



# Whether, how, and when social anxiety shapes positive experiences and events: A self-regulatory framework and treatment implications

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## ABSTRACT

Although neglected in diagnostic criteria lists, theoretical models, and treatment approaches, attenuated positive emotions and cognitions distinguish social anxiety and social anxiety disorder from other anxiety conditions (and cannot be accounted for by comorbidity with depression). We present a self-control resource depletion model to explain how the intense self-regulatory efforts of high socially anxious individuals dampen positive experiences and events. We review existing research on individuals with social anxiety difficulties, focusing on impoverished positive experiences and quality of life, atypical reactions to overtly positive social outcomes, the absence of a normative bias toward the positive in social situations, and a meaningful subset of individuals who show signs of impulsive, short-lived positive events. We also discuss findings from the social psychology literature for how to enhance positive experiences, positive events, and self-regulatory capacity in individuals with social anxiety difficulties. The aim of the review is to broaden theory, research, and treatment efforts to the positive spectrum of human functioning.

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Emotional disturbances range from trait vulnerabilities to psychiatric disorders. When there are opportunities to engage in an activity

that can generate positive experiences, people with emotional disturbances might be less successful at capitalizing on these opportunities. However, attenuated positive experiences might only be relevant to a select number of emotional disturbances. In this review, we discuss recent advances in the phenomenology of social anxiety. This includes data showing that social anxiety is associated with: infrequent, low intensity, and short-lived positive experiences;

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fear responses to overtly positive social experiences and events; and distinct biases in cognitive processing that restrict quality of life.

For decades, psychologists have advocated for a single, bipolar continuum with approach motivation at one endpoint and avoidance motivation at the other. Recent research in personality, motivation, and social neuroscience challenged this view, providing evidence for two separate biobehavioral systems (Carver, Sutton, & Scheier, 2000; Gray & McNaughton, 1996). There is an *avoidance system* whose purpose is to prevent people from being exposed to danger. At the earliest signs of possible danger, this system activates negative emotions that, in turn, increase the likelihood of avoidance or escape. Negative emotions provide feedback to inhibit behavior that might lead to undesirable outcomes. Independent from the avoidance system, there is an *approach system* whose purpose is to guide people toward situations with reward potential. Attention and energy are mobilized to pursue activities that can generate resources—such as food, the cooperation of others, sexual partners, and knowledge—that provide an evolutionary advantage for survival and reproduction. There is evidence that the experience of positive emotions provides feedback to the approach system and thereby widens the array of thoughts, behaviors, and executive functioning capacities at our disposal at any given point in time (Fredrickson, 1998). However, not all discrete positive emotions cause a broadening of attention. When experiencing interest in gaining knowledge or experience, a person's attention narrows, and tangential information is ignored (Gable & Harmon-Jones, 2008, 2010). Regardless, positive emotions ensure that we remain attentive and open to rewarding opportunities with sufficient stamina to exploit them.

Given the relatively independent roles of these systems, it is not surprising that positive and negative emotions are associated with distinct experiential, cognitive, physiological, and behavioral processes. In addition, the degree to which people are sensitive to pain and punishment offers little insight about the pleasure, engagement, and meaning in their lives. However, there are exceptions. Both depression and schizophrenia are linked to deficient positive experiences (e.g., Berenbaum & Oltmanns, 1992; Blanchard, Mueser, & Bellack, 1998; Rottenberg, 2005). Furthermore, attenuated positive experiences and cognitions, and deficient approach motivation are listed as symptoms that are central to diagnosing depression and schizophrenia (American Psychiatric Association, 2000).

Less attention has been given to social anxiety and the pathological variant, social anxiety disorder (SAD), as an impediment to the contours of positive psychological functioning. For decades, researchers characterized attenuated positive experiences as a feature that differentiated depression from anxiety (Brown, Chorpita, & Barlow, 1998; Clark, Steer, & Beck, 1994; Clark & Watson, 1991). One contribution to this premature declaration was that studies examining how anxiety and mood disorders relate to positive affect had systematically failed to include people with social anxiety problems.

