(1, 100) = 3.18$, $p = .08$, partial $r^2 = .03$).

Among women, the UC condition was marginally associated with greater preference to work alone ($b = 1.52$, $F(1, 100) = 3.38$, $p = .07$, partial $r^2 = .03$).

Although the manipulation did not elicit the predicted preferences for social interaction with the whole sample, results suggest that the manipulation may have been somewhat successful with women's preferences for social interaction. Women in the UC condition preferred to work alone slightly more than women in the SLC condition after the manipulation.

Other analyses

Because our results suggest that the manipulation was not strong enough, we were interested in examining responses to measures related to social comparison to determine if the results were consistent with findings from the previous analyses.

Trait social comparison orientation as a mediator of the relationship between social anxiety and negative self-appraisal.

Given that the manipulation did not elicit greater negative self-appraisal as predicted, we did not test the hypothesis that trait social comparison orientation mediated the relationship between social anxiety and negative self-appraisal.

Dimensions of the visual analog scales.

We conducted exploratory analyses with ratings for several dimensions of the visual analog scales to determine if we replicated the effects from Antony et al. (2005). We examined participants' ratings of their personality, social skills, signs of anxiety, and intelligence as compared to the student they read about after the social comparison manipulation. That is, we examined where participants rated themselves on each dimension relative to the student they read about. These were the dimensions in which participants with SAD relative to nonclinical controls significantly differed in Antony et al. (2005). This was assessed by measuring the

distance of the tickmark from the midpoint of the line. The midpoint of the line was where the student they read about stood on each dimension. The distances on the dimensions of personality, social skills, and intelligence could be negative, (i.e., were worse/poorer than the student they read about) or positive (i.e., were better than the student they read about), and vice versa for signs of anxiety. All of the regression analyses controlled for depression. Depression was entered in the first step, the centered main effects of personality and condition in the second step, and the interaction of the centered main effects in the third step. Consistent with Antony et al. (2005), hierarchical linear regression indicated that there was a main effects of social anxiety on ratings of personality ($b = -.02$, $F(1, 87) = 6.00$, $p = .02$, partial $r^2 = .06$). Higher social anxiety was associated with poorer ratings of personality than the student they read about. There was no main effect of condition or interaction of social anxiety and condition on personality ratings ($ps > .12$).

Similar hierarchical regressions were also conducted for participants' ratings of their social skills, intelligence, signs of anxiety, and overall perception of themselves as compared to the student they read about. There was a main effect of social anxiety on ratings of social skills ($b = -.23$, $F(1, 87) = 50.36$, $p < .001$, partial $r^2 = .37$), but no main effect of condition or interaction of social anxiety and condition on ratings of social skills ($ps > .12$). Higher social anxiety was associated with poorer ratings of social skills than the fellow student they read about. There were no main effects or interaction of social anxiety and condition on signs of anxiety ($ps > .12$). There was a main effect of condition on ratings of intelligence ($b = -2.39$, $F(1, 85) = 13.18$, $p < .001$, partial $r^2 = .13$), but no main effect of social anxiety or interaction of social anxiety and condition on ratings of intelligence ($p > .63$). The UC condition produced lower ratings of intelligence than the SLC condition. Finally, there were main effects of social anxiety and condition on participants' overall perception of themselves compared to the student they read about ($b = -.11$, $F(1, 86) = 18.81$, $p < .001$, partial $r^2 = .18$, $b = -1.93$, $F(1, 86) = 10.29$, $p = .002$, partial $r^2 = .11$, respectively). Greater social anxiety was associated with poorer overall perception of oneself. In addition, those in the UC condition reported poorer overall perceptions of themselves relative to the student they read about. These main effects were qualified by an interaction of social anxiety and condition that trended toward significance ($b = .09$, $F(1, 86) = 3.00$, $p = .09$, partial $r^2 = .03$) (see Figure 4).

