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# Affective outcomes in superficial and intimate interactions: Roles of social anxiety and curiosity ☆

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**Abstract**

We examined the roles of trait curiosity and social anxiety (and the contributions of the behavioral inhibition and activation systems; BIS, BAS) in predicting positive and negative affect (PA; NA) during social interactions. In Study 1, individuals interacted with same-sex confederates on topics that gradually escalated in emotional self-disclosure. In Study 2, cross-sex pairs of students were randomly assigned to a closeness-generating or small-talk interaction. There were several consistent findings across studies. Higher curiosity uniquely predicted greater interpersonally generated PA. Higher social anxiety uniquely predicted greater interpersonally generated NA in Study 1, and in Study 2, this relationship varied by social context. Specifically, high compared to low socially anxious individuals reported greater NA during small-talk, with no differences during intimate interactions. Furthermore, Study 2 demonstrated that individuals with stronger BAS's experienced greater PA in the intimate compared to small-talk condition. There appear to be important traits that differentially contribute to appetitive and aversive interpersonal experiences.


*Keywords:* Social anxiety; Curiosity; Affect; Social interaction

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## 1. Introduction

Research consistently has found strong relations between positive emotions and various indices of social activity (e.g., Clark & Watson, 1988; Watson, Clark, McIntyre, & Hamaker, 1992). Yet, individuals differ in the degree intimate conversations are perceived as enjoyable, with some even considering them aversive. Despite our present state of knowledge on the basic human desire to relate to others and consistent associations between pleasant feelings and social activity, interindividual variability in the affective quality of social interactions remains poorly understood.

The primary purpose of the present set of studies was to examine individual difference predictors of interpersonally generated, high energetic arousal components of positive and negative affect, otherwise known as Positive Activation (PA) (involving feelings of excitement, enthusiasm, and inspiration) and Negative Activation (NA) (involving feelings of nervousness, irritability, and shame) (Watson & Clark, 1999).[1] Recent theorists have suggested that personality cannot be divorced from context and that social interaction and relationships provide one of the most meaningful platforms for studying "personality in context" (Cooper, 2002). In contrast to prior studies examining general social activity by self-report (e.g., Burger & Caldwell, 2000; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Watson et al., 1992) and unstructured open-ended "getting acquainted" interactions (e.g., Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992; Mellings & Alden, 2000), we were interested in theoretically derived between-person factors, social contexts, and Person × Situation interactions to predict the affective quality of dyadic social interactions. These included (1) closeness-generating interactions (i.e., gradual reciprocal sharing of emotional self-disclosures) between participants and same-sex confederates, and (2) comparisons between small-talk and closeness-generating interactions between opposite-sex participants. If individuals interacted with a confederate trained to be friendly and engaging, and took turns asking and answering questions that gradually escalated in personal self-disclosure (mimicking the process of intimacy), what personality factors would predict PA and NA? Would the same personality factors predict pleasurable affective experiences in both intimate closeness-inducing conversations and small-talk or with same-sex confederates versus opposite-sex peers? Based on prior theory and research, we were interested in individual difference variables as predictors of interpersonally generated PA and NA, as well as when these effects occur ("moderator questions that seek to identify specific conditions under which an effect can be demonstrated or will be strongest"; Cooper, 2002, p. 760).

[1] Based on the prevailing theoretical and empirical literature on affect and social activity, the present studies focus on the activated dimensions of positive and negative affectivity. We measured deactivated PA and NA states in Study 2 (using the supplemental PANAS subscales in Barrett & Russell, 1998). Upon adjusting for pre-interaction affect, the only significant finding was that curiosity was uniquely negatively related to interpersonally generated deactivated-NA (e.g., feeling bored and tired). All deactivated affect results are available upon request.

## 2. Dual-process model of optimal stimulation: anxiety and curiosity

Approach and avoidance motivations are both necessary to understand subjective reactions to novel experiences and activities. Unfamiliar experiences evoke feelings of both anxiety, due to conflicts with existing knowledge and feelings of low personal control, and curiosity, due to a natural propensity for pursuing potential rewards and personal growth opportunities (Berlyne, 1971; Kashdan & Fincham, 2004). Building on the work of Berlyne (1971, 1978), Spielberger and Starr (1994) observed that states of anxiety and curiosity are co-activated during novel and challenging activities as a function of the intensity of ongoing stimuli. The degree of novelty, complexity, uncertainty, and conflict evoked during an activity affects the intensity of an individual's anxiety and curiosity, and respective approach or avoidance behaviors. Perceiving situations as personally threatening would lead to aversive emotional experiences and in the extreme, avoidance and withdrawal, whereas perceiving the situation as an opportunity for learning would lead to pleasurable emotional experiences and approach-oriented behaviors. Spielberger and Starr (1994) propose that at low levels of stimulus intensity, curiosity or the desire to that are more novel that are more novel and exciting than the current activity dominates, at moderate levels of stimulus intensity, the combination of high curiosity and mild anxiety leads to flow-like absorption and exploration within the specific current activity, and at high levels of stimulus intensity, there is an inevitable conflict between exploratory behavior (approach) and flight (avoidance) (see Spielberger & Starr, 1994 for specific details). Engaging in complex activities is highly arousing to the individual and is more likely to coactivate appetitive and aversive emotional and behavioral responses. However, this model does not take into account *trait* curiosity and anxiety, which might elucidate how individuals react differently in seemingly similar "objective" situations.

In one of the only studies to investigate the impact of trait differences in curiosity and anxiety on interpersonal behavior (albeit in an achievement context), Peters (1978) examined the influences of curiosity, anxiety, and perceptions of instructor threat (i.e., classroom environment) on college classroom participation. Independent observers recorded self-initiated student verbal behaviors and student responses to teacher questions over the course of 8 classroom sessions. She found that students higher in trait curiosity self-initiated more verbal behaviors (i.e., asking questions); trait anxiety had no impact. There was an interaction with classroom context such that curiosity was associated with the greater tendencies to self-initiate questions with teachers who were perceived as non-threatening. As for responses to teacher questions, trait anxiety was a significant predictor that interacted with classroom context; curiosity had no impact. Specifically, both high and low anxious students were initially inhibited in responding to questions asked by threatening teachers. However, over the course of the semester, low anxious students exhibited significant increases in their responses, responding more than five times as often as their high anxious peers. Thus, low anxious students "apparently adapted to the evaluative situation" (Peters, 1978, p. 394). When teachers were perceived as non-threatening, compared to threatening, the response rates to teacher questions increased for high anxious students and decreased for low anxious students over the course of the semester. We believe that the latter findings suggest that

individuals who are hypervigilant and hyper reactive to threat cues (high social anxiety) are more likely to take advantage of autonomy supportive environments to experience the rewards and benefits of engagement. High anxious individuals required time to adapt to the novelty and challenge of the classroom environment but upon doing so, were offered a rare opportunity for appetitive social behaviors.

### *2.1. Application of the dual-process model to dyadic interactions and interpersonal affect*

Spielberger's model and Peter's supporting data suggest that curiosity and anxiety can play distinct roles in interpersonal behavior. Moreover, the perception of potential threat and reward in the environment appear to interact with dispositional anxiety and curiosity to predict subsequent behaviors. Using this theoretical framework, we were interested in examining the influences of trait curiosity and social anxiety on interpersonally generated PA and NA during interactions between strangers (an initial, essential phase in the development of relationships; Reis, Collins, & Berscheid, 2000). Additionally, we were interested in comparisons between the specific constructs of curiosity and social anxiety, which map directly onto this theoretical model, and more global dispositional sensitivities to reward and punishment cues (specifically, the Behavioral Activation and Inhibition Systems; BAS; BIS).

Although curiosity is primarily examined in achievement contexts and in relation to the need to feel competent (Deci & Ryan, 2000; Kashdan & Fincham, 2004 for reviews), we believe there is merit in studying curiosity in what might be an even more significant context, namely the development and maintenance of intimacy and interpersonal relationships (e.g., Cooper, 2002; Reis et al., 2000). The defining features of curiosity support our new substantive claims for the application of curiosity to explain intimacy development during the course of social interaction. High dispositional curiosity refers to strong appetitive motivational tendencies to seek, engage, and integrate novel and challenging experiences (Kashdan, 2004a). Individuals high in curiosity are active agents of pleasure-seeking and subsequent personal growth opportunities (Kashdan & Fincham, 2004; Kashdan, Rose, & Fincham, 2004). Curiosity is a positive emotional-motivational system that encourages an individual to explore unfamiliar and challenging activities. Given that individuals must engage in active steps to acquire information from others in order to develop relationships, curiosity has clear theoretical relevance to social behavior. Individuals high compared to low in trait curiosity can be expected to experience greater PA in conversations that provide novel information perceived as personally meaningful or challenging. Curiosity in an interpersonal context appears to evoke active listening and responding behaviors (e.g., asking questions, demonstrating common interests), including full immersion in ongoing interchanges. These behaviors serve as potential prerequisites to reciprocal self-disclosure and pleasant interactions (Davis, 1982). Increased attentiveness to the communications of others enhances the quality and enjoyment of social interactions for both partners. Individuals responding appropriately to the information of interaction partners with interest are likely to sustain conversations and increase the likelihood that others will, in turn, react with positive

responses including the desire for future encounters. The attentional style and behavior of high curious individuals are proposed to have important benefits in social situations.