In this paper, we synthesize the existing literature on how social anxiety/SAD is related to positive emotions, mood, and affect. This includes research suggesting that when social anxiety is coupled with tendencies to conceal or suppress emotions, there is an enhanced likelihood of attenuated positive experiences and events. Instead of narrowly focusing on the emotional landscape, we also review theory and research suggesting that people with elevated social anxiety: exhibit fear responses to overtly positive social events, lack a normative attentional bias towards the positive in social situations, and appraise their quality of life as impoverished across a variety of life domains. Despite recent scientific attention to the positive spectrum of psychological functioning and social anxiety/SAD, this research has yet to be integrated into mainstream accounts of assessment, theory, phenomenology, course, and treatment. Our aim was to connect these often isolated strands of research with the end goal of applying what is learned toward developing better assessment

approaches and evidence-based interventions for children and adults with SAD.

## 1. A self-regulation perspective on social anxiety

One process that facilitates successful life outcomes is the ability to regulate thoughts, emotions, and behaviors to a level that is appropriate to the situational context (Kashdan & Rottenberg, 2010). According to the *limited self-control strength model* (Muraven & Baumeister, 2000), a person's capacity to self-regulate is constrained by certain conditions. First, diverse acts such as delaying gratification, controlling thoughts, and managing the expression of emotions draw from a common reservoir of self-regulatory resources. Essentially, cognitive, behavioral, emotional, and impulse regulation all act upon the same psychological resource—*self-control strength*. Second, the resources available for self-regulation are limited. Extensive acts of self-regulation can drain this finite pool of resources, rendering an individual less able to self-regulate in subsequent tasks that require this capacity—even if these tasks are conceptually and functionally unrelated. For instance, by resisting the temptation to eat a fresh batch of chocolate chip cookies (i.e., increased self-regulation), the same individual will later show a compromised capacity to hold a yoga posture for a duration that is typical for them (i.e., perseverance in subsequent activities declines). The exhaustion of self-regulatory resources has unintended spill-over effects, disrupting psychological well-being, academic success, perseverance, and the quality of interpersonal relationships (Baumeister, Gailliot, DeWall, & Oaten, 2006; Tangney, Baumeister, & Boone, 2004).

Individuals with greater self-regulatory capacity can expend greater effort until they are exhausted and thus no longer able to self-regulate. Certain dispositions and social experiences influence self-regulatory capacity. Both chronic individual differences and temporary fluctuations in self-regulatory strength may affect positive experiences and events. Social anxiety and self-regulatory strategies, or the manner by which individuals regulate themselves, predict the frequency of and responsiveness to positive events.

### 1.1. Information processing biases and safety behaviors inherent to social anxiety

Any psychological condition that directly interferes with social relationships has the potential to disrupt a primary source of positive experiences and events (Baumeister & Leary, 1995). Socially anxious individuals are afraid of being scrutinized by other people because this is liable to lead to negative evaluation and/or rejection (Hofmann, 2007; Rapee & Heimberg, 1997). Both the real and imagined presence of an audience can elicit the threat scrutiny and rejection (Leary, 2000; Rapee & Heimberg, 1997). For instance, someone walking down the street might trip over uneven pavement, feel embarrassed, and quicken their pace to distance him or herself from the situation. The anxiety and avoidance might be worse if other people are nearby but the generation and regulation of emotion can occur even if nobody is visibly present. This is because high socially anxious individuals carry a mental representation of how they appear to others. If their mental representation of how they appear to others falls short of the assumed (lofty) standards of others, anxiety is heightened. Unfortunately, socially anxious individuals inflate the probability of social failures, as well as the negative consequences of such failures (Foa, Franklin, Perry, & Herbert, 1996).

Individuals with social anxiety difficulties care about how others react to them and ultimately want to make a positive impression. In response to these social concerns and information processing biases, socially anxious people devote considerable self-regulatory resources (e.g., attention, physical stamina, and impulse control) to fearing, controlling, and avoiding anxious thoughts, feelings, and behaviors (e.g., Kashdan & Steger, 2006; Spurr & Stopa, 2002). Individuals with

social anxiety difficulties exert heightened self-regulation in most social interactions, but particularly during effortful or stressful interactions where there is greater potential for scrutiny (Hofmann, 2007). The extent to which a socially anxious person views a social situation as effortful or stressful is primarily the result of processing themselves as a social object—where the self is perceived more negatively and less positively than reality, and other people are expected to view the self more negatively and less positively than reality (Clark & Wells, 1995; Kashdan & Savostyanova, 2011; Rapee & Heimberg, 1997).

