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Social Anxiety Dimensions, Neuroticism, and the Contours of Positive Psychological Functioning[1]

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Although decades of research have examined relationships between social anxiety and negative outcomes, this study examined relations with indices of positive psychological functioning. In college students ($n = 204$), a factor analysis on self-report measures of positive psychological functioning derived 3 conceptually meaningful broad domains: Positive Subjective Experiences, Curiosity, and Appetitive Motivations. Analyses were conducted to test whether social interaction anxiety demonstrated unique relationships with positive psychological domains after controlling for shared variance with social observation anxiety (e.g., eating in public, public speaking) and neuroticism. Social interaction anxiety explained unique variance in all 3 domains after separately controlling for social observation anxiety and neuroticism. In contrast, social observation anxiety demonstrated near-zero relationships with all 3 domains, and neuroticism predicted Positive Subjective Experiences, and to a lesser degree, Curiosity. These data provide evidence for the unique association between social interaction anxiety and positive psychological functioning, with implications for future basic and applied research.

KEY WORDS: social anxiety; positive psychology; curiosity; positive affect.

INTRODUCTION

Individuals with extreme social anxiety (SA) or social anxiety disorder (SAD) experience a pervasive fear of social situations in which there is a perceived probability of experiencing scrutiny or rejection (American Psychiatric Association, 1994). Concomitant with persistent social fears, SAD is defined by significant distress and/or impairment. Accordingly, research has found individuals with high-SA experience higher negative affect, loneliness, and suicidal ideation, less satisfaction with their relationships, and less educational and career attainment than their low-SA or nondisordered counterparts (e.g., Davidson, Hughes, George, & Blazer, 1994; Safren,

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Heimberg, Brown, & Holle, 1997; Scheier, Carver, & Bridges, 1994; Wittchen, Fuetsch, Sonntag, Mueller, & Liebowitz, 2000).

Despite the tendency for researchers to view positive and negative subjective experiences as polar ends of a continuum, evidence suggests that these domains are largely independent and may be evaluated separately (cf. Bradburn, 1969; Cacioppo & Berntson, 1994; Watson, 2000). A substantial body of research on negative outcomes associated with excessive SA, has enabled researchers and clinicians to better understand and treat this debilitating condition (e.g., Beidel & Turner, 1998; Heimberg, Liebowitz, Hope, & Schneier, 1995, for reviews). However, living a "good life" involves more than simply experiencing minimal pain and discomfort. For example, social interactions and relationships have widely demonstrated health benefits (e.g., House, Landis, & Umberson, 1988) and are a powerful, adaptive source of reinforcement. Pleasurable social interactions are immediately reinforcing and potentially contagious, inducing positive experiences for other social interaction partners (building blocks for relationships; Fredrickson, 2001). In contrast to experiencing positive emotions in social situations by relating to others or feeling competent (e.g., making people laugh), individuals with excessive SA, by definition, experience extreme discomfort or avoid interactions altogether. Theoretically, SA individuals are relatively devoid of the psychological benefits of social activities. Despite comprehensive work on the fundamental need to relate to others and its association with well-being (e.g., Ryan & Deci, 2000), little empirical data exist on potential relations between SA and *positive* psychological functioning.

Not only do most people spend the majority of their waking hours in the presence of other people (volitionally or not), but the subjective quality of most individuals' experiences are enhanced when others are around (e.g., Larson, Csiksentimihayli, & Graef, 1982; Watson, Clark, McIntyre, & Hamaker, 1992). A potentially hard-wired, adaptive, fundamental human need is the desire to relate and belong with others (Baumeister & Leary, 1995; Deci & Ryan, 2000). Social inclusion, particularly in the context of close relationships, procures numerous advantages including increased protection from environmental dangers and opportunities to integrate novel knowledge and experiences from others, thereby expanding one's resources, sense of self, and well-being (cf. Aron & Aron, 1997). It has been proposed that individuals experience SA as a function of the perceived probability of being rejected, criticized, or ostracized from other individuals or a social group (Schlenker, & Leary, 1982). In this self-presentation model, individuals with excessive SA face a painful conflict in that they desire to relate to others and make good impressions yet doubt their ability to do so. Social anxiety may manifest in seemingly insignificant social encounters (e.g., ordering a meal at a restaurant) because these experiences may test one's *potential* inclusionary status as a desirable social being (Leary, 1990).

Experiencing high SA in tandem with strong desires for relatedness appears to be antithetical to well-being. Socially anxious individuals invest a good portion of their attention, energy, and time on persistent fears about impression management, hypervigilance to social threat cues, social avoidance/withdrawal behaviors, and postevent rumination (Clark & Wells, 1995; Rapee & Heimberg, 1997). Given that they devote personal resources to self-regulating negative outcomes, compared to low-SA, high-SA individuals likely experience a disruption in the experience of

positive outcomes. The present research examines relations between SA and positive psychological functioning.

Social Anxiety and Positive Subjective Experiences

Positive psychological functioning can be defined as a high frequency of positive subjective experiences, such as being challenged, experiencing autonomy, feeling good, and exercising human strengths such as courage, wisdom, and a sense of humor (Peterson & Seligman, 2002). Although extensive research supports the strong negative association between SA and self-esteem (e.g., Cheek & Buss, 1981; Clark & Arkowitz, 1975; Leary, 1983), only a handful of studies have examined relations between positive affect (PA) and SA (Brown, Chorpita, & Barlow, 1998; Kashdan & Roberts, 2001; Vittengl & Holt, 1998; Watson, Clark, & Carey, 1988a), and only two published studies, using overlapping samples, have investigated the relationship between SA and satisfaction with important life domains (Eng, Coles, Heimberg, & Safren, 2001; Safren et al., 1997). Furthermore, research on the relationship between SA and human strengths—such as curiosity, hope, optimism, and a sensitivity to reward cues—is virtually nonexistent.

