

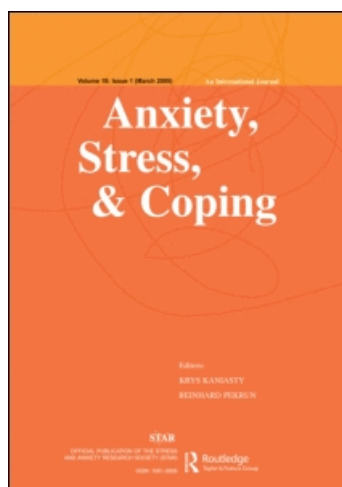
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## **Social anxiety and the experience of positive emotion and anger in everyday life: an ecological momentary assessment approach**

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A few recent studies have found evidence showing that social anxiety is associated with diminished positive affect and elevated anger. However, prior work has relied on trait self-report measures of global positive mood or anger. In this preliminary study, we examined how trait social anxiety relates to moment-to-moment positive and angry emotional states as people navigate through their natural environment in a given day. Of additional interest was whether any associations were limited to social situations or were evident more broadly in non-social situations as well. For 14 days, 38 non-clinical community adults carried electronic diaries to assess their experience of positive emotions, anger, and their current social context and activity. Participants were randomly prompted up to four times per day, leading to 1702 observations. Results showed that social anxiety was associated with less time spent feeling happy and relaxed and more time spent feeling angry throughout the day. In general, people felt happier when they were with other people compared to being alone. Interestingly, people with relatively higher levels of social anxiety reported fewer and less intense positive emotions and greater anger episodes across social and non-social situations.

**Keywords:** social anxiety; positive emotion; anger; ecological momentary assessment

If we are going to understand the nature of personality traits such as social anxiety, and emotional disturbances such as elevated social anxiety, there is a pressing need to understand how people operate in their natural, everyday environment. Exploring the emotional experiences of socially anxious people provides insight into how they are able to manage ongoing life stressors and capitalize on positive events. This is because emotions play an important role in daily events, providing useful information about a person's sensitivity to rewards (positive emotions), sensitivity to pain and punishment (negative emotions), and motivation to approach and avoid stimuli in particular situations (Lewis, Haviland-Jones, & Barrett, 2008; Watson, Wiese, Vaidya, & Tellegen, 1999). To date, most of the work on affect linked to social anxiety has been focused on anxious and depressive feelings. This inevitably led to long standing, untested assumptions about the phenomenology and consequences of social anxiety. For instance, many researchers assume that social anxiety, like other anxiety related conditions, is not related to positive emotions (Clark, Steer, & Beck, 1994; Clark & Watson, 1991). In addition, the typical person with social anxiety has

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often been defined as shy, submissive, behaviorally inhibited, and emotionally overcontrolled (Beidel & Turner, 2007; Gilbert, 2001), with little consideration of how anger might play a role in heterogeneous behaviors that also include verbal and physical aggression and other disinhibited responses.

Based on recent theory and research, two emotional experiences that are potentially relevant to socially anxious people are positive emotions (Hughes et al., 2006; Kashdan, 2007) and anger (Erwin, Heimberg, Schneier, & Liebowitz, 2003; Hofmann, Heinrichs, & Moscovitch, 2004). There is reason to be concerned that social anxiety is negatively associated with positive affect and positively associated with anger. A pattern of infrequent positive emotions and frequent anger could partially account for the compromised quality-of-life associated with social anxiety. For instance, in the short term, there is evidence that positive emotions facilitate exploration, play, cognitive flexibility, and energy restoration; in the long term, there is evidence that positive emotions are linked to the growth of skills and meaningful relationships (e.g., Ashby, Isen, & Turken, 1999; Burns et al., 2008; Fredrickson, 1998; Fredrickson & Branigan, 2005). Relatively infrequent positive affect would limit these adaptive intrapersonal and interpersonal outcomes. As for anger, researchers continue to find associations with serious negative consequences including violence and aggression, physical health problems (e.g., heart disease, hypertension), substance use problems, and impaired social interactions and relationships (e.g., Deffenbacher, 2003; Kassirer, 1995; Swaim, Deffenbacher, & Wayman, 2004). Relatively frequent anger might further amplify the psychological, social, and physical health risks tied to social anxiety.