We examined social anxiety as opposed to the more general trait anxiety because of the focus on interpersonal interactions in the present studies. Excessively socially anxious individuals have been shown to exhibit a general affective profile of high NA and low PA (Kashdan, 2002, 2004b; Watson, Clark, & Carey, 1988). Upon entering social situations, high socially anxious individuals generally experience a conflict between wanting to be evaluated favorably yet doubting their ability to do so (Leary & Kowalski, 1995). Cognitive processes inherent to social anxiety such as fears of negative evaluation, hypervigilance to perceived rejection by social partners, believing goals are unattainable, and tendencies to disqualify effective social performances (Rapee & Heimberg, 1997), can all be expected to interfere with the affective quality of potentially rewarding interactions. Fitting with prior work, we hypothesized that greater social anxiety would be associated with higher NA and lower PA following social interactions. However, because social anxiety has shown unique, negative relations with curiosity, even after controlling for trait anxiety (Kashdan, 2002) and depression (Kashdan, 2004b), relations between social anxiety and interpersonally generated PA is a likely function of the shared variance between social anxiety and curiosity. Thus, upon controlling for shared variance with curiosity, social anxiety was only expected to retain significant associations with greater post-interaction NA, and not PA.

We also examined the higher-order BAS and BIS—two broad biobehavioral systems thought to underlie the expression of trait PA and NA, and approach and avoidance behaviors (e.g., Carver & White, 1994; Depue, 1996; Gray, 1987). The BAS can be defined as the neurobiologically based system that directs individuals toward potentially pleasurable, novel, or exciting stimuli. As its counterpart, the BIS directs individuals away from potentially painful, anxiety-provoking, or punishing stimuli. Research has found that the BAS and BIS, respectively, moderate relations between daily events and subsequent positive and negative affective reactions (e.g., Gable, Reis, & Elliot, 2000). Prior work suggests that the BAS and BIS are relatively independent systems with specificity to pleasant and unpleasant environmental stimuli, respectively (e.g., Carver, Sutton, & Scheier, 2000).

Social anxiety and curiosity can be framed as lower-order manifestations of these systems. Positive associations have been found between behavioral inhibition and social anxiety (Turner, Beidel, & Wolff, 1996). On the other hand, curiosity may be one of the primary motivational components of the BAS, mediating relationships between rewarding stimuli and approach behaviors thereby facilitating pleasure seeking (Depue, 1996). The BIS and BAS were expected to have positive relations with interpersonally generated NA and PA, respectively. However, accounting for shared variance with social anxiety was expected to nullify the relation between the BIS and interpersonally generated NA. The construct of social anxiety, concerned with evaluative fears in reaction to novel interactions, partners, and initiating and maintaining conversational topics, is expected to have greater intrinsic ties to a dyadic conversation than the global pain, threat, and punishment reactivity of the

BIS. As for the BAS, although curiosity focuses on exploratory behaviors and a sense of interest and wonder, there are no specific ties to the interpersonal domain, and both curiosity and the BAS (i.e., positive reward system) were expected to independently relate to interpersonally generated PA. In describing reactions to novelty, Spielberger and Starr (1994) state "subjective feelings of pleasantness are associated with… curiosity… as a function of increasing collative stimulus intensity and activity of the positive reward system." There is no work on the specificity of the BAS and BIS in different social contexts thus on an exploratory basis, we examined whether the BAS and BIS would exhibit differential sensitivities to interactions comprising intimate, closeness-generating topics compared to superficial, small-talk topics.

*2.1.1. Discriminating curiosity from related constructs*

We briefly discuss the differentiation of curiosity from the Big Five personality traits and intrinsic motivation. In terms of the Big Five, curiosity has a large positive relationship with Openness to Experience and a small to moderate positive relationship with Extraversion (e.g., Kashdan et al., 2004; Marshall, Wortman, Vickers, Kusulas, & Hervig, 1994). Although curiosity is a lower-order facet of Openness (McCrae & Costa, 1997), their unique characteristics can be discerned:

> Curiosity is a fundamental component of all openness facets. Yet high openness also entails imaginative, artistic, and unconventional sensibilities neither necessary nor sufficient for curiosity per se. Similarly, individuals can be high in openness, expressing a willingness to understand themselves and be open-minded, yet reluctant to challenge and expand themselves. The experience of curiosity is more of a mechanism of action (cognitively, emotionally, and/or behaviorally), whereas openness is more of a psychological predisposition. (Kashdan, 2004a, pp. 126–127.)

We were not interested in the elements of Openness reflecting unconventional values, culture, imagination, or cognitive abilities. We were interested in the interpretation of Openness as need for experience, which is best captured by the lower-order facet of curiosity. As for the small relationship between curiosity and extraversion, although both share a positive emotional core, extraversion involves sensitivity to social attention (e.g., Ashton, Lee, & Paunonen, 2002) whereas curiosity involves sensitivity to novelty, complexity, uncertainty, and conflict (e.g., Silvia, 2003).

Finally, curiosity and intrinsic motivation are typically used interchangeably, with both reflecting the process of engaging in activities for "their own sake." The enjoyment inherent to intrinsic motivation can derive from several positive psychological states including joy, the need for competence, or curiosity (see Amabile, Hill, Hennessey, & Tighe, 1994 for a measure with each of these dimensions). Curiosity evokes appetitive behaviors (i.e., pursuit, orientation, and engagement) in response to cues of novelty, complexity, uncertainty, and conflict. Theoretical models of curiosity are quite specific, positing that curiosity is induced and maintained by these specific stimuli properties (Berlyne, 1960, 1971; Silvia, 2001). For our purposes, there is little to gain from attempting to disentangle curiosity from these related constructs, however, theory and data suggest that the use of higher-order traits such as Openness or

intrinsic motivation entail additional elements that are extraneous to the construct of curiosity.

## 3. Summary

To further the study of individual differences in affective reactions to novel social interactions, we examined the unique predictive utility of curiosity, social anxiety, and the BAS and BIS. Prior work has shown that PA and NA are relatively orthogonal (e.g., Barrett & Russell, 1998), that the evolutionary purposes of positive and negative affectivity are quite different (see Fredrickson, 1998), and yet, that positive and negative affective states can be co-activated in emotionally complex situations (Larsen, Hemenover, Norris, & Cacioppo, 2003). For these reasons, we examined individual difference predictors of interpersonally generated PA and NA within the same social interaction. Upon controlling for shared variance among individual difference predictors, we hypothesized valence symmetry such that social anxiety would uniquely predict interpersonally generated NA and both curiosity and the BAS would uniquely predict interpersonally generated PA. As will be discussed, in our second study, we further examined individual differences in affective reactions following intimate compared to small-talk social interactions (contexts). Across both studies, $\alpha$ was set to .05.

## 4. Study 1

Study 1 used a standardized interpersonal closeness-generating task with a same-sex confederate. We expected post-interaction PA to be greater for individuals with stronger BAS's, higher curiosity, and lower social anxiety. We expected post-interaction NA to be greater for individuals with stronger BIS's and higher social anxiety. To account for the potential confound of affective experiences prior to our social interaction task, measures of trait affect were used as a proxy for baseline differences in PA and NA. Upon statistically controlling for the influence of dispositional affect and the shared variance among individual difference factors, fitting with our dual-process theoretical framework, we only expected curiosity and the BAS to predict post-interaction PA and social anxiety to predict post-interaction NA. Separate regression models with all individual difference variables were conducted for post-interaction PA and NA.

### *4.1. Method*

#### *4.1.1. Participants*

Participants were 104 college students, aged 18 or older. For the purpose of another study (Kashdan & Roberts, 2004a) these individuals were selected from a pool of introductory psychology students on the basis of combined scores on the Social Interaction Anxiety and Social Phobia Scales (SIAS/SPS; Mattick & Clarke, 1998).

However, our data show that our sample has a normal distribution on the SIAS/SPS (i.e., no significant difference from zero).[2] The sample was comprised of 57 females (29 high-SA) and 47 males (23 high-SA). No data were collected on the specific age or ethnicity of individual participants.

*4.1.2. Predictor measures*

*4.1.2.1. Positive and negative activated affective dimensions.* Trait PA and NA were measured with the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) using a 5-point Likert scale ($\alpha = .72$ and .86, respectively).

*4.1.2.2. Behavioral activation and inhibition systems.* The 13-item Behavioral Activation System scale (BAS; Carver & White, 1994) measured individual differences in the sensitivity to reward cues and the 7-item Behavioral Inhibition System scale (BIS; Carver & White, 1994) measured individual differences in the sensitivity to aversiveness cues. Participants rated items on a 4-point Likert Scale. Total BAS and BIS scores were used ($\alpha = .80$ and .78, respectively).

*4.1.2.3. Social anxiety.* The 19-item SIAS measured social interaction concerns and the 20-item SPS measured social performance fears and concerns about being observed. Participants rated items using a 4-point Likert scale. As a result of selecting a sample of high and low SA groups with the combined SIAS/SPS ($\alpha = .97$), we used a dichotomous variable in subsequent analyses.