To interpret this interaction, we assessed the simple effects of condition at high (1 SD above) and low (1 SD below) levels of social anxiety. At high levels of social anxiety, there was

no association between condition and overall rating ($p = .32$). At low levels of social anxiety, individuals in the UC condition reported significantly poorer overall perceptions of themselves as compared to the student they read about ($b = -2.99$, $F(1, 86) = 12.28$, $p = .001$, partial $r^2 = .12$). Although there were no significant differences in the overall rating among individuals with high social anxiety between the conditions, it is still worth noting that individuals with high social anxiety in the UC condition had the lowest overall rating. If the manipulation had been stronger, it would be interesting to see if the conditions significantly differed among individuals with high social anxiety.

However, a floor effect may explain why individuals with high social anxiety did not significantly differ between conditions on the overall rating. Individuals with high social anxiety in the SLC condition had a very low overall rating already, nearing the lower limit of the range. Regardless of how strong the effect from the UC condition was, it might not have been able to produce a significantly lower overall rating among individuals with high social anxiety. This would suggest that individuals with high social anxiety may perceive themselves very poorly as compared to how they perceive others, independent of whether they compare themselves to someone who is similar or better than them with respect to their skills or abilities.

DISCUSSION

The purpose of the present study was to examine the consequences of experimentally manipulating social comparison processes in individuals with high or low social anxiety. Although participants with SAD showed significant changes in affect from social comparisons in Antony et al. (2005), it was unclear if individuals with high and low social anxiety would show similar effects. Furthermore, emotional responses to upward comparisons differed by gender in spite of a significant difference in gender distribution between the groups (Antony, et al., 2005). Because our analog sample contained a roughly equal percentage of men and women, we wanted to see if gender remained an important factor in the responses elicited from the social comparison manipulation.

Several factors may have contributed to the failure of the manipulation. First, the manipulation may have failed because of how we targeted social comparison. Participants were not directly instructed to compare how their adjustment to college went relative to that of the fellow student's adjustment. They merely read about another student's adjustment to college. Reading about another student's adjustment implicitly addresses social comparison, whereas recording every social comparison that occurs in a diary explicitly addresses these processes. We used an implicit method to manipulate social comparison because it was thought to be more representative of how social comparisons may arise in daily life than the explicit methods that previous social comparison studies have used. Implicit methods of inducing social comparison may not be as robust as more explicit methods, such as using diaries like Antony et al. (2005) did. This may be one reason why we only partially replicated the results from Antony et al. (2005). If responses elicited through implicit methods of social comparison are weaker or more transient, external factors may be able to alter them more easily. It is possible that the manipulation elicited greater negative affect, state anxiety, and/or negative self-appraisal as participants read over the fellow student's profile, but the effects were not long-lasting. With explicit methods of targeting social comparison processes, participants may more easily detect their emotions and fluctuations in them because the manipulation may produce more intense and/or longer responses that are less prone to change.

A related alternative explanation is that the social comparisons that were elicited may not have been distressing or bothersome. The information given in the profiles was based on

dimensions in which participants with SAD and nonclinical controls compared themselves (Antony, et al., 2005) and thus was thought to be the most relevant to include in the profiles.

Second, the manipulation may have failed because its effects may depend upon the situation in which the social comparison is made. Specifically, the effects may depend upon whether the target comparison individual is present (i.e., participant sees or interacts with the target person) or is imagined (i.e., individual thinks about the target comparison person). Nearly 50% of social comparisons reported in previous studies were in the context of social situations, whereas about 20% reported were when participants thought about another person (Antony, et al., 2005; Wheeler & Miyake, 1992). Although we attempted to address this concern in several ways to increase the likelihood of eliciting social comparison processes, the manipulation was not successful and may be why we only partially replicated the effects of Antony et al. (2005). The significant effects in Antony et al. (2005) may have been driven by social comparisons that occurred when participants saw or interacted with the target comparison person.