In the present study, we examined whether and how trait social anxiety relates to the experience of positive emotions and anger in everyday life. Perhaps of greater importance, we examined the influence of social versus non-social situations on how trait social anxiety relates to positive emotions and anger in everyday life. We wanted to know whether any emotional disturbances from moment-to-moment in people with elevated social anxiety is circumscribed to social situations or evidenced more broadly.

### **Social anxiety and positive affect**

From a cognitive perspective, socially anxious people are in a constant quandary of desiring to make good impressions on others but doubt their ability to do so and as a result, are in constant fear of being rejected (Clark & Wells, 1995; Leary, 2004; Rapee & Heimberg, 1997). In response, people devote considerable attention and effort to manage and alter undesired anxious states and behaviors observable to others (i.e., impression management) (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). A person's fears are not confined to actual social situations; they can occur during the anticipation and aftermath of these situations, and how an "imaginary audience" might view them in non-social situations. When social fears span such a broad range of contexts, managing anxiety often occurs at the expense of working toward other desired goals. Being hyperfocused on preventing negative outcomes interferes with the ability to recognize and respond to environmental rewards. As a result, socially anxious people can be expected to experience high-negative affect and low-positive affect when anticipating, being in, or ruminating about social situations (Clark & Wells, 1995; Leary, 2004).

For decades, researchers assumed positive affect was relevant to depression and not anxiety (Clark & Watson, 1991; Davidson, 1994). Specifically, a diminished ability to derive positive experiences from normally rewarding events is often believed to distinguish depression from anxiety. Yet, these conclusions were based on studies that failed to include people suffering from social anxiety. In a meta-analysis of 19 studies, Kashdan (2007) found a stable inverse relation between social anxiety and positive affect ( $r = -.36$ ; 95% confidence interval (CI):  $-.31$  to  $-.40$ ) that remained after removing variance attributable to depressive symptoms and disorders. Although, social anxiety appears to be linked to low-positive affect, there is no support for links between positive affect and panic disorder, phobias, generalized anxiety disorder, or obsessive-compulsive disorder (Brown, Chorpita, & Barlow, 1998).

The majority of studies of social anxiety assessed positive affect with trait measures or retrospective end-of-day reports. Studying positive affect with these approaches ensures that most of what is being evaluated is how emotional experiences are retrieved from memory. It is unclear the exact biases that go into these evaluations but we do know that people take mental shortcuts to judge their feelings. For instance, asked how your life is going on a sunny day and your response tends to be higher when compared with similar questions on a rainy day (Robinson & Clore, 2002; Schwarz & Clore, 1983). Moreover, because emotional states change from moment to moment, when people evaluate their feelings for an entire day or in their overall life, how are they aggregating their experiences? Global, diffuse measures such as trait affect surveys are affected by naturalistic mood primes (e.g., weather, ongoing strains and stressors, physical discomfort, recent exposure to support and care from others). We also know that online and reconstructed experiences are not the same, with each leading to different psychological outcomes (e.g., Wirtz, Kruger, Scollon, & Diener, 2003). From this work, it becomes clear that our knowledge about social anxiety and positive emotions is limited as a result of the use of traditional methodologies. These sentiments can be extended to our knowledge of how social anxiety relates to anger.

### **Social anxiety and anger**

The predominant response tendencies associated with anxiety are “fight or flight.” There is an extensive literature on avoidance and other “flight” responses. In contrast, “fight” or approach responses have been relatively neglected in theory and research on anxiety (Hofmann et al., 2004). Perhaps one of the reasons is the difficulty in defining anger. It has been argued that anger involves the perception of any insult against the self or interference with cherished values or the pursuit of goals (Berkowitz & Harmon-Jones, 2004). Anger-eliciting events span perceived threats to the self, physical pain, violations of values or social norms, and even traffic or cold water.