*4.1.2.4. Curiosity.* The 10-item State-Trait Curiosity Inventory-Trait (STCI-Trait; Spielberger, 1979) assessed general tendencies to experience feelings of interest, wonder, and the desire to learn new things. Items included "I feel like exploring my environment" and "I am in a questioning mood." Data indicate that high scorers on the STCI-Trait behave differently than low scorers. As evidence of predictive validity, in four different college classes, when teachers were perceived as non-threatening, high curious students asked more than three times as many unprovoked questions than low curious students (Peters, 1978). Several examinations provide evidence of convergent, discriminant, structural, and incremental validity with measures of positive affect, openness to experience, sensation seeking, locus of control, and various indices of psychological health (e.g., Kashdan & Roberts, 2004b; Marshall et al., 1994; Spielberger & Starr, 1994). Respondents used a 4-point Likert scale for scale items ($\alpha = .76$).

[2] The high-SA group was randomly selected from the top 10% and the low-SA group from the lower 50% of the distribution of SA scores from an initial mass testing session. We tested whether there was a normal distribution for the SIAS/SPS for the full sample (Skewness = .458, $SE = .24$; Kurtosis = −1.12, $SE = .48$), and separately for men (Skewness = .30, $SE = .36$; Kurtosis = −1.42, $SE = .71$) and women (Skewness = .59, $SE = .33$; Kurtosis = −0.93, $SE = .64$). Tabachnick and Fidell (2001) indicate, "conventional but conservative (.01 or .001) $\alpha$ levels are used to evaluate the significance of skewness and kurtosis with small to moderate samples" (p. 74). Using the authors' analytic techniques and standard significance levels, the skewness of the SIAS/SPS was not significantly different from zero for the full sample ($p < .05$), or for the men ($p = .20$) or women ($p < .05$).

*4.1.3. Post-interaction outcome measures*

*4.1.3.1. Positive and negative activated affect.* State levels of PA and NA were measured with the PANAS. Participants completed the PANAS following each of the two sections of the social interaction (end of participant self-disclosure and end of confederate partner self-disclosure). Thus, state affect was measured at two separate time points. The α-coefficients for state PA and NA were .91 and .87 (averaged across two measurement periods).

*4.1.4. Procedure*

*4.1.4.1. Pre-interaction measures.* Participants were run individually and told that the study was concerned with non-verbal behavior and honest feelings during social interactions. They were asked to complete the trait scales prior to the social interaction task. These measures were not counterbalanced.

*4.1.4.2. Social interaction task.* To standardize the social task, the same male and female research assistants enacted confederate roles for all participants in same-sex interactions. Confederates were blind to group membership and were trained to provide a consistent social performance, sustaining friendly/neutral behavior. Training involved mock interactions between confederates and graduate students, and feedback from one of the authors (T.K.).

After an initial assessment period, the confederates and study participants were led into another room. Confederates were presented as other students participating in the study. Using a within-subject design, participants began by either answering a series of five questions asked by the confederate or asking and listening to the confederate answer the five task questions. The series of 5 questions gradually increased in the emotional content and level of self-disclosure necessary to answer them. For example, the first question, "If you could invite anyone, living or dead, for dinner and conversation, who would it be and why," was objectively more impersonal than the final question, "When did you last cry in front of another person? By yourself?" Each of the confederate scripted responses was approximately one minute in length. An equal number of participants from high and low-SA groups, and gender within groups, were randomly assigned and counterbalanced to the order of conditions (answering questions vs. listening to confederate partner answer questions). The five questions were asked sequentially by one partner with the other partner answering them. Then the two partners switched roles. For the purpose of another study, a video camera was directed at individuals as they answered the series of questions.

*4.1.4.3. Post-assessment.* At the end of each of the two conditions, the experimenter entered the room and asked participants and confederates to complete questionnaires according to "their feelings and state of mind during the prior interaction." As mentioned, state affect was measured at two time points and these two time periods were aggregated in subsequent analyses.

*4.1.4.4. Examining the fidelity of confederate behavior.* Two research assistants' blind to hypotheses and sample selection criteria were trained to code videotapes of

confederate behavior. Raters were trained via didactic sessions, sample videotapes, and feedback from the investigator (T.K.). Trained coders responded to five items using 7-point Likert scales: "Degree to which the confederate committed to their scripts," "How attentive were they to their partner," "How animated was their posture during the interaction," "How animated was their voice during the interaction," and "How friendly were they during the interaction." All ratings were independently conducted and interrater agreement was assessed using Intraclass Correlations (Shrout & Fleiss, 1979).

### 4.2. Results

#### 4.2.1. Preliminary analyses

*4.2.1.1. Manipulation check.* An acceptable intraclass reliability coefficient of .73 was found between the two observers for the aggregate score of all five items on confederate behavior. Upon averaging independent observer ratings, the degree to which confederates abided by their scripts was 6.76 ($SD = .38$) on a 7-point scale. No differences were found for high and low-SA groups on any ratings of confederate behaviors and ratings of confederate behaviors had no relationship with individual difference variables. Thus, confederates did not differ in their behavior across participants.

*4.2.1.2. Gender and order effects.* A dummy coded variable was used to assess gender. No gender differences were found on state PA or NA, or any of the individual difference variables except that women, compared to men, reported higher scores on the BIS, $t\ (102) = 3.26$, $p < .05$, $d = .65$. Overall, these results indicate that gender did not need to be treated as a covariate in subsequent analyses.

A dummy coded variable was used to assess order of study conditions within-subjects. No differences were found for state PA or NA. These results indicate that order did not need to be treated as a covariate in subsequent analyses.

*4.2.1.3. Zero-order correlations for post-interaction state affect and individual difference variables.*[3] As reported in Table 1, the near-zero relationship between state PA and NA ($r = -.11$) was consistent with considerable research suggesting that PA and NA reflect orthogonal dimensions of affect. Importantly, trait and state PA ($r = .55$) and NA ($r = .44$) were moderately to highly correlated, suggesting that affect reported during the social interaction was to some extent positively related to stable baseline functioning. Although state PA was significantly correlated with each of the individual difference variables, it was most strongly positively associated with curiosity

[3] For each dependent variable, state PA and NA, supplementary analyses were conducted separately by SA group (high vs. low) and condition (self-focus vs. external-focus). The only finding was that after controlling for other traits, curiosity was not a unique predictor of state-PA in the low-SA compared to the high-SA group. However, zero-order relations were similar in both groups. No condition differences were found. These findings support collapsing across groups and conditions.

Table 1
Study 1: Zero-order correlations for post-interaction state affect and individual difference predictors

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Trait-PA | 1.0 | | | | | | | |
| 2. Trait-NA | −.15 | 1.0 | | | | | | |
| 3. State-PA (post) | .55* | −.27* | 1.0 | | | | | |
| 4. State-NA (post) | −.19 | .44* | −.11 | 1.0 | | | | |
| 5. Social Anxiety | −.29* | .51* | −.34* | .52* | 1.0 | | | |
| 6. Curiosity (STCI) | .44* | −.09 | .54* | −.03 | −.19 | 1.0 | | |
| 7. BAS | .30* | −.22* | .41* | −.08 | −.18 | .36* | 1.0 | |
| 8. BIS | −.26* | .39* | −.29* | .48* | .64* | −.10 | −.09 | 1.0 |

*Note.* $n = 104$.
* $p < .05$.

($r = .44$) and negatively associated with social anxiety ($r = -.34$). State NA was most strongly positively correlated with social anxiety ($r = .51$).

### 4.2.2. Regression analyses

Our final set of analyses examined the unique individual difference predictors of post-interaction state affect after controlling for trait affect. These analyses statistically controlled for overlapping variance among related constructs. To examine affect generated during the interaction, trait measures of PA and NA were entered as a block on Step 1 of each regression analysis. This procedure served as a proxy to statistically control for baseline PA and NA. On Step 2, individual difference variables were entered simultaneously as a block to examine the unique predictive utility of interpersonally generated affect.

*4.2.2.1. Testing unique individual difference predictors of positive activation.* As Table 2 shows, the block of trait affect made a significant contribution to the prediction of PA, $F\Delta(2, 101) = 25.42$, $R^2\Delta = .34$, $p < .05$. Within-set analyses indicated that both trait PA ($\beta = .52$) and trait NA ($\beta = -.19$), made statistically significant unique contributions. As for the block of individual difference variables, although the omnibus

Table 2
Study 1: contributions of individual difference variables to post-interaction positive affect

| | Positive affect | | | | | |
|---|---|---|---|---|---|---|
| | $F\Delta$ for set | $t$ for within-set predictors | $df$ | $\beta$ | $pr$ | $R^2\Delta$ |
| Step 1 | 25.42* | | 2, 101 | | | . 34* |
| Trait PA | | 6.32* | 101 | .52* | . 53* | |
| Trait NA | | 2.32* | 101 | −.19* | −.22* | |
| Step 2 | 1.38 | | 6, 97 | | | . 04 |
| Social anxiety | | 0.11 | 97 | . 01 | . 01 | |
| Curiosity | | 1.85* | 97 | .21* | . 21* | |
| BAS | | 0.13 | 97 | .05 | . 06 | |
| BIS | | 1.16 | 97 | −.04 | −.04 | |
| Total $R^2$ | | | | | | .37* |

* $p < .05$.

test was not significant, an examination of within-set analyses indicated that curiosity was the only variable to be a statistically significant unique predictor of post-interaction PA ($\beta = .21$). It should be noted that using curiosity as the only individual difference predictor led to a significant omnibus test for the second block in our regression analysis; thus, the other individual difference factors appeared to deflate the predictive power of curiosity. The overall model explained 37% of the variance in post-interaction PA.