For individuals with social anxiety difficulties, self-regulation in social situations often manifests as *safety behaviors* such as talking very little, eating dinner at restaurants very early or late when fewer people are present, nodding obsequiously, seeking reassurance from partners, and deflecting attention by asking questions of other people (Clark & Wells, 1995). These safety behaviors are initiated in large part to minimize the possibility of rejection. Regular, intense efforts to control anxiety and reduce the probability of being rejected put socially anxious people in *prevention mode*, where the avoidance of threat and failure take precedence over seeking rewards and pursuing aspirational goals (Gilbert, 2001; Kashdan, 2007).

### 1.2. Effortful social interactions consume self-regulatory resources

A paradox exists such that excessive attempts to be less anxious and avoid rejection deplete self-regulatory resources, which are necessary to effectively attend to potentially rewarding situations and to exploit them for positive experiences. In one demonstration of depleted self-regulatory resources following a social situation, individuals (unselected for social anxiety) were instructed to present themselves in ways that defy social norms. For instance, they were to be boastful (instead of modest) during a first encounter with a stranger. Compared to individuals instructed to behave in a typical modest manner, being boastful led to compromised functioning in subsequent tasks: persistence on challenging math problems or suppression of facial-motor activity during emotionally intense films (Vohs, Baumeister, & Ciarocco, 2005). Thus, behaving in ways counter to social norms required extensive self-regulation. There was also evidence for a bi-directional relationship, in that prior depletion of self-regulatory resources impaired one's ability to make a desirable self-presentation on another person. For instance, having participated in demanding self-regulatory tasks such as trying to think about anything except white bears (i.e., thought suppression) increased the probability of impulsive, undesirable social behavior in a subsequent social situation—including talking too much or too little, or disclosing too many intimate details about oneself (Vohs et al., 2005). In sum, effortful self-presentation concerns increased the likelihood of self-regulation failures (likely to disrupt well-being), and in turn, self-regulation failures interfered with the ability to exploit social situations to generate positive experiences.

For interactions to feel natural and easy, people consciously and unconsciously match certain behaviors to that of their social partners (e.g., rate of speech, and volume). Individuals with high social anxiety have been shown to exhibit difficulty in aligning their behaviors with social partners in a relatively easy and effective manner (Meleshko & Alden, 1993). These inefficient social interactions that involve expending more effort than the task reasonably requires have been termed *high maintenance* (Finkel et al., 2006). In a series of studies, researchers examined the consequences of being in situations where substantial effort is needed to understand, work, and communicate with partners due to a lack of coordination. When social situations were experimentally manipulated to be *high maintenance*, individuals (unselected for social anxiety) showed greater evidence of impaired self-regulatory capacities in follow-up tasks: less physical stamina pertaining to handgrip as well as increased preference for easy, unrewarding tasks instead of challenging, high reward potential tasks

(Finkel et al., 2006). Taken together, in 13 laboratory studies (Finkel et al., 2006; Vohs et al., 2005), researchers provided evidence that the exertion of extensive self-control in social interactions drains the limited pool of self-regulatory resources available for recognizing and seeking out positive, healthy outcomes. Apparently, psychological and social well-being suffers in response to extensive self-control demands.