Trait curiosity is the general tendency to recognize, pursue, and integrate novel and challenging information and experiences (Beswick, 1971; Kashdan, 2002; Kashdan, Rose, & Fincham, 2001). From an evolutionary perspective, the motivational state of curiosity aids survival because it attracts individuals toward novel, rewarding stimuli, which can expand one's knowledge base. Yet, it also is adaptive to fear and avoid novelty because the unknown can be aversive, even dangerous. Thus, curiosity cannot be divorced from anxiety as they work, in tandem, to predict the resolution of approach/avoidance conflicts (Spielberger & Starr, 1994, for a theoretical model).

Prior work has found that high, compared to low-SA, individuals are less likely to work on "interesting puzzle" activities when left alone in a room and surreptitiously observed (Plant & Ryan, 1985). In the interpersonal domain, high-SA individuals compared to low-SA individuals reported lower state curiosity during a reciprocal self-disclosure task with trained confederates (i.e., taking turns asking and answering questions that gradually require greater self-disclosure; Kashdan & Roberts, 2001). Although SA is expected to be negatively related with trait curiosity, SA is not expected to explain a large portion of variance. The reason is that high-SA individuals have the opportunity to satiate the desire for novel and/or challenging experiences through either social (e.g., meeting a distinguished scientist for coffee) or solitary avenues (e.g., reading books, Internet). Nonetheless, because the physiological and cognitive features of SA (e.g., self-focused attention, fear of negative evaluation, tension in response to perceived social threat) are expected to interfere with task engagement and approach behaviors (e.g., self-disclosure, asking questions), SA is expected to be uniquely associated with trait curiosity.

Hope and optimism form another family of constructs focusing on a positive future orientation. In terms of SA, Heimberg et al. (1989) found individuals with SAD demonstrate greater pessimistic explanatory styles for both negative and positive events compared to individuals with other anxiety disorders (see Hope, Gansler,

& Heimberg, 1989, for a review of studies in SA and shy populations). Despite promising findings, assessing optimism via attributional styles is qualitatively different than measuring dispositional optimism or generalized positive expectancies about future positive events (Scheier et al., 1994; see Snyder et al., 2000, for review). Related to optimism, Snyder and colleagues (2000) define hope as the belief that one's goals are attainable, that one can energetically pursue one's goals (i.e., perseverance), and that one can generate multiple pathways to achieve one's goals, even in the face of obstructions. Hope has a negative relationship with both trait anxiety and introversion (Snyder et al., 1991), each related to SA (e.g., Turner, Beidel, & Townsley, 1990). Left unaltered, beliefs that social goals are not attainable, such as making a good impression during a job interview or being able to express one's feelings to a romantic partner, may lead to higher social fear and social disengagement. Although no published studies exist on the relation between SA and dispositional optimism or hope, similar to negative relationships between SA and optimistic attributions, negative relationships are expected.

As a more global positive system, the Behavioral Activation System[3] (BAS) is broadly defined as "an emotional system characterized by incentive-reward motivation and subjective feelings of desire and positivity that activate forward locomotion and search behavior as a means of satisfying an animal's need for food, a sex partner, social interaction, a nesting place, and so forth" (Depue, 1996, p. 350). In short, the BAS directs individuals toward situations and experiences that may potentially yield reward, excitement, pleasure, and feelings of competence (i.e., appetitive or approach motivations; see Gable, Reis, & Elliot, 2000, for relations between BAS and positive experiences). Although no research has examined the relationship between SA and the BAS, several studies suggest a link between the development of SAD and the opposing self-regulatory system, the Behavioral Inhibition System (BIS; e.g., Biederman et al., 1993; Hayward, Killen, Kraemer, & Taylor, 1998; Schwartz, Snidman, & Kagan, 1999). The BIS directs individuals to avoid pain, anxiety, and other aversive states, and is characterized by a low threshold for physiological reactivity. As described in Kashdan and Herbert (2001), "Because behaviorally inhibited (BI) children are more cautious and reticent, they are less likely to engage in behaviors designed to explore their surroundings, including other people" (p.41). Characterizations of individuals high in the BIS and SA describe a primary motivation to avoid one's fears in lieu of pursuing rewards and pleasures. Research specifically demonstrates that SA individuals are hypersensitive to cues of risk and danger. Although there is no current research on the topic, it is speculated that SA individuals will report lower sensitivity to reward cues, and thus, SA is expected to be negatively associated with the BAS and subsequent appetitive motivations.

Overview of This Study

On the basis of the theoretical models of SA and the fundamental desire for feelings of belongingness, this study examined the relationships between SA and

[3] Alternatively coined the Behavioral Approach or Facilitation System.

indices of positive psychological functioning. To further explicate potential relations, the present research was informed by the latest work on the two dimensions of SA and hierarchical models of psychopathology.