*4.2.2.2. Testing unique individual difference predictors of negative activation.* As Table 3 shows, the block of trait affect made a significant contribution to the prediction of NA, $F\Delta(2, 101) = 13.56$, $R^2\Delta = .21$, $p < .05$. Trait NA made a significant unique contribution ($\beta = .43$), whereas the unique effect of PA was not statistically significant. Of more theoretical relevance, the block of individual difference variables was a significant predictor of interpersonally generated NA. Social anxiety emerged as the only unique significant predictor of interpersonally generated NA ($\beta = .53$). The overall model explained 39% of the variance in post-interaction NA.

### 4.3. Discussion

Study 1 investigated the role of theoretically relevant individual difference variables that may contribute to the variability in affect following self-disclosing interactions with trained confederates. After conservatively controlling for shared variance among predictors, including trait affect, social anxiety uniquely predicted state NA whereas curiosity predicted state PA. Curiosity findings fit with the belief that curiosity and exploration are prerequisites to generating growth in personal and social capital (Fredrickson, 1998; Kashdan & Fincham, 2004).

The traits of curiosity and "social" anxiety espoused by Spielberger's Dual-Process Model of Optimal Stimulation exhibited somewhat stronger roles than higher-order motivational systems (BAS and BIS) in predicting interpersonally generated affect. Moreover, the valence symmetry of curiosity in predicting post-interaction

Table 3
Study 1: contributions of individual difference variables to post-interaction negative affect

| | Negative affect | | | | | |
|---|---|---|---|---|---|---|
| | $F\Delta$ or set | $t$ for within-set predictors | $df$ | $\beta$ | $pr$ | $R^2\Delta$ |
| Step 1 | 13.56* | | 2, 101 | | | .21* |
| Trait PA | | −1.37 | 101 | −.12 | −.14 | |
| Trait NA | | 4.76* | 101 | .43* | .43* | |
| Step 2 | 6.95* | | 4, 97 | | | .18* |
| Social anxiety | | 4.40* | 97 | .53* | .41* | |
| Curiosity | | 0.10 | 97 | .01 | . 01 | |
| BAS | | −1.39 | 97 | −.13 | −.14 | |
| BIS | | −0.14 | 97 | −.02 | −.01 | |
| Total $R^2$ | | | | | | .39* |

* $p < .05$.

PA and social anxiety in predicting post-interaction NA suggest that there are in fact dual processes inherent in the reactivity of individuals in response to novel social activity (and although not presently examined, perhaps non-social activity). Although these findings fit with our model and hypotheses, we also expected the BAS, which has shown sensitivity to positive stimuli and life events in prior work, to predict post-interaction PA. The BAS may not have been a unique predictor of PA because the interaction had less than desirable ecologically validity. A more natural social interaction requiring spontaneous verbal and non-verbal responses between interaction partners may have been more pleasurable to individuals with strong BAS's. The other issue is brevity. The benefits of novel interactions including learning novel information about partners, reciprocally sharing personal information and feeling understood, validated, and a sense of belongingness may require a longer conversation. While there were no effects with the BIS in our structured interactions, our measure of social anxiety may have been more sensitive to the anticipatory anxiety, concerns with being negatively evaluated, concerns with somatic anxiety being noticed, and social perfectionism that can derive from interpersonal contexts.

Although Study 1 had a number of strengths, including the use of a standardized social interaction task and conservative tests of unique explanatory power, there are caveats. First, the sample was derived from students scoring high or low on a social anxiety screening measure. However, as shown in Footnote 2, our data provide evidence for a normally distributed sample. Second, pre-interaction, state PA and NA were not assessed, and instead we used trait PA and NA as proxy variables.

## 5. Study 2

A second study was conducted as a replication and extension of Study 1. In addition to determining which findings from the first study were reliable, we wanted to address several of the limitations of Study 1 and extend the line of research on personality embedded in interpersonal contexts. In contrast to Study 1, which used confederates, participants were paired with other participants in Study 2 in order to increase ecological validity. To control for confounds relating to romantic and sexual attraction (not addressed in Study 1), we selected participants currently in romantic relationships and assessed physical attraction to interaction partners. While Study 1 used same-sex interaction partners, we sought to extend our line of research by using opposite-sex interaction partners in Study 2. For Study 2, we abandoned the State-Trait Curiosity Inventory (STCI) in favor of the Curiosity and Exploration Inventory (CEI; Kashdan et al., 2004), which was derived from theory on the components of curiosity (exploration tendencies and flow-like task absorption). Many of the items of the STCI are conceptually similar to PA (e.g., "I feel mentally alive") and because our dependent variables were affect, we felt this measurement change would increase the validity of analyses. Of greater importance, in order to examine affect generated during the course of the interaction, all analyses statistically controlled for pre-interaction *state* measures of PA and NA. To increase the opportunity for intimacy development, we also extended the interaction length of each condition to 45 min in Study 2.

Because the sole use of a closeness-generating task in Study 1 did not allow us to examine whether affective responses were specifically tied to intimate disclosure, participants in Study 2 were randomly assigned to either a 45-min small-talk (neutral/superficial) or closeness-generating interaction task. This design allowed us to examine the possibility that self-relevant cognitive and affective processes related to social anxiety would be more pronounced in situations that activate beliefs about social inadequacies and being unlikable, and heighten the potentiality of perceived rejection (i.e., our small-talk condition) (see Reis et al., 2000 for related work on rejection sensitivity and attachment styles).

Theory and data suggest that affective experiences fluctuate across social contexts. Individuals derive the greatest pleasure when they engage in social behaviors that are congruent with their behavior tendencies and sensitivities (i.e., dominant personality traits) and the least pleasure when they engage in social behaviors that are incongruent with their behavior tendencies (Côté & Moskowitz, 1998). Based on this model, we hypothesized interactive effects between traits and social contexts. Individuals with higher curiosity and stronger BAS's were expected to exhibit greater PA in the closeness compared to the small-talk condition; individuals with lower curiosity and weaker BAS's were expected to be relatively insensitive to the rewards of both contexts. Individuals with higher social anxiety were expected to exhibit elevated NA in both conditions. However, we hypothesized that the elements of small-talk would be more aversive than closeness-generating topics of conversation. Being high in social anxiety was proposed to increase sensitivity to the aversive nature of monotonous, inescapable small-talk. Despite being given objectively positive feedback from interaction partners, individuals with excessive social anxiety make internal attributions for perceived social inadequancies (Stopa & Clark, 1993). Thus, high socially anxious individuals were expected to blame themselves for unsatisfactory social encounters. The superficial nature of small-talk was expected to amplify negative self-appraisals of their performance and perceived rejection. Nonetheless, it also seems plausible that high socially anxious individuals might experience greater NA in the closeness-generating condition, where self-disclosure is a necessary component. We argue that the intensity and length of the 45-min interaction will allow high socially anxious individuals to habituate to the anxiety of self-disclosure such that by the end of the task, their distress will have substantially declined (exposure and habituation to feared situations is a primary ingredient in the effective treatment of excessive social anxiety; e.g., Hope, Heimberg, Juster, & Turk, 2000). Nonetheless, with an absence of prior data on the interactive influence of social context and social anxiety, our hypotheses should be considered exploratory. Based on Study 1 findings, social anxiety was posited to be more important than the more global aversive-oriented BIS due to the interpersonal specificity of the social anxiety construct and our interaction tasks.

### *5.1. Method*

#### *5.1.1. Participants*

Participants were 97 college students, aged 18 or older. To reduce the potential confound of romantic interest in interaction partners, individuals were required to

either be dating or in a relationship. To additionally minimize the potential confound of sexual attraction, we assessed perceived physical attraction to interaction partners. Participants were randomly selected from undergraduate psychology classes. Our design matched participants with opposite-sex partners. Seven participants did not complete the dyadic task because an uneven number of men and women arrived during the administration. The final sample of 90 was comprised of 45 females and 45 males. The average age of participants was 19.38 ($SD = 2.23$). Sixty-six (73.3%) were European-American, 9 (10%) were Asian-American, 8 (8.9%) were African-American, 2 (2.2%) were Hispanic-American, and 5 (5.5%) were not identified.

*5.1.2. Manipulation check questions*

To examine the fidelity of our manipulation, namely randomly assigning participants to an intimate or small-talk interaction, we added four manipulation check questions. After the social interaction, participants were asked to what extent they disclosed information about their innermost self, personally important experiences and events, feelings about their partner, and whether they would want to spend time with their partner again.