Responses to these insults can be constructive such as assertiveness or destructive such as rumination, passivity, or aggression. Using the same self-regulatory framework mentioned above, paired with an emotional vulnerability such as social anxiety, frequent and intense anger episodes can be expected to be highly probable and costly. There is some evidence that feelings of social rejection and a high proneness to shame, constructs that conceptually overlap with social anxiety, are

associated with excessive anger and aggression (Leary, Twenge, & Quinlivan, 2006; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996; Twenge, Baumeister, Tice, & Stucke, 2001). The cognitive processes associated with social anxiety, including excessive allocation of resources to detecting and managing social threat, might interfere with the ability to manage anger and prevent destructive behavior.

Researchers have only recently examined the potential relevance of anger to anxiety conditions (Gould et al., 1996; Moscovitch, McCabe, Antony, Rocca, & Swinson, 2007). For instance, anger directed inward might be a consequence of attributing an abundance of responsibility to the self for personal failures (Tangney, Wagner, Fletcher, & Gramzow, 1992) and anger directed outward and blaming others can be a strategy to avoid experiencing painful states of anxiety (Baumeister, 1991). Preliminary data suggest that social anxiety is positively related to the experience and expression of anger (Erwin et al., 2003; Kashdan, Collins, & Elhai, 2006; Kashdan, Elhai, & Breen, 2008; Moscovitch et al., 2007). To date, it is unclear whether people with excessive social anxiety are more likely to experience a high density of anger episodes throughout the course of their day and if they do, whether it is confined to social situations.

### The present study

We know from prior work that two constructs can be negatively correlated at the trait level and positively correlated at the state level, the two constructs can be negatively correlated at the trait and state level, or any other combination (Affleck, Zatura, Tennen, & Armeli, 1999; Nezlek, 2001). For this reason, we cannot rely on what we know about trait social anxiety and trait positive affect and anger, and trait social anxiety and retrospective ratings of positive affect and anger for an entire day, to understand how social anxiety relates to moment-to-moment emotional experiences as people navigate through the dynamic course of everyday events. At present, no published data were available about social anxiety and positive emotions or anger in the naturalistic environment. Studying positive emotions and anger episodes (states), as opposed to affective traits, allows researchers to examine the social contexts that might influence relations.

The question of whether positive emotion and anger disturbances extend beyond actual social situations has important implications for theoretical models of social anxiety. For a socially anxious person, extracting rewards and pleasure from social situations and effectively working with anger to gain the best possible outcome may be secondary to avoiding social rejection or seeking safety. Researchers have shown that strenuous self-control attempts disrupt a person's mental ability to manage cognitive processes, succeed at ongoing tasks, and rationally plan for the future (Baumeister, Schmeichel, & Vohs, in press; Muraven & Baumeister, 2000). For socially anxious people, self-control efforts and resource depletion during social events might carry-over and disrupt the ability to make progress toward and extract rewards from meaningful goals in non-social contexts (Kashdan & Steger, 2006) or manage aggressive impulses (Kashdan et al., 2008). This can manifest as diminished positive emotions and elevated anger across social and non-social contexts. The best way to test this hypothesis is to examine how social anxiety relates to positive emotion and anger episodes in a random sampling of social and non-social situations across days and weeks. This served as the central aim of our study.

Based on a self-regulatory approach to social anxiety, we hypothesized that people with relatively higher levels of trait social anxiety would report diminished positive emotions and elevated anger across a broad range of contexts and not merely in situations when other people were physically present. We extended prior work by recruiting a community sample of adults who provided ecological momentary assessment (EMA) data on electronic diaries for a period of two weeks. Participants were randomly prompted multiple times per day to report on their feelings, activities and social context. To our knowledge, this is the first study to examine how trait social anxiety relates to the density distribution of positive emotion and anger episodes across people's naturally selected events in everyday life.

## Method

### *Participants*

Our sample consisted of 38 community residents (20 men, 18 women) of the Buffalo, New York metropolitan area, who responded to advertisements for studies on drinking behavior. Each participant met the following inclusion criteria: age 21–50 years, mild to moderate alcohol intake (minimum four drinks per week), and no prior medical diagnosis or treatment for alcohol abuse. To ensure an absence of alcohol problems or alcoholism, each participant was screened using the Short Michigan Alcohol Screening Test (Selzer, Vinokur, & Rooijen, 1975). Participants were not selected based on level of social anxiety.