Social anxiety does not appear to be a unitary construct as both mental health workers and scientists currently agree upon at least two valid dimensions. The first SA dimension, social interaction anxiety, refers to the severity of fears and avoidance behaviors concerning social interaction situations wherein there are potential reciprocal interpersonal exchanges of verbal or nonverbal information (contingent interactions; Leary, 1983). Individuals high in social interaction anxiety tend to fear and avoid social–evaluative situations such as meeting new people, initiating or maintaining conversations, and attending parties. This second SA dimension, social observation anxiety, refers to the severity of fears and avoidance behaviors wherein individuals are observed and potentially scrutinized by others. In contrast to social interaction anxiety, the impact of others is circumscribed to a more passive observant role (e.g., noncontingent interactions such as fearing the eye contact of others in an elevator; Leary, 1983). The most common fears are activities under the watchful eye of others such as public speaking and performance situations. These two dimensions have been shown to be conceptually distinct as social interaction anxiety shows stronger relationships with measures of generalized fears of negative evaluation, social avoidance, and shyness than do social observation anxiety, which shows specific, significant relationships with measures of fear and avoidance of performance situations (e.g., Heimberg, Mueller, Holt, & Hope, 1992; Leary, 1983; Mattick & Clarke, 1998). Individuals with social interaction anxiety have been shown to exhibit greater interpersonal impairment and a broader band of fears than individuals demonstrating high levels of social observation anxiety (e.g., Furmark, Tillfors, Stattin, Ekselius, & Fredrickson, 2000; Kessler, Stein, & Berglund, 1998; Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992; Turner, Beidel, & Townsley, 1992). Alternatively, the core feature of both SA dimensions is a fear of negative evaluation, and SA may be best conceptualized as a single continuum ranging from disinhibited, assertive behavior to the pathological extreme of SAD, with differing degrees of performance and social interaction anxiety along the continuum (cf. Rapee, 1995). This study assessed social interaction anxiety (i.e., difficulties interacting and expressing oneself with others) and social observation anxiety (i.e., fears about being observed by others, and having them notice one's distress) by using the Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS) developed by Mattick and Clarke (1998).

It was hypothesized that both social interaction and social observation anxiety would exhibit relations with positive psychological functioning. Individuals with high social observation anxiety may experience low positive psychological functioning during circumscribed social performance situations. However, only social interaction fears are proposed to be related to pervasive disruptions in the successful pursuit of relatedness needs, subsequent positive subjective experiences, and a general approach-oriented self-regulatory focus.

Finally, statistical analyses were conducted to determine whether potential negative relations between SA and measures of positive psychological functioning were a spurious function of neuroticism rather than the unique facets of SA. Recent structural models implicate trait anxiety, alternatively coined trait negative affectivity or

neuroticism, as a supraordinate, common, or vulnerability factor that explains much of the covariation among more specific constructs such as SA, depression, and anger (Brown et al., 1998; Widiger & Clark, 2000; Zinbarg & Barlow, 1996). Trait anxiety, as measured by the general items of the State-Trait Anxiety Inventory – Trait (STAI – Trait; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), is a proxy for neuroticism with large positive correlations between the STAI – Trait and various measures of neuroticism ($r = \sim.70$; Marshall, Wortman, Vickers, Kusulas, & Hervig, 1994; Watson & Clark, 1984). The higher-order construct of neuroticism (as it will be referred to for the remainder of this paper) and the lower-order factor of SA overlap considerably (Widiger & Clark, 2000; Zinbarg & Barlow, 1996). However, characteristics unique to high SA that are not necessary for neuroticism include core fears of being negatively evaluated by others and responding to perceived social–evaluative situations with excessively negative self-directed attention leading to disengagement from the social environment (e.g., avoidance, safety behaviors). As a more conclusive demonstration of predicted associations between SA and positive psychological functioning, it was predicted that findings would remain after partialling out the higher-order factor of neuroticism.

METHOD

Participants

The sample consisted of 214 undergraduate students attending the University at Buffalo, who received two extra credit points toward their course grade for participating. Students were recruited from a single class on Abnormal Psychology, which is a requirement for psychology majors in both the primary undergraduate program and the continuing education program at the University at Buffalo. The latter program tends to have students who are older than the prototypical student. Ten participants did not complete SA measures or at least one measure of positive psychological functioning (3 males, 7 females), leaving a final sample of 204 participants (70 males, 121 females, 13 unreported).

The average age of the present sample was 20.86 ($SD = 4.30$). As for their reported ethnicity: 62.7% ($n = 128$) were European American, 6.9% ($n = 14$) were Asian American, 6.9% ($n = 14$) were African American, 1.0% ($n = 2$) were Indian or Peruvian American, 22.5% ($n = 19$) were of an unspecified ethnicity.

Social Anxiety Measures

Social Anxiety Symptomatology

Severity of social anxiety symptoms was assessed with the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998), a 19-item measure of general fears and avoidance behaviors concerning social interactions (e.g., "I become tense if I have to talk about myself or my feelings"; "I am nervous mixing with people I don't know very well"). Participants were also administered the Social Phobia Scale

(SPS; Mattick & Clarke, 1998), a 20-item measure of social evaluation concerns, anxiety related to being observed by others (e.g., "It would make me self-conscious to eat in front of a stranger at a restaurant"; "I worry about shaking or trembling when I'm watched by other people"), and concern about others noticing one's social distress. The SIAS, measuring social interaction anxiety, assesses anxiety when interacting with other people such as initiating and maintaining conversations, whereas the SPS, measuring social observation anxiety, assesses anxiety when engaging in activities in the presence of others (e.g., giving a speech, eating in a restaurant) and when being under the watchful eye of others (e.g., being looked at in an elevator; Mattick & Clarke, 1998). Several studies have provided evidence attesting to the sensitivity of these scales to treatment change (e.g., Cox, Ross, Swinson, & Direnfeld, 1998). More importantly, several studies have provided evidence of the construct validity of these measures with the number of feared social interaction situations showing stronger associations with the SIAS and the number of feared social performance situations showing stronger associations with the SPS (e.g., Brown et al., 1997). Cronbach's alpha for the SIAS and SPS in the present sample was .92 and .94, respectively. Respondents completed items using 4-point Likert scales.