*5.1.3. Predictor measures*

*5.1.3.1. State positive and negative activated affect.* Pre-interaction state PA and NA was measured with the PANAS using a 5-point Likert scale ($\alpha = .89$ and .87, respectively).

*5.1.3.2. Trait measures.* Similar to Study 1, the BAS and BIS scales assessed the behavioral activation and inhibition systems ($\alpha = .79$ and .77, respectively). Unlike Study 1, which utilized the 19-item Social Interaction Anxiety Scale (SIAS) and the 20-item Social Phobia Scale (SPS), for parsimony, only the SIAS was administered. The SIAS, addressing anxiety in reciprocal social exchanges, was deemed more relevant than performance anxiety ($\alpha = .88$). The 7-item Curiosity and Exploration Inventory (CEI; Kashdan et al., 2004) was administered to assess appetitive strivings for diverse novel information and experiences (Exploration subscale; e.g., "I would describe myself as someone who actively seeks as much information as I can in a new situation") and deep absorption in specific activities (Absorption subscale; e.g., "When I am participating in an activity, I tend to get so involved that I lose track of time"). The CEI total score was used with a 7-point Likert scale ($\alpha = .78$). The revised 21-item Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) assessed the severity of depressive symptoms over the past two weeks ($\alpha = .91$). It was included in secondary analyses to examine the specificity of social anxiety findings.

*5.1.4. Post-interaction outcome measures*

*5.1.4.1. Positive and negative affect.* Post-interaction state PA and NA were measured with the PANAS ($\alpha = .90$ and .79, respectively).

*5.1.4.2. Interpersonal closeness.* Ratings of interpersonal closeness were measured using the Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992). The

IOS consists of seven overlapping circles, representing self and partner, with gradually increasing degrees of overlap. As a second measure, we modified the IOS to ask participants how close they felt to their partners in comparison to the ongoing, existing relationships in their everyday life (Berscheid, Snyder, & Omoto, 1989). This allowed participants to define perceived closeness using a personally meaningful reference point.

*5.1.5. Procedure*

Eight to sixteen participants were scheduled per session. Students completed self-report questionnaires upon arriving. Social interaction dyads were created by randomly matching participants with members of the opposite sex. Dyads were randomly assigned to a 45-min closeness-generating and relationship-building condition or a comparison small-talk condition (see Aron, Melinat, Aron, Vallone, & Bator, 1997). Participants were then led into a room for the social interaction. Four to six dyads were run together in a single room. The instructions were identical for each social interaction condition and were read by experimenters after participants were paired and seated. All participants were told that their goal was simply to get close to their partner. They were informed that one of the best ways to do this is to take turns sharing information with interaction partners. To do this, we provided a 45-min sharing game (for exact instructions, see Aron et al., 1997, p. 374).

Each dyad was given a copy of the instructions and three sets of index cards labeled Set 1, 2, and 3. Each of the sets had index cards numbered and ordered. They were told to begin with the question on the first index card of Set 1 such that one member read the question aloud and answered it and, in turn, the second member of the dyad answered the same question. The roles were to be alternated for each subsequent index card. The task was designed such that it was highly unlikely for participants to finish all of the questions for a set in the allotted time period. In fact, none of the participants in our study completed any of the sets before the allotted time periods, thus, the length of interactions was standardized across participants.

In the closeness-generating condition, the "tasks called for self-disclosure or other intimacy-associated behaviors; the intensity of these tasks gradually increased, both within sets and over the three sets" (Aron et al., 1997, p. 366). To ensure all participants would engage in each intensity level of tasks, after 15 min, the experimenter asked all dyads to move on to Set 2. After another 15 min, the experimenter asked all dyads to move on to Set 3. An example from Set 1 was "For what in your life do you feel most grateful," from Set 2 was "Alternate sharing something you consider a positive characteristic of your partner (share a total of 5 items)," and from Set 3 was "Share with your partner an embarrassing moment in your life." The emotional depth of information, focusing on the self and relationship between partners, becomes more intense with each series.

In the small-talk condition, questions "involved minimal self-disclosure or focus on partner or relationship" (Aron et al., 1997, p. 366). An example from Set 1 was "What is your favorite holiday? Why?," from Set 2 was "Describe the last time you went to the zoo," and from Set 3 was "What foreign country would you most like to visit? What attracts you to this place?" The emotional depth of the questions was somewhat superficial.

*5.1.5.1. Post-assessment.* At the end of the social interaction task, the experimenter separated partners of each dyad. Participants were reminded that questionnaires were confidential and the purpose of separating them was to increase their ability to be candid. We focused on post-interaction PA and NA as dependent variables.

## 5.2. Results

### 5.2.1. Preliminary analyses

*5.2.1.1. Manipulation check.* Manipulation check questions were compared between the small-talk and closeness-generating conditions. Compared to the small-talk condition, individuals in the closeness-generating condition were more likely to disclose information about their innermost self, $t(88) = 3.63$, $p < .05$, $d = .77$, disclose personally important experiences and events, $t(88) = 2.05$, $p < .05$, $d = .44$, openly express feelings about their partner, $t(88) = 2.17$, $p < .05$, $d = .46$, and a trend to spend future time with their partner, $t(88) = 1.92$, $p > .05$, $d = .41$. Supporting the validity of our manipulation, the closeness-generating condition facilitated greater intimate disclosure than the small-talk condition.

*5.2.1.2. Dyad effects.* Participants interacted with other participants raising the possibility of dependent data (i.e., individuals nested within dyads or couples). Accordingly, we examined the intraclass correlation (testing the contribution of dyad effects to primary dependent variables) with a series of multilevel random coefficient models using HLM 5.04 program (Raudenbush, Bryk, Cheong, & Congdon, 2000). Dyad only accounted for 1% of the variance in post-interaction PA and NA, respectively. Thus, our results indicate that the data were independent and multilevel modeling was not required.

*5.2.1.3. Gender effects.* We failed to find significant gender main or interaction effects. Thus, gender was removed from subsequent analyses.

*5.2.1.4. Zero-order correlations between affect and individual difference variables.* As reported in Table 4, the near-zero relationship between pre-interaction state PA and

Table 4
Study 2: sero-order correlations for interpersonally generated affect and individual difference predictors

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. State-PA (pre) | 1.0 | | | | | | | |
| 2. State-NA (pre) | −.11 | 1.0 | | | | | | |
| 3. State-PA (post) | .51* | −.04 | 1.0 | | | | | |
| 4. State-NA (post) | −.22* | .57* | −.15 | 1.0 | | | | |
| 5. Social anxiety | −.41* | .41* | −.14 | .24* | 1.0 | | | |
| 6. Curiosity (CEI) | .37* | −.12 | .41* | −.13 | −.36* | 1.0 | | |
| 7. BAS | .08 | −.02 | .19 | −.08 | −.18 | .41* | 1.0 | |
| 8. BIS | −.42* | .21* | −.19 | .26* | .45* | −.07 | .03 | 1.0 |

*Note.* $n = 90$.
* $p < .05$.

NA, $r = -.11$, and post-interaction state PA and NA, $r = -.15$, are consistent with Study 1 and prior research suggesting that PA and NA reflect orthogonal dimensions of affect. Pre- and post-interaction PA and NA were moderately to highly correlated, $r$s = .51 and .57, respectively, suggesting that controlling for pre-interaction levels of affect is necessary to determine whether post-interaction affect is a result of the social interaction rather than experiences earlier on the day of the task. Similar to Study 1, post-interaction state PA had a large positive relationship with curiosity ($r = .41$). Whereas social anxiety and the BIS were both significantly negatively related to pre-interaction PA ($r$s = −.41 and −.42, respectively), only small negative relationships were found with post-interaction PA ($r$s = −.14 and −.19, respectively). As for post-interaction NA, social anxiety ($r = .24$) and the BIS ($r = .26$) demonstrated significant positive relationships; these findings replicated the results of Study 1.

*5.2.2. Testing the impact of traits on interpersonally generated affect*

To determine the unique predictors of interpersonally generated PA and NA, a series of hierarchical regression analysis were conducted with all individual difference predictors entered as a single block. For post-interaction PA, after the significant contribution of pre-interaction state PA and NA at Step 1, $F\Delta(2,87) = 15.02$, $R^2\Delta = .26$, $p < .05$, the block of individual difference variables was a significant predictor at Step 2, $F\Delta(4,83) = 2.63$, $R^2\Delta = .08$, $p < .05$. An examination of individual difference predictors indicated that only curiosity emerged as a statistically significant unique predictor of post-interaction PA, $t(83) = 2.54$, $\beta = .28$, $p < .05$. For post-interaction NA, after the significant contribution of pre-interaction state PA and NA at Step 1, $F\Delta(2,87) = 23.50$, $R^2\Delta = .35$, $p < .05$, the block of individual difference variables was not a significant predictor at Step 2, $F\Delta(4,83) = 0.76$, $R^2\Delta = .02$, $p > .05$. Furthermore, after controlling for shared variance among individual difference predictors, within-set analyses showed that none of the variables were significant predictors of post-interaction NA.