Third, we may have obtained null findings because the social comparison manipulation may have impacted self-enhancement. Self-enhancement is one motive for engaging in social comparison. Reading about a fellow student who appeared to adjust normally or extremely well to college may have motivated participants to strive for similar outcomes. The task may have improved their perception of their own adjustment to college. This presumes that participants felt that the student they read about was similar to them and could relate to them. In this case, participants would likely show no change or a decrease in negative affect from the manipulation. As shown in Table 2, negative affect and negative self-appraisal decreased across conditions. State anxiety did not follow this pattern. The SLC condition decreased state anxiety, whereas the UC condition increased state anxiety. But these changes were not statistically significant. Findings from the present study suggest that self-enhancement may have occurred as a result of the manipulation.

Although we failed to support our hypotheses, results suggest that the manipulation affected women more than men. Given that women reported a significantly greater tendency to compare themselves with others than men, their familiarity with these processes may have influenced their responses to the manipulation. Whereas women may show the effects regardless of whether targeting social comparison processes implicitly or explicitly, men may show the effects mostly when targeting social comparison explicitly. Furthermore, women in the UC

condition had higher preference ratings to work alone. This further suggests that the manipulation influenced women more than men. The preference to work alone following an upward comparison may depend more on gender than social anxiety. Taken together, familiarity with engaging in social comparison processes may have obscured the effects in the present study.

We partially replicated the results from Antony et al. (2005) in regards to the various dimensions participants compared themselves to the student they read about. Participants with high social anxiety perceived their personality and social skills as poorer than the student they read about. However, we did not replicate their effects for signs of anxiety or intelligence. Only the effects for personality and social skills may have replicated because they may be the most common dimensions individuals with high social anxiety or SAD compare themselves with others. Indeed, personality and social skills were the top two dimensions in which participants with SAD compared themselves to others in Antony et al. (2005). Among individuals with SAD, 49% of their comparisons were in regards to personality and 38% of their comparisons were in regards to social skills. Yet, the signs of anxiety and intelligence dimensions fell in the middle of the range. Results from both studies suggest that the effects for these dimensions are weaker.

Overall, the results from Antony et al. (2005) and the present study suggest that research on social comparison in anxiety is at an early stage. Social comparison may be better studied initially through ecological momentary assessment studies, which explicitly target social comparison processes. Once we have greater understanding regarding the underlying mechanisms of social comparison in social anxiety, then applying this knowledge to create experimental paradigms to measure social comparison may yield stronger effects.

The present study had several limitations. First, the sample consisted of individuals with high or low social anxiety, whereas Antony et al. (2005) used a clinical sample. Robust effects for social comparison processes may only be observed in clinical samples and not analog samples, which may be a reason why we failed to support our hypotheses. Second, we did not assess the extent to which participants engaged in social comparison processes versus counterfactual thinking. Counterfactual thinking refers to comparing oneself to an alternative self. These thoughts target ideas of how the situation might have been gone better had the person done or not done something. A person with high social anxiety may think, “If only I hadn’t stuttered so much as I talked to the other person, I would have done better”.

The results of the present study have implications for future research on social anxiety. First, future research should examine the extent to which individuals with high social anxiety engage in social comparison thinking versus counterfactual thinking. Second, recent research suggests that post-event processing may be a key component in maintaining social anxiety disorder (Brozovich & Heimberg, 2008). It is possible that social comparison or counterfactual thoughts may occur during post-event processing. For instance, individuals with high social anxiety reported more upward counterfactual thoughts during post-event processing than individuals with low social anxiety (Kocovski, Endler, Rector, & Flett, 2005).

Although more research is necessary, findings from the present study combined with those from Antony et al. (2005) could have treatment implications for individuals with SAD. Targeting thoughts that focus on social comparison or the occurrence of such thoughts may help decrease anxiety in individuals with SAD.