Neuroticism Measure

The 10-item State-Trait Anxiety Inventory – Trait (STAI – Trait; Spielberger et al., 1983) was administered to index the construct of neuroticism (Marshall et al., 1994; Watson & Clark, 1984). The general items of the STAI – Trait tap the broad personality domain of neuroticism with items such as "I am a steady person" (reverse-scored) and "I feel inadequate." Decades of research have demonstrated the construct validity of the STAI as a measure of individual differences in perceiving and reacting to stress and threat in psychiatric and medical patients, working adults, and college students (Spielberger & Sydeman, 1994). The alpha for the present sample was .83. Respondents completed items using a 4-point Likert scale.

Positive Psychological Functioning Questionnaires

Positive Affect Measures

Trait positive affect was measured with the 10-item PA subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988b). The PA subscale assesses pleasant, activated affective states such as excitement, joy, elation, attentiveness, enthusiasm, and interest. These pleasant affective states characterize the subjective experience evoked when approaching rewards in the environment. A number of studies have shown that trait PA is relatively stable over a number of years, is positively associated with relevant areas such as job and relationship satisfaction, and exercise and social activities, and tends to fluctuate according to sleep–wake patterns (e.g., Watson, 2000; Watson et al., 1992; Watson & Walker, 1996). For this study, respondents were instructed to report how they "generally feel." The alpha in the present sample was .86. Respondents completed items using a 5-point Likert scale.

Subjective vitality, defined as feelings of vigor and exuberance, was measured with the 7-item Subjective Vitality Scale – Trait version (SVS; Ryan & Fredrick, 1997). Subjective vitality, as a disposition, refers to individual differences in enduring levels of calm energy available to the self. Feelings of vitality are conducive to optimal states of psychological functioning such as well-being and productivity (Ryan & Deci, 2001). Several studies have shown the SVS to be associated with self-actualization, mental health, self-esteem, positive emotions, and greater self-motivation. Conversely, indices of distress and external locus of control are associated with less vitality (Ryan & Fredrick, 1997). The alpha for the present sample was .91. Respondents completed items using a 7-point Likert scale.

Subjective Well-Being Measures

Subjective well-being was assessed with two measures. The 18-item Well-Being scale (WBS) of the Multidimensional Personality Questionnaire (Tellegen, 1982) measures the disposition to feel good about oneself, the future, and general cheerfulness (e.g., "I often feel happy and satisfied for no particular reason"; "For me life is a great adventure"; "Most days I have moments of real fun or joy"). A series of large-scale twin studies by Tellegen, Lykken, and their colleagues have attested to the stability and construct validity of the WBS (see Lykken, 2000). The alpha coefficient for the present sample was .92. Respondents completed items using a 4-point Likert scale.

The 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was administered to assess respondents' cognitive judgments about their satisfaction with their current life situation (e.g., "The conditions of my life are excellent"). while the WBS measures both the subjective emotions (i.e., high positive emotions, low negative emotions) and cognitive appraisals (i.e., life satisfaction, positive future orientation) that comprise happiness, the SWLS is circumscribed to the cognitive appraisal component of happiness. Numerous studies have shown the SWLS to be sensitive to the influence of positive and negative life events, associated with specific domains of satisfaction (e.g., relationships, leisure, education; Oishi & Diener, 2001), and convergent with interview ratings, informant reports, and intraindividual daily variability in positive and negative affect (e.g., Diener & Lucas, 2000, for review). The alpha for the present sample was .87. Respondents completed items using a 7-point Likert scale.

Curiosity Measures

Trait curiosity was assessed with two measures. The 10-item State-Trait Curiosity Inventory – Trait (STCI – T; Spielberger, 1979) is a face-valid measure of general interest and curiosity (e.g., "I am interested"; "I feel eager"). The STCI has been shown to be positively associated with college classroom behaviors such as student's spontaneous questions and responses to teacher questions (Peters, 1978), and associated in theoretically expected ways with indices of psychological and physical health (Marshall et al., 1994). The alpha for the scale in the present sample was .75. Respondents completed items using a 4-point Likert scale.

The seven-item Curiosity and Exploration Inventory was also administered (CEI; Kashdan et al., 2001). The CEI has two dimensions: (1) Exploration—general

appetitive tendencies to explore the environment in search of novel and exciting information and experiences (e.g., "Everywhere I go, I am out looking for new things or experiences") and (2) Flow—the propensity to be deeply absorbed in intrinsically motivating and challenging activities such that time becomes distorted and distractions are excluded from consciousness (e.g., "When I am participating in an activity, I tend to get so involved that I lose track of time"). The CEI is associated, in theoretically expected ways, to indices of positive subjective experiences (e.g., vitality, subjective well-being, present hedonistic time perspective), human strengths (e.g., hope, behavioral activation system), and pathology-oriented variables (e.g., boredom proneness), even after controlling for social desirability and positive affect (e.g., Kashdan et al., 2001). The CEI total score was used as an index of curiosity and exploratory behaviors. The alpha for the CEI in the present sample was .76. Respondents completed items using a 7-point Likert scale.

Hope and Optimism Measures

Two measures were administered to address future orientation. The 12-item Hope Scale (HS; Snyder et al., 1991), with four filler items, is a dispositional measure of one's perceived goal pursuit skills and strategic goal-orientation. The HS has two subscales: (1) hope agency: belief that one can energetically pursue and achieve one's goals (e.g., "I meet the goals that I set for myself"; "My past experiences have prepared me well for the future"), and (2) hope pathways: belief that one can generate multiple routes to circumvent obstructions to goals (e.g., "I can think of many ways to get out of a jam"; "Even when others get discouraged, I know I can find a way to solve the problem"). Several studies have found the HS to be associated with adaptive coping strategies to stressful events, pain, and disability, successful performance in athletic events and academic achievements (controlling for ability), and indices of social support and satisfaction (see Snyder, 2000, for review). Cronbach's alpha for the Hope-Total in the present sample was .87. Respondents completed items using an 8-point Likert scale.