*5.2.3. Testing social context × trait effects on interpersonally generated PA and NA*

We examined whether the effects of dispositional variables on interpersonally generated affect varied as a function of social interaction condition. The interaction terms involving task condition and social anxiety, curiosity, the BAS, and the BIS were examined separately in predicting both interpersonally generated PA and NA. Pre-interaction state PA and NA were entered at Step 1 of each regression model. At Step 2, task condition and a single individual difference variable was entered. Finally, at Step 3 an interaction term between task condition and the individual difference variable from the prior step was entered. Interaction terms were centered to minimize multicollinearity (Aiken & West, 1991).

*5.2.3.1. Positive activation.* Results found support for a BAS × Condition interaction in predicting interpersonally generated PA. Step 1 of the model (pre-interaction affect) was significant, $F\Delta(2,87) = 15.02$, $R^2\Delta = .26$, $p < .05$, Step 2 (main effects) was non-significant, $F\Delta(2,85) = 1.34$, $R^2\Delta = .02$, $p > .05$, and at Step 3, the BAS × Condition interaction accounted for significant, incremental variance in interpersonally generated PA,

$F\Delta(1,84) = 3.91$, $\beta = .68$, $R^2\Delta = .03$, $p = .05$. The overall regression model explained 31% of the variance in interpersonally generated PA. To understand the nature of the BAS × Condition interaction, separate regression analyses were conducted for the closeness-generating and small-talk conditions. For each condition, PA was regressed on the BAS (with pre-interaction affect as covariates). Simple slopes are plotted in Fig. 1 (see Aiken & West, 1991 for methodology). In the closeness-generating condition, individuals with stronger BAS's reported significantly greater PA compared to individuals with weaker BAS's, $t(46) = 2.61$, $p < .05$. No significant differences were found between individuals with stronger and weaker BAS's in the small-talk condition. Even after additionally controlling for the potential confounds of perceived physical attraction to partner and length in current romantic relationship, the BAS × Condition interaction effect continued to predict greater interpersonally generated PA, $F\Delta(1,82) = 6.55$, $R^2\Delta = .05$, $p < .05$. None of the other individual difference variables demonstrated interactive effects in predicting PA.

*5.2.3.2. Negative activation.* Results found support for a Social Anxiety × Condition interaction in predicting interpersonally generated NA. Step 1of the model (pre-interaction affect) was significant, $F\Delta(2,87) = 23.50$, $R^2\Delta = .35$, $p < .05$, Step 2 (main effects) was non-significant, $F\Delta(2,85) = .29$, $R^2\Delta = .00$, $p > .05$, and at Step 3, the Social Anxiety × Condition interaction accounted for significant, incremental variance in interpersonally generated NA, $F\Delta(1,84) = 6.32$, $\beta = -.73$, $R^2\Delta = .05$, $p = .05$. The overall regression model explained 40% of the variance in interpersonally generated NA. To understand the nature of the Social Anxiety × Condition interaction, separate regression analyses were conducted for the closeness-generating and small-talk conditions. For each condition, NA was regressed on Social Anxiety (with pre-interaction affect as covariates). Simple slopes are plotted in Fig. 2. In the small-talk condition, individuals with higher social anxiety reported significantly greater NA compared to individuals with lower social anxiety, $t(40) = 2.77$, $p < .05$. No significant

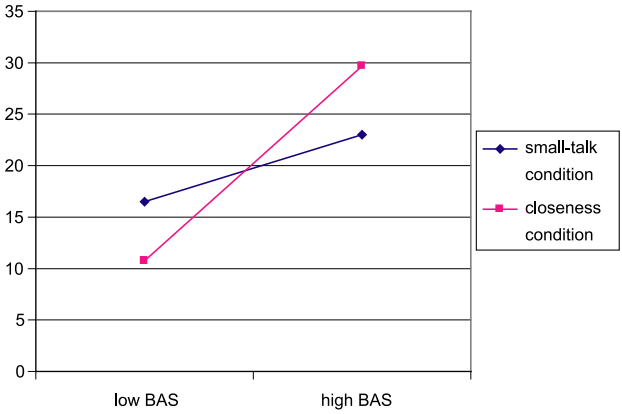


Fig. 1. Behavioral Activation System (BAS) × Social Context Interaction Effect on Interpersonally Generated Positive Affect. *Note.* $n = 90$. Simple slopes were plotted at one standard deviation above and below the mean on the standardized BAS.

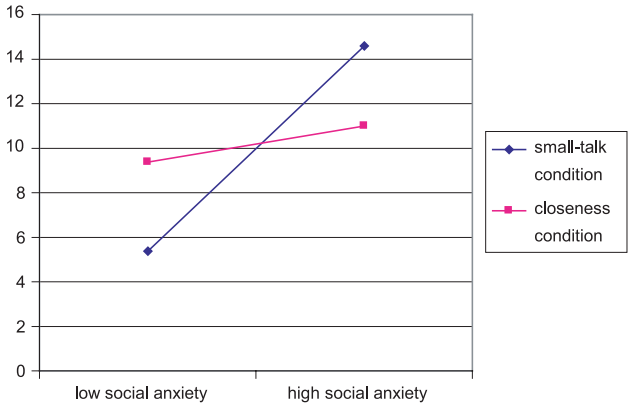


Fig. 2. Social Anxiety × Social Context Interaction Effect on Interpersonally Generated Negative Affect. *Note.* $n = 90$. Simple slopes were plotted at one standard deviation above and below the mean on the standardized SIAS.

differences were found between individuals with higher and lower social anxiety in the closeness-generating condition. Even after additionally controlling for the potential confounds of perceived physical attraction to partner and length in current romantic relationship, the Social Anxiety × Condition interaction effect continued to predict greater interpersonally generated NA, $F\Delta(1,82) = 8.35$, $R^2\Delta = .06$, $p < .05$. None of the other individual difference variables demonstrated interactive effects in predicting NA.

In light of the conceptual overlap and high comorbidity between social anxiety and depression, the specificity of the Social Anxiety × Condition interaction effect was examined. Specifically, we controlled for the shared variance between social anxiety and depressive symptoms. Upon including depressive symptoms as an additional covariate in our regression model, the Social Anxiety × Condition interaction effect remained significant, $F\Delta(1,83) = 6.49$, $R^2\Delta = .05$, $p < .05$. Thus, social anxiety effects were not mediated by the severity of depressive symptoms.

## 6. General discussion

We sought to examine individual difference variables that influence the degree to which social interactions are associated with the generation of positive and negative emotional states. Our hypotheses were based on a framework suggesting that curiosity and social anxiety act differentially to influence the subjective experiences of individuals engaged in activity (Spielberger & Starr, 1994). In contrast to the majority of research on personality traits such as curiosity and social anxiety, and the overarching BAS and BIS, we heeded recent suggestions that personality serves little purpose without examinations within meaningful life contexts, with the most salient to human development, well-being, and daily functioning being interpersonal relations (Cooper, 2002; Reis et al., 2000; Zayas, Shoda, & Ayduk, 2002). Besides searching for

the existence of replicable findings we conducted an initial investigation of how and when specific personality traits predict interpersonally generated affect.

Several consistent findings emerged across our two studies. Curiosity was uniquely related to greater interpersonally generated PA. Social anxiety was uniquely related to greater interpersonally generated NA in Study 1, and this relationship varied as a function of social contexts in Study 2. Specifically, more socially anxious individuals reported significantly greater NA following banal small-talk interactions compared to individuals with less of social anxiety, while no group differences were found following closeness-generating interactions. Social anxiety findings were not attributable to shared variance with depressive symptoms. These findings fit with relevant theory and add to a growing body of work suggesting that positive and negative affect are separable and there are different predictors, concomitants, and consequences of each in social interactions (and relationships; e.g., Fincham & Linfield, 1997). Novel activity such as interacting with strangers can be expected to coactivate anxiety, in response to the complexity of not knowing what will happen and whether one is in danger (such as being ostracized), and curiosity, in response to the thrill and excitement of learning and experiencing new things. Other interesting, study-specific findings are examined and interpreted with more caution.

### *6.1. Comparing small-talk and closeness-generating social interactions (Study 2)*

The strength of Study 1, namely assuring standardized interactions across participants, sacrificed ecological validity for internal reliability. To replicate and extend our first study, Study 2 had participants interact with cross-sex participants instead of same-sex confederates. We also measured and controlled for anticipatory, pre-manipulation state PA and NA. To examine how and when the personality traits from Study 1 contribute to interpersonal experiences, we compared an intimate, closeness-generating interaction with a neutral/boring, small-talk condition. To minimize the influence of romantic interest, only participants currently in romantic relationships were recruited and both relationship longevity and physical attraction to interaction partners were statistically controlled.