Participants reported a mean age of 26.9 years ( $SD = 5.6$ ), were mostly single (63.2%) and European–American (81.6%), and all earned a high-school diploma or general education diploma (GED). During the two weeks of data collection, there was no attrition. Each participant was paid a total of \$120 for their time and effort related to being in the study. Data relating to alcohol use have been reported elsewhere (Muraven, Collins, Morsheimer, Shiffman, & Paty, 2005a, 2005b). These articles provide a rationale for the inclusion/exclusion criteria, which were not relevant to the current aims.

### *Ecological momentary assessment (EMA) procedures and measures*

Upon responding to advertisements, individuals received a telephone screening interview to determine study eligibility. Upon acceptance into the study, they completed questionnaires on site. During this same initial appointment, participants were given 1½–2 hours of individualized training for interacting with an Electronic Diary (ED) for the 14-day self-monitoring portion of the study. Participants returned on a weekly basis for data uploading, changing ED batteries, and ED feedback.

Participants used a PSION Organizer II LZ 64 (5.6 inches (14.2 cm)  $\times$  3.1 inches (7.9 cm)  $\times$  1.1 inches (2.8 cm); 8.8 oz (249.5 g); PSION Ltd., London) to monitor everyday emotion experiences and events. Questions were presented in simple language on a four-line, 20 character liquid crystal display (LCD) screen. Participants used arrow keys to scroll through alternative responds and pressed “Enter” to select the appropriate response.

The ED prompted participants at random times during the day to complete a random assessment (approximately four per day); for the purposes of other work, no

prompts were issued within an hour of a reported drinking episode (Muraven et al., 2005a,b). The random prompt interviews assessed emotion experiences, social context, and activity. By using the ED, which provides time and date stamping for entries, we could determine that participants actually completed entries when prompted.

### *Emotion states*

Consistent with previous research using the ED (Collins et al., 1998; Muraven et al., 2005a,b; Shiffman, Paty, Gyns, Kassel, & Hickcox, 1996), we assessed momentary emotions using a four-point Likert rating scale (NO!!, no?!, yes?!, YES!!), which participants used to rate the strength with which they experienced each emotion. For example, a rating of NO!! indicated that the emotion was definitely not being felt while a rating of yes?! indicated that the emotion was being felt to some extent, but not strongly. Participants rated 10 emotion items derived from the circumplex model of affect (Russell, 1980; Watson & Tellegen, 1985). Items of interest in the present study were those with a positive valence (happy, excited, and relaxed) and anger; items not addressed in the current paper included bored, sad, quiet, sluggish, anxious, and general affect.

### *Social context*

When prompted, participants reported on their current social context by providing Yes/No responses as to the presence of others in the situation. Items included spending time alone or with spouse, collateral, family, other friend, acquaintance, co-worker, stranger, or other people. From these items, we created a single dichotomous item to define people as alone or socializing (with another person physically present) when prompted.

### *Activity*

Participants reported on the activity in which they were engaged when prompted. They provided Yes/No responses to the following items: working, social, leisure, smoking, eating, coffee, waiting, nothing, and other. These data were not used in our analyses, but are shown in Table 1 to illustrate the types of activities in which the participants were engaged when randomly prompted.

### *Global self-report scales*

At the initial session, participants completed several questionnaires, two of which were relevant to the present study. *To collect general information about our sample, we assessed demographic characteristics* (e.g., sex, age, marital status, education) and substance use related information (e.g., negative consequences) (Collins et al., 1998).

The three subscales of the 17-item Self-Consciousness Scale (Scheier & Carver, 1985) measured trait social anxiety and private and public self-consciousness. Participants rated each item on a four-point Likert-scale ranging from “not at all like me” (0) to “a lot like me” (4). The six-item social anxiety scale assessed tendencies to be fearful of social situations due to concerns about the possibility of being

Table 1. Prevalence of social context and activity variables when prompted.