To measure dispositional optimism, we administered the six-item Revised Life Orientation Test (LOT-R; Scheier et al., 1994). For the LOT-R, optimism is defined as positive global expectancies for the future, including a high likelihood of positive events and low likelihood of negative events (e.g., "In uncertain times, I usually expect the best"). Several studies have found the LOT-R to be associated with health promotion such as adaptive coping to stress (e.g., tension reduction and utilization of social support), psychological adjustment to pregnancy, cancer, and increases in exercise during a cardiac rehabilitation program (Carver & Scheier, 2001; Scheier, Carver, & Bridges, 2001, for reviews). The alpha for the present sample was .81. Respondents completed items using a 7-point Likert scale.

Behavioral Activation System Measure

The 13-item BAS scale (BAS; Carver & White, 1994), consisted of three related factors entitled "Reward Responsiveness," "Drive," and "Fun Seeking," was administered. Reward Responsiveness refers to positive reactivity to possible positive

Table I. Means and Standard Deviations for Individual Difference Variables

Variable	*M*	*SD*
Social Interaction Anxiety Scale	25.60	14.85
Social Phobia Scale	24.48	16.09
State-Trait Anxiety Inventory	21.91	6.68
PANAS – Positive Affect	34.10	6.69
Subjective Vitality Scale	32.65	7.44
Well-Being Scale	51.00	10.14
Satisfaction with Life Scale	20.71	6.13
State-Trait Curiosity Inventory	24.30	6.45
Curiosity and Exploration Inventory	32.70	6.52
Hope Scale	46.29	8.47
Revised Life Orientation Test (Optimism)	26.91	7.02
BAS Scale – Reward Responsiveness	16.53	2.18
BAS Scale – Drive	11.32	2.31
BAS Scale – Fun Seeking	11.94	2.03

Note. $N = 204$. Social Interaction Anxiety Scale measures social interaction anxiety; Social Phobia Scale measures social observation anxiety.

outcomes, Drive refers to the active tendency to seek out rewards, and Fun Seeking refers to the propensity to be spontaneous and engage in novel activities. Overall, the BAS measures sensitivity to reward cues. The subscales were used as indices of this broad motivational system. Several studies have found the BAS to be sensitive to positive life events and the presence of experimental reward cues (e.g., Carver & White, 1994; Gable et al., 2000). The alphas for the BAS – Reward, BAS – Drive, and BAS – Fun scales in the present sample were .81, .79, and .75, respectively. Respondents completed items using a 4-point Likert scale.

RESULTS

Preliminary Analyses

The means and standard deviations for all self-report scales are reported in Table I.[4] Of interest, the average score of participants on the SPS ($M = 24.48$; $SD = 16.09$) was elevated compared to other undergraduate and community samples. The average score of participants on the SPS was approximately one standard deviation above the undergraduate means reported by Mattick and Clarke (1998) and Heimberg et al. (1992). Participants also had elevated scores on the SIAS ($M = 25.60$; $SD = 14.85$) compared to means reported by the aforementioned researchers.

Despite a slightly higher than typical mean age for our college student sample ($M = 20.86$; $SD = 4.30$), age had no relationship with the SIAS, SPS, or STAI – Trait (all $ps > .50$). Thus, age was not included in subsequent analyses. The SIAS and SPS were strongly correlated ($r = .82$), with each also related to trait anxiety ($r = .53$ and .47, respectively). These significant relationships justify the partial correlation

[4]Zero-order correlations are available upon request.

and hierarchical regression analyses conducted to determine the potentially distinct relationships between each SA dimension and the higher order factor of neuroticism with indices of positive psychological functioning.

To examine the relations among the 11 positive psychological functioning indices under study, a principal components analysis with an oblique (promax) rotation was conducted. Results produced three factors with eigenvalues exceeding 1.0 (the fourth factor had an eigenvalue of 0.65). After rotation, the first factor had an eigenvalue of 5.17, the second factor had an eigenvalue of 1.40, and the third factor had an eigenvalue of 1.11. In total, the three factors accounted for 69.78% of the sample variance. Observations of the scree plot supported a clear break after three factors. Table II shows the factor loadings of the three-factor solution (using the structure matrix).

The first factor, labeled Positive Subjective Experiences, was composed of measures assessing positive affect, subjective vitality, subjective well-being, satisfaction with life, hope, and optimism. The second factor, labeled Curiosity, was composed of two measures tapping the curiosity construct. Considering that curiosity is defined as a positive emotional–motivational system, it was not surprising that measures of positive affect, hope (goal perseverance and strategic goal-orientation), and the Drive (approach-orientation) subscale of the BAS also loaded on this factor at a moderate level. The third factor, labeled Appetitive Motivations, was composed of the three BAS subscales, which assess sensitivity to reward cues in the environment, approach-oriented goal efforts, and pleasure seeking. Further analyses used derived factor scores to measure these three broad factors. Factor scores were derived directly from the factor analysis and used in subsequent analyses. Scales and subscales that loaded on more than one factor were included in each factor score. Correlations among the factor scores were moderate to strong ($r_{\text{Positive Subjective Experiences, Curiosity}} = .53$, $r_{\text{Positive Subjective Experiences, Appetitive Motivations}} = .42$, $r_{\text{Curiosity, Appetitive Motivations}} = .42$).