#### *6.1.1. Interpersonally generated PA*

As was the case in Study 1, higher levels of curiosity predicted greater interpersonally generated PA. This finding remained even after controlling for physical attraction to partner and the length of current romantic relationships. Moreover, being high in trait curiosity facilitated satisfaction and enjoyment in social interactions, irrespective of whether conversation topics were boring or more emotionally intimate. Upon providing evidence of the importance of curiosity in social interaction, there is merit in exploring the causal mechanisms leading curiosity to facilitate positive subjective experiences. Curiosity has been proposed to facilitate positive outcomes as a function of heightened attention to novel and challenging cues in the environment (Kashdan et al., 2004). Focusing attention on positively valenced external events may beget rewarding opportunities, reinforcing and sustaining curiosity experiences. Pending empirical scrutiny, we propose that highly curious individuals

are more vigilant to rewarding behaviors by interaction partners and more generally, in the environment. With this attentional style, highly curious individuals are expected to be better able to recognize and capitalize on the interests of interaction partners by responding with behaviors that sustain positivity. Future studies with repeated assessments of the direction and content of attentional energies during the course of social interactions can examine the veracity of this purported causal mechanism. Studies using implicit and explicit cognitive tasks can further examine whether highly curious individuals exhibit a specific attentional bias to incentive-reward cues. Overall, curiosity appears to be a reliable, relevant predictor of PA generated during the course of social interactions.

Although only tested in our second study, an interesting BAS × Condition interaction was found such that individuals with stronger BAS's were more sensitive to the pleasurable qualities of conversations in the closeness-generating condition compared to individuals with weaker BAS's. This finding fits with the prevailing view of the BAS as the broad motivational system responsible for sensitivities to environmental reward cues, and the activation of approach behaviors when exposed to hedonic stimuli (Carver et al., 2000; Watson, Wiese, Vaidya, & Tellegen, 1999). Although existing research has shown that the BAS is sensitive to experimentally manipulated rewards (Carver & White, 1994), few studies have examined BAS processes in an interpersonal context. Our results found the predictive utility of the BAS to be specific to PA following intimate social interactions, and not more neutral, small-talk activity. This fits with prior work showing the activation of the BAS to be specific to positive events (Gable et al., 2000) adding to the likelihood that the attributes of the BAS (cognitive, behavioral, and affective processes) are only revealed in response to hedonic situations.

Positive affective states have been posited to play an important role in social interactions and the development of close relationships (Fredrickson, 1998). Over the course of an interaction, there is a hypothesized positive feedback loop such that interpersonally generated positive affective states elicit positive behaviors from interaction partners such that each interaction partner, in turn, reciprocate with further increases in positive behaviors, self-disclosure, and increased attentiveness, joy, and interest. Thus, the relationship or feelings of intimacy broaden between partners. The present results provide evidence for potential enabling factors (high curiosity, stronger BAS's) to experiencing positive social interactions, an important step in the process of developing close relationships. Our curiosity findings converge with our prior work (using the sample from Study 1) showing that trait and state curiosity predict greater interpersonal attraction and closeness as rated by participants and their interaction partners (Kashdan & Roberts, 2004b). There is merit in examining the role of curiosity and exploratory behaviors in the development and maintenance of real world relationships such as confidants, friends, and romantic partners. Clinical applications include examinations of the psychosocial benefits of greater curiosity or stronger BAS's such as quality-of-life, learning, social and occupational functioning, and physical health.

#### *6.1.2. Interpersonally generated NA*

Both Studies 1 and 2 demonstrated that higher levels of social anxiety predict greater interpersonally generated NA. Of more interest, Study 2 demonstrated that

the effect of social anxiety was moderated by the social context such that high and low socially anxious individuals reported no affective differences in the closeness-generating condition whereas high socially anxious individuals reported greater NA in the small-talk condition. This finding may seem counterintuitive as we might think that high socially anxious individuals would find small talk to be preferable to more intimate queries that expose their innermost feelings and thoughts to potential scrutiny. Yet, sustaining a 45-min small-talk interaction that never progresses in the sharing of personal information (i.e., intimacy) may activate and reinforce the self-deprecating core beliefs and relational schemas of high socially anxious individuals. Internal attributions for being unable to transform small-talk into an engaging experience for oneself and one's partner may amplify pre-existing levels of high NA. Despite the intuitive appeal of these hypotheses, we are not aware of any prior studies examining social anxiety in boring social situations and replication is necessary. Of additional interest, high socially anxious individuals also reported elevated NA in the closeness-condition. Thus, even when high socially anxious individuals are provided with an intimate interaction, there appear to be processes that prevent them from enjoying themselves. Subsequent research can examine putative causal mechanisms that account for social anxiety effects on subsequent affective experiences in various social contexts. Dominant theoretical models of social anxiety (e.g., Leary & Kowalski, 1995; Rapee & Heimberg, 1997) suggest that negatively valenced self-directed attention and self-presentation concerns amplify the anxious apprehension of excessively social anxious individuals in social situations. Relatedly, avoidance-based emotion regulation strategies such as engaging in safety behaviors (e.g., talk little, avoid eye contact; Wells, 1997) may prevent positive task engagement for high socially anxious individuals. Another plausible mechanism for the greater NA of high social anxious individuals in the small-talk compared to the intimacy condition is the presence of distorted social attributions. High socially anxious individuals may blame themselves for the boring and monotonous dialogue associated with small-talk questions, even when the content is based on objective social interaction tasks (or introduced by social interaction partners).

Future research should continue to explore when and how potentially enjoyable interactions lead to negative subjective experiences for high socially anxious individuals. Additional studies may benefit from moving beyond the self-report of mediational mechanisms to examine behavioral and physiological indices. Although our findings may raise more questions than answers, we believe this is a benefit and not a limitation of our study. Virtually all behavioral studies of social anxiety have utilized 5-minute open-ended interactions with confederates (Norton & Hope, 2001) whereas the present work was designed to examine social anxiety in a meaningful context by evoking two very common social situations, small-talk and the reciprocal exchange of gradually escalating self-disclosure (i.e., intimacy). Finding social anxiety effects to be moderated by social context indicates that to understand the behaviors and consequences of high socially anxious individuals, different types of people, relationships, conversations, and environments that are typically encountered need to be accounted for and compared (Cooper, 2002; Zayas et al., 2002). Embedding the study of social anxiety in meaningful real-life contexts can offer new insights into how we define, assess, and treat this

personality trait (when excessive). Understanding the specific conditions and processes that lead from personality to distress offers more precise targets of intervention.

Recruiting participants for a social interaction task may have unduly influenced our results. Individuals with significantly distressing and impairing social anxiety are probably less likely to volunteer for novel interpersonal studies. Sample bias may have reduced the strength of our findings.

### 6.2. Caveats and future directions

Our utilization of different social interaction task methodologies across Study 1 and 2, including variations on gender pairings, use of confederates, how baseline affect was measured, and length of interactions, may have compromised a true replication. However, in light of these methodologic differences, our curiosity and social anxiety findings appear even more robust and reliable. We should also note that although we discussed the BAS interaction effect on interpersonally generated PA in Study 2, this marginal finding needs to be replicated. All of our participants were undergraduates on the edge of adolescence, potentially limiting the generalizability of our findings. The plasticity of our participants' personalities may lead to quite different findings than would be obtained with middle and older adults in interpersonal situations. Perhaps of most importance, our reliance on self-reported experiences bears all of the limitations associated with this methodology. While the importance of subjective ratings of affect and constructs such as curiosity and social anxiety are invaluable, we would also argue that it is insufficient to study subjective experiences and ignore the distinct expressive-motor activity and autonomic activity components of affective and motivational constructs. However, as one of the first studies to examine the specificity of curiosity, social anxiety, and the BAS in multiple interpersonal contexts, we believe our work demonstrates the incremental utility of each in the study of relationships. Finding curiosity and BAS to impact interpersonal outcomes is impressive in light of the broadband items in the scales used to tap these constructs that make no mention of behavior in the interpersonal domain. Modifying existing curiosity and BAS scales to more specifically assess "interpersonal curiosity" and "sensitivity to interpersonal reward cues" can be expected to yield stronger effects. Social anxiety is strongly negatively related to social activity, trait PA is strongly positively related to social activity, and curiosity uniquely predicted interpersonally generated PA over the above these traits. However, our understanding of the incremental validity of curiosity in predicting interpersonally generated PA is limited by our failure to include measures directly related to social behaviors such as sociability, assertiveness, and emotion expressiveness.

The present studies set the stage for prospective studies over a longer time frame. For example, if high compared to low curiosity predicts greater PA during the course of small-talk and intimate interactions, what are the long-term consequences on the quality and quantity of social networks, and daily interpersonal functioning? In terms of applied work, the continual development of prevention and treatment programs targeting interpersonally relevant character traits (Hope et al., 2000; Turner, Beidel, & Cooley, 1994) has the potential to combat aversive outcomes such

as loneliness, anhedonia, and difficulties forming intimate relationships. In terms of preventing psychological distress, future work may discover that a number of the traits under study such as curiosity and the BAS are malleable and their modification may serve as a means of increasing positive interpersonal outcomes and psychological resilience. Besides dyadic social interactions, future studies can examine whether the affect experienced and behaviors generated by individuals with differing levels of curiosity, social anxiety, and BAS's are found in other relevant interpersonal (e.g., athletic) and intrapersonal (e.g., problem-solving) contexts.