APPENDIX A

TABLE 1

Descriptive statistics, zero-order correlations, and internal consistency of the study variables.

| | <i>M(SD) / %</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | α |
|------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-----|---|----------|
| Gender | 51.4% Female | | | | | | | | | | |
| Age | 18.32 (.49) | | | | | | | | | | |
| Ethnicity | 60% Caucasian | | | | | | | | | | |
| 1. SIAS | 22.86 (12.72) | - | | | | | | | | | .94 |
| 2. BDI | 9.28 (7.43) | .45** | - | | | | | | | | .89 |
| 3. STAI-S time 1 | 46.02 (9.43) | .41** | .65** | - | | | | | | | .90 |
| 4. STAI-S time 2 | 46.10 (10.40) | .46** | .70** | .88** | - | | | | | | .92 |
| 5. NA time 1 | 13.67 (4.07) | .35** | .56** | .64** | .67** | - | | | | | .80 |
| 6. NA time 2 | 13.27 (4.67) | .30** | .61** | .63** | .73** | .83** | - | | | | .86 |
| 7. Negative SER time 1 | 1.92 (.71) | .34** | .42** | .25* | .26* | .35** | .25* | - | | | .77 |
| 8. Negative SER time 2 | 1.45 (.75) | .44** | .50** | .24* | .25* | .33** | .28** | .81** | - | | .59 |
| 9. INCOM | 38.21 (7.98) | .28** | .32** | .25* | .25* | .10 | .13 | .04 | .13 | - | .85 |

Note: SIAS = Social Interaction Anxiety Scale; BDI = Beck Depression Inventory, 2nd edition; STAI-S = State-Trait Anxiety Inventory – State; NA = Negative Affect subscale of the Positive Affect and Negative Affect Scale; Negative SER = Negative self-appraisal; INCOM = Iowa-Netherlands Comparison Orientation Measure; α = internal consistency of the measure.

* $p < .05$; ** $p < .01$

APPENDIX B

SAME LEVEL COMPARISON CONDITION PROFILE

Name: Mike / Ashley
Year: Freshman
Age: 19
Hometown: Tallahassee, Florida
Number of siblings: 1
Major: Psychology
GPA: 3.5
Activities: First-Year Experience (FYE), Dance Marathon
Hobbies: Volunteering, working out, watching FSU football
Other activities: Hanging out with friends in the dorm or other place on campus, watching movies, going to football games, going to bars or clubs with friends (like Floyd's, Yanni's, or Potbelly's), going to Crenshaw Lanes to go bowling, going to Club DownUnder for concerts, going to Momo's or other dining place on campus for food, ordering pizza at midnight with friends.
Plans after graduation: Get a job or go to graduate school

APPENDIX C

UPWARD COMPARISON CONDITION PROFILE

Name: Mike / Ashley
Year: Freshman
Age: 19
Hometown: Tallahassee, Florida
Number of siblings: 1
Major: Psychology
GPA: 4.0
Awards/Honors: President's List, Phi Eta Sigma Member, National Society of Collegiate Scholars Member, Psi Chi Member
Activities: FSU Honors Program, FSU Honors Delegate, FSU Undergraduate Studies Senate Committee, First-Year Experience (FYE), Dance Marathon
Hobbies: Volunteering, working out, watching FSU football
Other activities: Hanging out with friends in the dorm or other places on campus, watching movies, going to football games, going to bars or clubs with friends (like Floyd's, Yanni's, or Potbelly's), going to Crenshaw Lanes to go bowling, going to Club DownUnder for concerts, going to Momo's or other dining place on campus for food, ordering pizza at midnight with friends.
Plans after graduation: Get a job or go to graduate school