Table II. Promax-Rotated Factor Loadings for Indices of Positive Psychological Functioning

Variable	Factor 1 Positive Subjective Experiences	Factor 2 Curiosity	Factor 3 Appetitive Motivations
PANAS – Positive Affect	.75	.70	
Subjective Vitality Scale	.86	.55	
Well-Being Scale	.79	.57	
Satisfaction with Life Scale	.84		
State-Trait Curiosity Inventory	.56	.87	
Curiosity and Exploration Inventory		.89	
Hope Scale	.69	.56	
Revised Life Orientation Test	.81		
BAS – Reward Responsiveness			.78
BAS – Drive		.38	.78
BAS – Fun Seeking			.87
Variance explained	47.02	12.68	10.08

Note. $N = 204$. Factor loadings between −.35 and .35 are not shown. Figures in bold refer to the factor that each variable loads on the highest. PANAS = Positive and Negative Affect Schedule; BAS = Behavioral Activation System Scale.

Unique and Shared Relationships Between SA Dimensions and Positive Psychological Factors

As predicted, there were significant correlations between social interaction anxiety and Positive Subjective Experiences, Curiosity, and Appetitive Motivations (rs = −.51, −.42, and −.27, respectively; all ps < .001). These associations remained significant even after controlling for the effects of social observation anxiety (prs = −.34, −.28, and −.26, respectively; all ps < .001).[5] In contrast, although social observation anxiety was significantly associated with Positive Subjective Experiences, Curiosity, and Appetitive Motivations (rs = −.40, −.33, and −.16, respectively; all ps < .05), all relationships were reduced to near-zero after controlling for the shared variance with social interaction anxiety (prs = .06 to .14; all ps > .05). Thus, initial inverse relations between social observation anxiety and the broad factors of positive psychological functioning appear to be a function of social interaction anxiety (or another relevant construct that was not presently measured).

Relationship Between Social Interaction Anxiety and Positive Psychological Factors Controlling for Neuroticism

To test the unique contribution of social interaction anxiety to Positive Subjective Experiences, Curiosity, and Appetitive Motivations after controlling for neuroticism, a series of hierarchical regressions were conducted. For each regression, at Step 1, gender was entered as a covariate. At Step 2, the STAI – Trait was entered as a main effect, and at Step 3, SIAS was entered as a main effect. This order of entry allowed for the primary examination of whether relationships between social interaction anxiety and positive psychological functioning existed beyond the variance explained by neuroticism, and if so, the incremental variance attributed to social interaction anxiety (see Table III). Secondary to these tests, I examined the regression coefficient of the STAI – Trait entered at Step 2, at Step 3, following the entry of the SIAS. This additional examination allowed for direct head-to-head comparisons of the unique variance accounted for by social anxiety and neuroticism for each domain of positive psychological functioning.

As Table III shows, social interaction anxiety made a statistically significant contribution to explaining Positive Subjective Experiences, $t(200) = -3.26$, $pr = -.22$, $p < .001$, beyond the variance explained by the higher-order factor of neuroticism. Although unreported in Table III, at Step 3 (the final step) of the regression model, neuroticism continued to make a statistically significant contribution to the prediction of Positive Subjective Experiences after controlling for social interaction anxiety, $t(200) = -10.70$, $pr = -.60$, $p < .001$. Despite the unique predictive power of both characteristics, neuroticism was a better predictor of Positive Subjective Experiences than was social anxiety.

[5] Zero-order correlations among social interaction anxiety, social observation anxiety, and individual measures of positive psychological functioning are available upon request. Similarly, partial correlations between each dimension of social anxiety and each measure of positive psychological functioning, controlling for the opposing dimension of social anxiety, are available upon request.

Table III. Contributions of Social Interaction and Trait Anxiety to Broad Factors of Positive Psychological Functioning: Multiple Regression Analyses

	Positive Subjective Experiences			Curiosity			Appetitive Motivations		
	β	pr	$R^2\Delta$	β	pr	$R^2\Delta$	β	p	$R^2\Delta$
Step 1: Covariates			.00			.00			.00
Gender[a]	−.01	−.01		.06	.06		.06	.06	
Step 2: Negative Affectivity			.50***			.13***			.03*
STAI-Trait [b]	−.71***	−.71***		−.37***	−.37***		−.17*	−.17*	
Step 3: Social Anxiety			.03***			.08***			.05**
SIAS [c]	−.19***	−.23***		−.33***	−.30***		−.25**	−.22**	
Total R^2			.53***			.21***			.08***
Total adjusted R^2			.52***			.20***			.07***

Note.. $N = 204$. Each domain was derived from a principal components analysis.
[a] 1 = female, 2 = male.
[b] (State-Trait Anxiety Inventory – Trait; Spielberger et al.,1983).
[c] (Social Interaction Anxiety Scale; Mattick & Clarke, 1998).
* $p < .05$. ** $p < .01$. *** $p < .001$.

As Table III shows, social interaction anxiety made a statistically significant contribution to explaining Curiosity, $t(200) = -4.44$, $pr = -.30$, $p < .001$, beyond the variance explained by the higher-order factor of neuroticism. At Step 3, the final step, neuroticism continued to make a statistically significant contribution to the prediction of Curiosity after controlling for social interaction anxiety, $t(200) = -2.63$, $pr = -.18$, $p < .05$. Despite the unique predictive power of both characteristics, social interaction anxiety was a better predictor of Curiosity than was neuroticism.

As Table III shows, social interaction anxiety made a statistically significant contribution to explaining Appetitive Motivations, $t(200) = -4.44$, $pr = -.30$, $p < .001$, beyond the variance explained by the higher-order factor of neuroticism. In contrast, at Step 3, the final step of the regression model, neuroticism had no relation to Appetitive Motivations after controlling for social interaction anxiety, $t(200) = -0.46$, $pr = -.03$, $p > .60$. Thus, these findings indicate that only social interaction anxiety made a unique contribution in explaining Appetitive Motivations.