Variable	Occasions across participants (out of 1702 random prompts)
Social context	
Alone	410 (24.1%)
With at least one other person	1292 (75.9%)
Activity	
Working	538 (31.6%)
Social	508 (29.8%)
Leisure	878 (51.6%)
Smoking	373 (21.9%)
Eating	340 (20%)
Coffee	145 (8.5%)
Waiting	350 (20.6%)
Nothing	180 (10.6%)
Other	366 (21.5%)

Note: Participants were able to indicate more than one activity when prompted.

negatively evaluated or rejected ( $\alpha = .82$ ). Prior factor analytic data show that the single reverse-scored item ("It's easy for me to talk to strangers") fails to load with other items, and reliability and validity are enhanced by removing it (Chang, 1998; Mittal & Balasubramanian, 1987). This fits with work showing that reverse-scored items attenuate the psychometric properties of social anxiety scales (Rodebaugh et al., 2004). In response to these findings, we also used the five straightforward social anxiety scale items ( $\alpha = .87$ ). As evidence of construct validity, this scale is predictive of poor social performance when interacting with strangers (Reno & Kenny, 1992) and good sensitivity to clinical interventions (Rapee, Abbott, Baillie, & Gaston, 2007).

The 10-item private self-consciousness scale assessed tendencies to direct attention inward to examine or attempt to understand the self ( $\alpha = .82$ ). The seven-item public self-consciousness assessed tendencies to be aware of how one appears to others in terms of image and physical appearance ( $\alpha = .83$ ). Private and public self-consciousness were used to examine the construct specificity of relations between social anxiety and emotion episodes.

### Overview of data analyses

Primary analyses were conducted using hierarchical linear modeling (HLM) 6.0 software (Raudenbush, Bryk, Cheong, & Congdon, 2004). We used restricted maximum likelihood equations. Data were hierarchically arranged with 1702 random daily prompts nested within 38 persons. Coefficients representing day level, random promptings for emotions and social context, were estimated for each person (within-person at Level-1) and individual differences in these coefficients, trait social anxiety and self-consciousness, were estimated (between-person at Level-2). We person-centered within-person variables at Level-1 and grand mean centered between-person variables at Level-2 (Kreft, de Leeuw, & Aiken, 1995; Schwartz & Stone, 1998, 2007).



HLM 6.0 bases the degrees of freedom for each effect on the total sample. We transformed  $t$  tests into correlation coefficients to convey the magnitude of relations (Cohen, 1988). To examine associations between social anxiety and positive and angry emotions, we conducted models with trait social anxiety and social context main effects, and Social Anxiety  $\times$  Social Context cross-level interactions. Our approach to dealing with cross-level interactions in model building converged with the recommendations of Nezlek (2008), p. 852), "there is broad agreement among multilevel modelers that analysts should use forward, rather than backward stepping, procedures . . . when using forward stepping, individual variables are added to a model and checked for significance, and if the coefficient for an individual variable is not significant, the variable is deleted." Thus, non-significant interaction terms were trimmed from models as needed to ensure the most accurate parameter estimations.

## Results

### *Electronic diary (ED) compliance*

During the two-week assessment period, participants received 2113 random prompts (averaging 44.82 prompts per person). Participants completed 1702 assessments within two minutes of being signaled (81% compliance). The number of missed prompts was not related to individual difference variables.

### *Descriptive data*

The average score on our measure of social anxiety was 6.87 ( $SD = 4.59$ ), private self-consciousness was 11.26 ( $SD = 5.12$ ), and public self-consciousness was 13.32 ( $SD = 4.82$ ). The prevalence and frequency of social situations and activities during random prompts are shown in Table 1.

### *Social anxiety and positive emotion episodes*

As shown in Table 2, trait social anxiety was inversely associated with feeling happy and relaxed. Similar findings were found for the three-item positive emotion composite ( $p = .05$ ). Social anxiety had a non-significant relation with feelings of excitement. Private and public self-consciousness were not related to any positive emotions.