APPENDIX D

TABLE 2

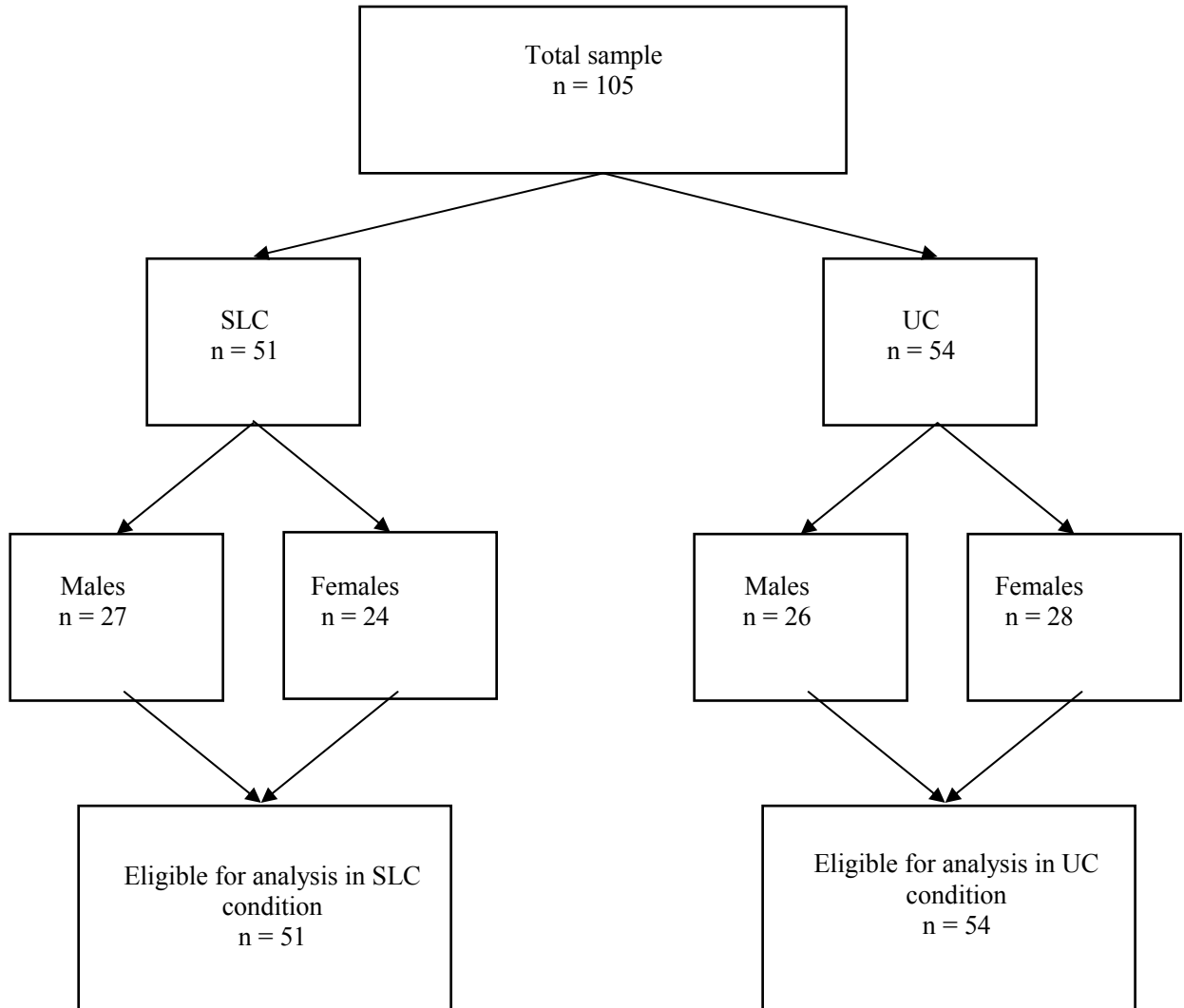
Descriptive statistics of the dependent variables before and after the social comparison manipulation by condition.

| | Same level comparison | Upward comparison |
|--------------|-----------------------|--------------------|
| | Mean (<i>SD</i>) | Mean (<i>SD</i>) |
| NA | | |
| Time 1 | 13.0 (3.3) | 13.8 (3.4) |
| Time 2 | 12.4 (3.2) | 13.0 (3.0) |
| STAI-S | | |
| Time 1 | 45.4 (10.3) | 46.7 (8.5) |
| Time 2 | 44.9 (10.9) | 47.4 (9.5) |
| Negative SER | | |
| Time 1 | 1.9 (.7) | 2.0 (.7) |
| Time 2 | 1.4 (.8) | 1.5 (.7) |

Note: NA = Negative affect; Time 1 = pre-comparison; Time 2 = post-comparison; STAI-S = State-Trait Anxiety Inventory – State; Negative SER = Negative self-appraisal.