Overall, Curiosity and Appetitive Motivations appeared to be specifically relevant to social interaction anxiety, even after controlling for the higher-order factor of neuroticism. In contrast, both neuroticism and social interaction anxiety accounted for unique variance in explaining Positive Subjective Experiences. As can be seen in Table III, the overall models for Positive Subjective Experiences, Curiosity, and Appetitive Motivations explained 52, 20, and 7% of the variance, respectively. Despite the unique relationships between SA, Positive Subjective Experiences, Curiosity, and Appetitive Motivations, a good portion of variance needs to be explained outside of the currently measured distress-related constructs.

DISCUSSION

Empirical evidence indicates that SA, and its extreme variant, social phobia or SAD, is characterized by dysfunction in the cognitive, interpersonal, educational, and occupational domains (Schneier et al., 1994; Wittchen et al., 2000). We sought to extend this work by examining the interface between SA and positive subjective experiences, human strengths, and appetitive motivations. With the recent surge of attention to the scientific study of subjective well-being and optimal human functioning (see Seligman & Csiksentmihalyi, 2000), advances have been made in the nomenclature and refined measurement of positive psychological functioning. Using psychometrically sound measures, analyses were conducted to test whether there were specific, unique relationships between SA and indices of positive psychological functioning.

Both social interaction anxiety (e.g., initiating and maintaining conversations) and social observation anxiety (e.g., performance anxiety, anxious about having symptoms observed by others) were significantly and negatively related to all domains of positive psychological functioning. To better understand the unique influence of each SA dimension, zero-order correlations were followed up by partial correlations controlling for the other dimension. As predicted, social interaction anxiety continued to demonstrate significant negative relations with all domains of positive psychological functioning. In contrast, relations between social observation anxiety

and positive psychological functioning were all nonsignificant. The failure for social observation anxiety to be uniquely related to positive psychological functioning is likely to be a function of the discrete nature of anxiety-inducing situations wherein one is the object of observation (e.g., being in an elevator when someone walks in, talking in a meeting) or communicating to an audience (e.g., giving an oral presentation in class). It was expected that positive outcomes would have stronger relations with the pervasive physiological and emotional distress, and negative cognitions attributed to general social interaction fears. If one of the primary desires of humans is to relate to others, then disengaging from social goals or being preoccupied with one's perceived inability to meet one's goals can be expected to not only cause distress, but be related to disruptions to an approach-oriented, reward-seeking self-regulatory focus. This approach-oriented self-regulatory focus has been linked to positive subjective experiences and personal growth (e.g., Liberman, Molden, Idson, & Higgins, 2001; Ryan & Deci, 2000). These results provide further evidence of the potential distinctiveness of SA dimensions. Future work can determine whether the present findings can be replicated with individuals who meet diagnostic criteria for Nongeneralized and Generalized subtypes of SAD. For this study, further analyses were conducted to test whether trait anxiety, an index of neuroticism or general negative affectivity, was primarily responsible for relations between social interaction anxiety and positive psychological functioning.

The present results indicated that there are unique facets inherent to social interaction anxiety such that negative relationships were found with all indices of positive psychological functioning after controlling for neuroticism. Neuroticism, the general proneness to perceive stress and react to stress with elevated distress (Spielberger & Sydeman, 1994), was strongly related to Positive Subjective Experiences, minimally related to Curiosity, and unrelated to Appetitive Motivations. In contrast, social interaction anxiety was uniquely related to all indices of positive psychological functioning. These findings are consistent with prior work demonstrating that perceived social support and intimacy, feelings of belongingness, and the size of social networks are strongly related to PA, pleasurable interactions, and perceived quality of life (e.g., Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Vittengl & Holt, 1998; Watson et al., 1992).

As for the dimensions of positive psychological functioning, a principal components analysis supported the existence of three supraordinate factors labeled Positive Subjective Experiences, Curiosity, and Appetitive Motivations. As predicted, despite the overlap with positive subjective experiences, curiosity emerged as a unique positive psychological dimension. These findings fit with prevailing theories of curiosity as the emotional–motivational system activated by stimuli perceived to create or resolve meaningful gaps in knowledge and experience (e.g., Kashdan et al., 2001; Loewenstein, 1994). Exploring these novel experiences, in turn, increases opportunities for personal growth. The Appetitive Motivations dimension was composed of BAS components or the hard-wired self-regulatory system that motivates and responds to cues associated with pleasure and excitement. Not surprisingly, there was some overlap between the approach-orientations of curiosity and the BAS. However, curiosity appeared to explain a greater portion of the variance than did the BAS, indicating that the desire to know more about the self and the environment, and the

tendency to shift attention away from extraneous information in the environment, may be a more important intervening variable to understanding positive functioning. The differentiation of Appetitive Motivations from other conceptually similar constructs such as positive affect and hope may be a result of the global nature and neurological basis of the BAS (e.g., Depue, 1996) compared to other indices of positive psychological functioning. Despite the intriguing nature of the resulting factors, future work using subjective, behavioral, and physiological referents will be needed to further elucidate the shared and specific features of distinct positive psychological functioning constructs. Exploring the interactive relationship of SA and different domains of positive psychological functioning may aid researchers in understanding the broad issue of *how* adaptational goals are enabled and thwarted. At present, these findings provide preliminary utility in understanding the relationship between SA dimensions and positive psychological functioning.

Although the cross-sectional nature of this study limits further interpretation of these findings, other work suggests that excessive SA leads to lower positive emotions, subjective well-being, and curiosity in both interpersonal situations and as a more pervasive deficit (e.g., Kashdan & Roberts, 2001; Safren et al., 1997; Watson et al., 1988a). Social activity is arguably the most potent source of human hedonic experiences (e.g., House et al., 1988; Larson et al., 1982). The present findings suggest that general distress may be less important than interpersonal distress and impairment in thwarting approach-oriented motives, sensitivity to rewards, and the pursuit of self-expansion activities and experiences (e.g., curiosity; Kashdan et al., 2001). However, general distress appears to be of more importance than social anxiety in understanding general positive subjective experiences such as vitality, positive affect, and optimism. This may be a result of many of these positive states being virtual opposites of depressive symptoms such as fatigue, anhedonia, and hopelessness. Experimental and naturalistic studies using multimethod assessment techniques could provide a better understanding of why neuroticism is a stronger predictor of positive subjective experiences and social interaction anxiety is a stronger predictor of curiosity and appetitive motivations.