Initial analyses were followed by tests of social anxiety effects on positive emotions being moderated by whether participants were with other people or alone when prompted. As shown in Table 2, being with other people was associated with greater happiness and general positive emotions. Yet, being with other people did not moderate relations between social anxiety and general positive emotions ( $p = .95$ ) or discrete feelings of happiness ( $p = .59$ ), relaxation ( $p = .28$ ), or excitement ( $p = .19$ ). Controlling for social context, social anxiety retained inverse relations with positive emotions.

### *Social anxiety and angry emotion episodes*

As shown in Table 2, trait social anxiety was positively associated with feeling angry whereas private and public self-consciousness were not related to anger. Being with

Table 2. Summary of hierarchical linear models of trait social anxiety predicting momentary emotional states.

Predictors	Happy			Relaxed			Excited			General positive emotion			Anger		
	$\beta$	<i>t</i> -test	ES <i>r</i>	$\beta$	<i>t</i> -test	ES <i>r</i>	$\beta$	<i>t</i> -test	ES <i>r</i>	$\beta$	<i>t</i> -test	ES <i>r</i>	$\beta$	<i>t</i> -test	ES <i>r</i>
Intercept	2.80	41.62***		2.67	35.67***		2.19	27.29***		7.65	43.70***		1.32	23.26***	
Private SC	-.02	-.80	.27	-.00	-.26	.09	.02	.95	.33	-.00	-.06	.02	.00	.29	.10
Public SC	.02	1.59	.55	-.01	-.65	.22	.02	1.85	.63	.05	1.38	.47	-.01	-.63	.22
Social anxiety	-.03	-2.55*	.87	-.04	-2.64*	.91	.00	.00	.00	-.07	-2.01+	.69	.03	2.37*	.81
With inclusion of social context as a predictor															
Intercept	3.04	30.92***		2.76	32.16***		2.39	17.26***		8.16	36.31***		1.33	21.42***	
Social context <sup>a</sup>	-.19	-3.20**	1.10	-.07	-1.32	.45	-.16	-1.84	.63	-.41	-3.56**	1.22	-.00	-.11	.04
Private SC	-.02	-.82	.28	-.00	-.06	.02	.02	.84	.29	-.00	-.05	.02	.00	.22	.08
Public SC	.02	1.56	.54	-.00	-.18	.06	.03	1.67	.57	-.07	1.32	.45	-.01	-.73	.25
Social anxiety	-.03	-2.65*	.91	-.04	-2.40*	.82	.00	.06	.02	-.07	-2.05*	.70	.03	2.38*	.82

+*p* = .05; \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

Notes: All *p*-values were two-tailed.  $\beta$  = unstandardized HLM coefficient. Degrees of freedom were 34 for terms for each variable in each model. Using forward stepping model building procedures, non-significant social anxiety  $\times$  social context interaction terms were removed from models (*p*'s ranged from .19 to .95); <sup>a</sup>1 = socializing and 2 = time spent alone.

other people during random prompts was not associated with anger and failed to moderate social anxiety effects ( $p = .51$ ).

## Discussion

We found evidence that trait social anxiety is inversely related to everyday episodes of feeling happy, relaxed, and generally positive, and positively related to feeling angry. Deviating from the more widely used approach of measuring positive affect and anger at a single time point with trait scales (e.g., Erwin et al., 2003; Kashdan, 2007; Moscovitch et al., 2007), our data collection involved random assessments of multiple spontaneous emotional experiences per day over the course of two weeks. Using this approach, we found evidence that the diminished positive emotion and amplified anger episodes of people with relatively higher levels of social anxiety were present both when socializing and during time spent alone.

This was the first study to show that trait social anxiety was associated with infrequent positive emotions and frequent anger when socializing and during time spent alone in everyday life. This finding provides a sense of the pervasiveness of problems, and possibly impairments, linked to elevated social anxiety. There are several plausible mechanisms that might account for difficulties relating to social anxiety beyond actual social situations. People with excessive social anxiety experience life disruptions during the anticipation of possible social evaluation, wondering about the probability and cost of possible social failures. In the aftermath of social interactions, they ruminate about perceived social failures and their potential devaluation by others (Clark & Wells, 1995; Kashdan & Roberts, 2007; Leary, 2004). These cognitive processes serve to perpetuate distress and negative self-appraisals. Additionally, the exhaustion of finite self-regulatory resources in an attempt to monitor threat and anxiety during social situations can disrupt abilities to recognize and capitalize on rewards during ongoing and subsequent activities (Baumeister, 2002). Each of these processes requires examination as for why social anxiety might be related to positive emotional and anger problems in various social and non-social contexts.