APPENDIX E

FIGURE 1

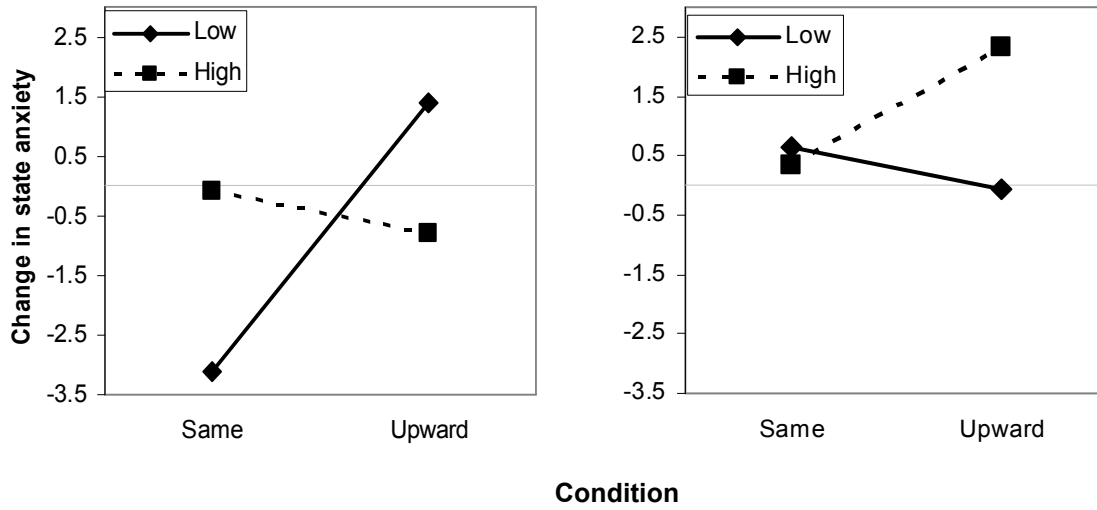


Participant assignment in the study.

Note: SLC = Same-level comparison condition; UC = Upward comparison condition.