A substantial portion of variance was explained for Positive Subjective Experiences, but significantly less was explained for Curiosity and Appetitive Motivations. This was consistent with initial hypotheses, as curiosity and appetitive motivations tend to be domain-specific (e.g., Loewenstein, 1994). Although SA individuals may avoid or experience distress during potentially rewarding social activities, their personal strivings for pleasure and novelty can be met in nonsocial activities such as reading, movies, and even developing interactive relationships over the Internet. Future work is needed to determine how high- and low-SA individuals differ (e.g., rumination, self-focused attention, perfectionism, self-handicapping) in their effort, routes, and success in obtaining pleasure and desirable challenges.

Summary and Future Directions

Despite a number of significant findings, the limitations of the present investigation include the sole use of self-report measures, the use of a nonclinical sample, and the cross-sectional design. Although findings provided evidence of the unique

association between social interaction anxiety and positive psychological functioning, replication studies should assess relations by measuring multiple response systems. This includes public speaking and social interaction experimental tasks with cognitive (e.g., Hofmann & Dibartolo, 2000) and physiological assessment (e.g., Panayiotou, & Vrana, 1998). Second, individuals with high SA are more susceptible to providing negative self-appraisals of their lives. The typical response of an individual with high SA to a positive experience, such as having someone be receptive to sexual interest, is to discount its significance and provide an external attribution (Alden & Wallace, 1995; Hartman, 1983). The use of ecological momentary assessment techniques could be useful in obtaining data in a timely manner that captures immediate self- and situational-appraisals and the transient quality of positive mood states (e.g., experiencing curiosity while reading a mystery novel tends to end when the enigma is solved).

Nonetheless, our test of the unique contribution of SA to positive psychological functioning was conservative. Structural models of both affect and anxiety disorders have found SA and other discrete emotional disturbances (e.g., depression, uncontrollable worry) to be lower-order factors of a common, supraordinate diathesis alternatively defined as trait anxiety, negative affectivity, or neuroticism (e.g., Widiger & Clark, 2000; Zinbarg & Barlow, 1996). Theoretically, it makes little sense to remove the variance of a higher-order factor from a lower-order factor other than to determine the unique utility of a construct. Testing the specificity of SA by controlling for neuroticism removes substantive variance inherent to the construct of SA. Results support the designation of SA and neuroticism as separate conditions with a great deal of symptom and conceptual overlap. The present findings add to the existing knowledge base of the significant life disruptions associated with social fears and avoidance behaviors. Overall, although these findings need to be replicated using larger samples, different age and ethnic groups, and clinical populations, there appear to be unique relationships between SA and positive psychological functioning, especially with curiosity and appetitive motivations.

Individuals with SA/SAD have been described as living in a social cocoon, where they fail to develop the skills necessary to develop relationships, side stepping opportunities and challenges (Beidel & Turner, 1998). The fear of being placed into anxiety-provoking social–evaluative situations more often than not leads to avoidance or minimal social participation (e.g., obsequious nodding and smiling), overriding potential rewards they could experience in their relationships, avocations, career, and overall well-being. Prospective studies can determine developmental pathways to better understand the potential role of socially anxious cognitions, behaviors, and rejection experiences in disrupting positive psychological functioning. This includes the specific role of self-presentation concerns and relatedness needs (see Baumeister & Leary, 1995, and Schlenker & Leary, 1982, for theories) on both SA and positive psychological functioning. Besides basic research, it is suggested that future SA/SAD clinical studies consider augmenting the domains of therapeutic change to address areas such as positive emotions, subjective well-being, human strengths, and appetitive motivations, in addition to current outcome measures of distress and impairment (Kashdan & Herbert, 2001). Broadening treatment outcome measures to encompass negative and positively valenced constructs may aid in studies comparing the

efficacy of different treatment modalities (e.g., cognitive–behavioral vs. psychopharmacological vs. combined treatments). Not all socializing is pleasurable; unpleasant and problematic social interactions actually can lead to negative affect. Consequently, the goal of treatment should not only be aimed to decrease social distress and increase social activity, but to focus on the capacity of individuals to experience more fulfilling interactions, relationships, and lives.

On the basis of the present preliminary investigation, social interaction anxiety is uniquely and inversely related to a wide array of positive subjective experiences and human strengths, even after controlling for the common trait diathesis of anxiety. Further study on the interface between SA and positive psychological functioning will need to address interactive relations and processes between pathology-oriented and positively valenced constructs. For example, perhaps the relation between SA and positive psychological functioning is a function of labile self-esteem, excessive self-directed attention, loneliness, perceived quality of social performances (e.g., social self-efficacy), or feedback from achievement-oriented or interpersonal strivings (rejection or praise). Similarly, perhaps social rejection concerns create anxiety *and* undermine positive subjective experiences, thereby reducing socially risky approach-oriented behaviors. Future research should explore structural models of relationships among SA, positively valenced constructs, and moderating and mediating mechanisms. It is hoped that the present findings will not only stimulate further investigation of the interrelationship between SA and positive psychological functioning, but also relationships between other psychopathological conditions (e.g., disruptive behavior disorders, personality disorders) and human strengths (e.g., gratitude, forgiveness, courage, self-control).

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