Subjective emotional experiences influence thoughts about the self, others, the world, current behavior, and future choices. The less frequent and intense positive emotional experiences of people with relatively higher levels of social anxiety can be expected to interfere with the experimentation, exploration, and play that lead to life enhancements such as learning, problem-solving skills, and the creation of positive social interactions and relationships (Ashby et al., 1999; Fredrickson, 1998). Additionally, frequent and intense anger potentially contribute to impaired daily functioning and physical health problems in people with greater social anxiety (Kassinove, 1995). Tests of construct specificity showed that similar results were not found for private and public self-consciousness. Additional tests are still needed on how people with different anxiety and mood disturbances and disorders compare on discrete emotional states to further determine shared and common features.

There are several interpretative caveats to our findings, including a small sample and a limited range of examined positive emotions. In addition, our social anxiety measure is inferior to more modern measures that have been more widely studied and show evidence of superior construct validity (Herbert, Rheingold, & Brandsma, 2000). Despite these limitations, we analyzed a large number of observations (1702 random prompts), representing both within-person and between-person reports. These data

allowed us to examine a reliable ecological slice of everyday life that cannot be obtained with other methodologies. In addition, despite the participant selection criteria relating to drinking behavior, there is very little data on community samples such as ours. The current data replicate and extend findings from studies using convenience samples of college students. Thus, issues regarding generalizability should be considered in the context of the extensive reliance on such convenience samples in the literature used to understand the phenomenology of social anxiety. Nonetheless, similar to studies relying on college students, we cannot necessarily generalize our findings to people with clinical or pathological levels of social anxiety (i.e., social anxiety disorder (SAD)).

Although, our use of EMA reports is an improvement over prior studies of social anxiety, positive emotions, and anger, causal relations remain unclear. We still cannot evaluate conceptual models of whether social anxiety and related self-regulatory processes disrupt positive emotional experiences or exacerbate anger. Diminished positive emotions and elevated anger might contribute to social anxiety symptom fluctuations and functional impairment, and there are likely to be bi-directional relations. We cannot assume that any existing knowledge of relations among trait social anxiety, positive emotions, and anger can be extended to what happens when people feel socially anxious in a given moment. In the current study, our measurement of social anxiety was limited to retrospective trait-based assessment. Our understanding of how social anxiety relates to other emotional experiences and events in everyday life will be improved by the inclusion of state-based assessments of social anxiety.

The recent research suggests that people with high-social anxiety are a heterogeneous group. For instance, there are data to suggest that only socially anxious people who tend to hide and conceal their emotions on a given day report diminished positive experiences and events (Kashdan & Steger, 2006). Other research suggest that at least a subset of socially anxious people exhibit extreme novelty-seeking tendencies and are best characterized by disinhibition and impulse control behavior patterns that include aggression (e.g., Kachin, Newman, & Pincus, 2001; Kashdan et al., 2006; Kashdan et al., 2008; Kashdan & Hofmann, 2008). Taken together, these data suggest that socially anxious people who rely on “fight” as opposed to “flight” responses to threat report greater distress and impairment. Future studies should compare competing models of how social anxiety might relate to emotional experiences and the processes that might moderate these relations.

Data continue to show that low-positive affect is particularly relevant to social anxiety and these relations cannot be attributed to comorbidity with depressive symptoms and disorders (for evidence of construct specificity, see Brown et al., 1998; Kashdan, 2007). As for anger, research has shown that excessive anger and difficulties managing these experiences are common to several anxiety and mood conditions (Gould et al., 1996; Moscovitch et al., 2007). The present study provides insight into how people differing in social anxiety experience particular emotional problems across social and non-social contexts, in their natural environment.

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