APPENDIX F

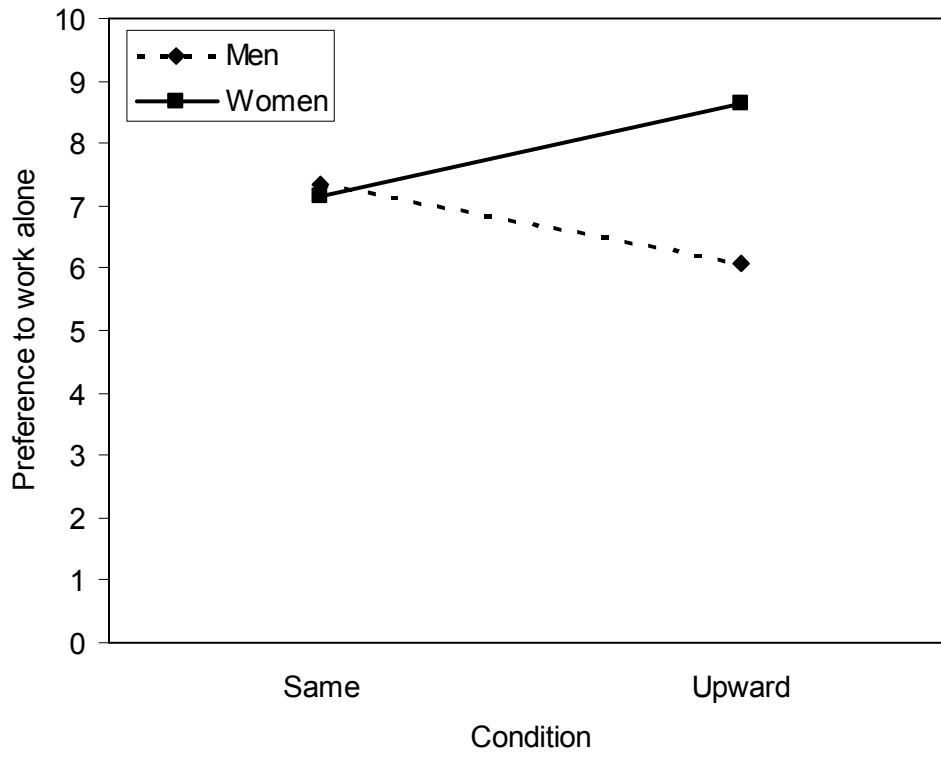
FIGURE 2



Interaction of social anxiety and condition on change in state anxiety by gender.

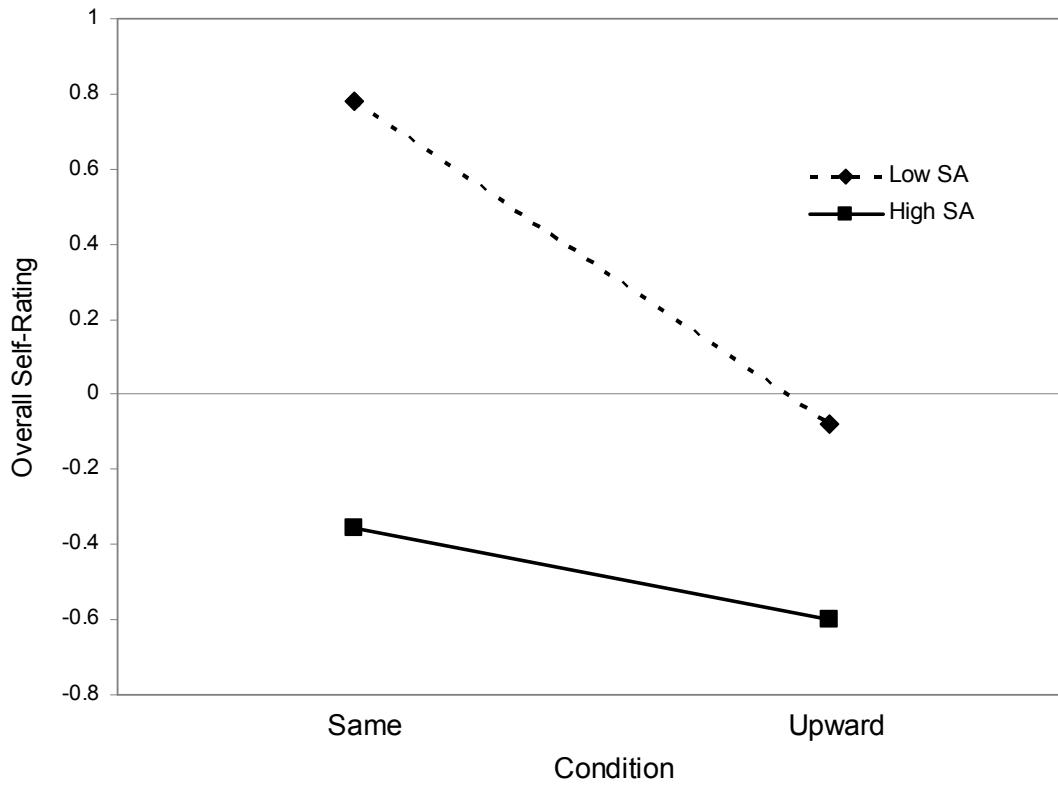
APPENDIX G

FIGURE 3



Interaction of condition and gender on preference to work alone.