## 7. Summary

Individual differences in curiosity, social anxiety, and less consistently, the BAS, contributed to the degree to which positive and negative affect was generated during interpersonal interactions. Whereas curiosity exhibited consistent effects across different forms of social interaction, the effects of social anxiety and BAS were context specific. Dispositional curiosity was shown to predict interpersonally generated PA as a function of an expanded attentional focus to interaction partners and their behavior. Individuals with stronger BAS's appear to be particularly sensitive to the rewarding features of intimate interactions. High socially anxious individuals appear to be particularly sensitive to the aversive qualities of small-talk or boring interactions. Taken together, these findings help to explain how people vary in terms of their affective reactions to interpersonal interactions with curiosity and social anxiety predicting differential subjective experiences within the same social interaction, supporting the dual-process model of optimal stimulation. Further understanding of these individual differences and the processes that underlie them, and the interaction between characteristics of both interaction partners, may help to broaden our understanding of the development of appetitive and aversive social interactions and relationships.

## References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. London: Sage.

Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology, 66*, 950–967.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*, 596–612.

Aron, A., Melinat, E., Aron, E. N., Vallone, R., & Bator, R. (1997). The experimental generation of interpersonal closeness: A procedure and some preliminary findings. *Personality and Social Psychology Bulletin, 23*, 363–377.

Ashton, M. C., Lee, K., & Paunonen, S. V. (2002). What is the central feature of extraversion? Social attention versus reward sensitivity. *Journal of Personality and Social Psychology, 83*, 245–252.

Barrett, L. F., & Russell, J. A. (1998). Independence and bipolarity in the structure of current affect. *Journal of Personality and Social Psychology, 74*, 967–984.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *BDI-II manual*. San Antonio: The Psychological Corporation.

Berlyne, D. E. (1960). *Conflict, arousal, and curiosity*. New York: McGraw-Hill.
Berlyne, D. E. (1971). *Aesthetics and psychobiology*. New York: Appleton-Century-Crofts.
Berlyne, D. E. (1978). Curiosity and learning. *Motivation and Emotion, 2*, 97–175.
Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The relationship closeness inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality and Social Psychology, 57*, 792–807.
Burger, J. M., & Caldwell, D. F. (2000). Personality, social activities, job-search behavior, and interview success: Distinguishing between PANAS trait positive affect and NEO extraversion. *Motivation and Emotion, 24*, 51–62.
Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin, 26*, 741–751.
Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology, 67*, 319–333.
Clark, L. A., & Watson, D. (1988). Mood and the mundane: Relations between daily life events and self-reported mood. *Journal of Personality and Social Psychology, 54*, 296–308.
Cooper, M. L. (2002). Personality and close relationships: Embedding people in important social contexts. *Journal of Personality, 70*, 757–782.
Côté, S., & Moskowitz, D. S. (1998). On the dynamic covariation between interpersonal behavior and affect: Prediction from neuroticism, extraversion, and agreeableness. *Journal of Personality and Social Psychology, 75*, 1032–1046.
Davis, D. (1982). Determinants of responsiveness in dyadic interaction. In W. Ickes & E. S. Knowles (Eds.), *Personality, roles, and social behavior* (pp. 85–139). New York: Springer-Verlag.
Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.
Depue, R. A. (1996). A neurobiological framework for the structure of personality and emotion: Implications for personality disorders. In J. F. Clarkin & M. F. Lenzenweger (Eds.), *Major theories of personality disorder* (pp. 347–391). New York: Guilford.
Fincham, F. D., & Linfield, K. J. (1997). A new look at marital quality: Can spouses feel positive nd negative about their marriage? *Journal of Family Psychology, 4*, 489–502.
Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*, 300–319.
Gable, S. L., Reis, H. T., & Elliot, A. J. (2000). Behavioral activation and inhibition in everyday life. *Journal of Personality and Social Psychology, 78*, 1135–1149.
Gray, J. A. (1987). *The psychology of fear and stress* (2nd ed.). New York: Cambridge.
Heimberg, R. G., Mueller, G. P., Holt, C. S., Hope, D. A., & Liebowitz, M. R. (1992). Assessment of anxiety in social interaction and being observed by others: The Social interaction anxiety scale and the social phobia scale. *Behavior Therapy, 23*, 53–73.
Hope, D. A., Heimberg, R. G., Juster, H. R., & Turk, C. L. (2000). *Managing social anxiety: A cognitive-behavioral therapy approach*. San Antonio, TX: Psychological Corporation.
Kashdan, T. B. (2002). Social anxiety dimensions, neuroticism, and the contours of positive psychological functioning. *Cognitive Therapy and Research, 26*, 789–810.
Kashdan, T. B. (2004a). Curiosity. In C. Peterson & M. E. P. Seligman (Eds.), *Character strengths and virtues: A handbook and classification* (pp. 125–141). Washington, DC: American Psychological Association and Oxford University Press.
Kashdan, T. B. (2004b). The neglected relationship between social interaction anxiety and hedonic deficits: Differentiation from depressive symptoms. *Journal of Anxiety Disorders, 18*, 719–730.
Kashdan, T. B., & Fincham, F. D. (2004). Facilitating curiosity: A social and self-regulatory perspective for scientifically based interventions. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 482–503). New Jersey: Wiley.
Kashdan, T. B., & Roberts, J. E. (2004a). Social anxiety's impact on affect, curiosity, and social self-efficacy during a high self-focus social threat situation. *Cognitive Therapy and Research, 28*, 119–141.
Kashdan, T. B., & Roberts, J. E. (2004b). Trait and state curiosity in the genesis of intimacy: Differentiation from related constructs. *Journal of Social and Clinical Psychology, 23*, 771–795.
Kashdan, T. B., Rose, P., & Fincham, F. D. (2004). Curiosity and exploration: Facilitating positive subjective experiences and personal growth opportunities. *Journal of Personality Assessment, 82*, 291–305.

Larsen, J. T., Hemenover, S. H., Norris, C. J., & Cacioppo, J. T. (2003). Turning adversity into advantage: On the virtues of the coactivation of positive and negative emotions. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Perspectives on an emerging field* (pp. 211–226). Washington, DC: American Psychological Association.

Leary, M. R., & Kowalski, R. M. (1995). The self-presentation model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 94–112). New York: Guilford Press.

Marshall, G. N., Wortman, C. B., Vickers, R. R., Jr., Kusulas, J. W., & Hervig, L. K. (1994). The Five-Factor model of personality as a framework for personality-health research. *Journal of Personality and Social Psychology, 67*, 278–286.

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy, 36*, 455–470.

McCrae, R. R., & Costa, P. T., Jr. (1997). Conceptions and correlates of openness to experience. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 825–847). San Diego: Academic Press.

Mellings, T. M. B., & Alden, L. E. (2000). Cognitive processes in social anxiety: The effects of self-focus, rumination and anticipatory processing. *Behaviour Research and Therapy, 38*, 243–257.

Norton, P. J., & Hope, D. A. (2001). Analogue observational methods in the assessment of social functioning in adults. *Psychological Assessment, 13*, 59–72.

Peters, R. A. (1978). Effects of anxiety, curiosity, and perceived instructor threat on student verbal behaviors in the college classroom. *Journal of Educational Psychology, 70*, 388–395.

Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy, 35*, 741–756.

Raudenbush, S., Bryk, A., Cheong, Y. F., & Congdon, R. (2000). *HLM 5: Hierarchical linear and nonlinear modeling*. Lincolnwood, IL: Scientific Software International.

Reis, H. T., Collins, W. A., & Berscheid, E. (2000). The relationship context of human behavior and development. *Psychological Bulletin, 126*, 844–872.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419–435.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin, 86*, 420–428.

Silvia, P. J. (2001). Interest and interests: The psychology of constructive capriciousness. *Review of General Psychology, 5*, 270–290.

Silvia, P. J. (2003). Self-efficacy and interest: Experimental studies of optimal incompetence. *Journal of Vocational Behavior, 62*, 237–249.

Spielberger, C. D. (1979). Preliminary Manual for the State-Trait Personality Inventory (STPI) Unpublished manuscript. University of South Florida, Tampa.

Spielberger, C. D., & Starr, L. M. (1994). Curiosity and exploratory behavior. In H. F. O'Neil Jr. & M. Drillings (Eds.), *Motivation: Theory and research* (pp. 221–243). Hillsdale, NJ: Lawrence Erlbaum Associates.

Stopa, L., & Clark, D. M. (1993). Cognitive processes in social phobia. *Behaviour Research and Therapy, 31*, 255–267.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn & Bacon.

Turner, S. M., Beidel, D. C., & Cooley, M. R. (1994). *Social effectiveness therapy: A program for overcoming social anxiety and social phobia*. Mt. Pleasant, SC: Turndel.

Turner, S. M., Beidel, D. C., & Wolff, P. L. (1996). Is behavioral inhibition related to the anxiety disorders? *Clinical Psychology Review, 16*, 157–172.

Watson, D., & Clark, L. A. (1999). *The PANAS-X: Manual for the positive and negative affect schedule-expanded form*. University of Iowa.

Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affect and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97*, 346–353.

Watson, D., Clark, L. A., McIntyre, C. W., & Hamaker, S. (1992). Affect, personality, and social activity. *Journal of Personality and Social Psychology, 63*, 1011–1025.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology, 76*, 820–838.

Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practice manual and conceptual guide*. New York: Wiley.

Zayas, V., Shoda, Y., & Ayduk, O. N. (2002). Personality in context: An interpersonal systems perspective. *Journal of Personality, 70*, 851–900.