APPENDIX H
FIGURE 4



Interaction of social anxiety and condition on overall self-rating.

APPENDIX I

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 • FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 9/10/2009

To: Melissa Mitchell [mitchell@psy.fsu.edu]

Address: 4301
Dept.: PSYCHOLOGY DEPARTMENT

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Personality and College Student Experiences

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 9/8/2010, you are must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: Norman Schmidt, Advisor [schmidt@psy.fsu.edu]
HSC No. 2009.3026

APPENDIX J

SAMPLE INFORMED CONSENT FORM

| |
|--|
| <p style="text-align: center;">INFORMED CONSENT FORM <i>STUDY OF PERSONALITY AND COLLEGE STUDENT EXPERIENCES</i></p> |
|--|

I, _____, being 18 years of age or older, freely and voluntarily and without undue inducement or any element of force, fraud, deceit, duress, or other form of constraint or coercion, consent to be a participant in the above named research project, to be conducted at the Florida State University by Melissa Mitchell, a graduate student in psychology, and Dr. Brad Schmidt, Ph.D., Professor of Psychology. Listed below are the procedures to be followed in this research and their purposes, any risks, discomfort, and benefits associated with participation in this study, and the measures which will be taken to ensure confidentiality of the information obtained.

Procedures for the research: I understand that the purpose of this project is to better understand college student experiences and how various personality factors may influence the undergraduate experience.

I understand that if I participate in the project, I will be asked to fill out questionnaires about my current mood, thoughts, and beliefs. If I should reveal that I am a threat either to myself or others, I understand that the experimenter will approach me to ensure my safety and may provide me with referral information. I understand that if I participate, the experiment will involve completing self-report questionnaires and a task. Although I can expect to experience a moderate degree of anxiety, this study involves no known risks to my health or well-being. I understand that I will be asked to participate in this experiment for one session, which will require one trip to the laboratory. The total time commitment will be approximately one hour. I will be compensated by receiving one (1) research credit for my time.

Potential risks or discomforts: I understand there is minimal risk involved in this study, although some individuals may be uncomfortable describing their current mood, thoughts, and beliefs. I understand I may experience some anxiety and frustration in anticipation and during the experimental procedures. However, such situations should not be any more anxiety-provoking than situations commonly experienced in day-to-day life. The research assistant will be available to talk with me about any discomfort I may experience while participating. I have the right to refuse or discontinue participation at any time. If I decide to stop participation, I will still be entitled to the one (1) research credit for my time.

Potential benefits to you or others: I have not been given any guarantee that I will benefit from my participation in this study. I may derive benefit from the self-assessment as it may increase my awareness of my fears and phobias. I will also be provided referrals to appropriate clinical services (e.g., FSU Psychology Clinic, FSU Counseling Center) if I would like to seek treatment. I may also develop a better understanding of research methodology and will be providing researchers with valuable insight.

Anonymity: I understand my participation is totally voluntary and I may stop participation at any time. All my answers to the questions will be kept confidential, and my confidentiality will be protected to the full extent allowed by law. My name will not appear on any of the results and only group findings will be reported. I understand that, because this is an anonymous study, the administrator will not be able to link my responses to me and initiate counseling, if needed. I may, however, inquire about referral sources if I wish, and the experimenter will be able to provide me with that information. All data will be destroyed on or before December 31, 2018.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I am otherwise entitled. I have been given the right to ask any inquiry concerning the study.

Questions, if any, have been answered to my satisfaction. I understand that I may contact Melissa Mitchell, Florida State University, Department of Psychology, (850) 645-1766, or her supervisor, Norman B. Schmidt, Ph.D., 850-644-1707, for answers to questions about this research or my rights. Group results will be sent to me upon my request. I understand that if I have any questions about my rights as a participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Vice President for the Office of Research at (850) 644-8633.

I have read and understand this consent form. By choosing freely and voluntarily to participate in the study as described here I indicate my informed consent:

(Participant Signature)

(Date)

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BIOGRAPHICAL SKETCH

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