### 1.3. Regulatory consequences of high socially anxious individuals in effortful social situations

Additional studies provide explicit links to self-regulatory depletion following social rejection for individuals with high, but not low, social anxiety. When individuals with low social anxiety were rejected by a stranger following a face-to-face interaction, this unpleasant experience did not taint subsequent interactions with new people. Instead, individuals with low social anxiety anticipated positive, friendly interactions and they showed a readiness to affiliate in a pleasant manner (Studies 4–5; Maner, DeWall, Baumeister, & Schaller, 2007). In contrast, when individuals with high social anxiety were rejected, they were less inclined to view new social interaction partners as a source of positive experiences. Instead, individuals with high social anxiety were on guard, evidenced by an absence of the positive inferential bias found in their low socially anxious peers (Hirsch & Mathews, 2000). After being rejected, individuals with high social anxiety expected new interactions to be devoid of positive emotions and friendly behavior; in turn, these individuals behaved more negatively toward others. For example, after perceived rejection from a confederate, individuals with high social anxiety provided harsher feedback when given a leadership role to monitor the work of a stranger. They also showed a lack of generosity when given an opportunity to financially reward the strangers for their work (Study 5; Maner et al., 2007). Extending this work, Mallott, Maner, DeWall, and Schmidt (2009) found that following social rejection, individuals with low social anxiety showed positive anticipation for meeting a future interaction partner and displayed prosocial behavior in the interaction. In contrast, individuals with high social anxiety failed to show this compensatory, agreeable behavior following rejection. In trying to protect themselves from additional rejection, individuals with high social anxiety distanced themselves from new people, showing less interest in fulfilling their need for belonging. In sum, when individuals with high social anxiety experienced rejection (their most feared outcome), they displayed an absence of positive cognitions and behaviors in new social contexts (a stark contrast to individuals with low social anxiety).

Although experiences of rejection have an adverse effect on nearly everyone, the impact on high compared to low socially anxious individuals can be expected to be more intense and enduring. This effect was demonstrated in a series of studies involving a virtual ball-tossing game (Cyberball) where participants were led to believe that they were playing with two people via the Internet (in actuality, players were computer generated) (Williams, Cheung, & Choi, 2000). In the *inclusion condition*, participants received the ball approximately 33% of the time; in the *exclusion condition*, participants received the ball twice but were then blatantly ignored by the other “players” for the next 5 min. The rejection experience had an adverse impact on the average person's sense of belonging, self-esteem, and meaning in life as compared to the inclusion experience. However, the immediate sting of rejection was particularly intense for individuals with high compared to low social anxiety (Zadro, Boland, & Richardson, 2006). Moreover, high (but not low) social anxious individuals in the rejection condition experienced continual reductions in belongingness, self-esteem, and meaning in life throughout the 45 min following the end of the game.

Extending this research, Oaten, Williams, Jones, and Zadro (2008) hypothesized that after being rejected in a Cyberball game,

individuals with high social anxiety would show impairments in subsequent tasks requiring self-regulatory resources. In an initial study, researchers examined the extent to which individuals with high social anxiety would be able to resist eating unhealthy cookies following social rejection. In the immediate aftermath of rejection, nearly everyone evidenced difficulty resisting tempting, unhealthy cookies. Yet, for individuals with high (but not low) social anxiety this reduction in self-control strength continued to deteriorate over the next 45 min following rejection. A second study found that social anxiety inhibited the consumption of a healthy but poor tasting beverage following social rejection, underlining that the effect was due to impaired self-regulation and not consumption as a distraction strategy. Although these two studies focused on un-healthy eating and drinking behaviors, self-regulation for a variety of acts draws from the same limited reservoir of energy (Muraven & Baumeister, 2000). Thus, there is reason to suspect that individuals with social anxiety difficulties attempting to cope with rejection will show impairments in other spheres of effortful activity, including the ability to inhibit impulsive spending, show sexual restraint, and choose to engage in challenging tasks with great reward potential over easy tasks with minimal reward potential (Muraven & Baumeister, 2000).

#### 1.4. Heterogeneous self-regulatory responses to prevent rejection

Future research can explore how mental exhaustion manifests following the self-control acts of individuals with high social anxiety coping with effortful social interactions. Most research on social anxiety has focused on *risk-averse responses*. However, there is reason to expect heterogeneity in the self-regulatory strategies used to cope with potential rejection. At least a subset of individuals with social anxiety difficulties use qualitatively different strategies that are best described as risk-prone, approach behavior (Kashdan, Collins, & Elhai, 2006; Kashdan, Elhai, & Breen, 2008; Kashdan & Hofmann, 2008; Kashdan, McKnight, Richey, & Hofmann, 2009). For instance, an individual with social anxiety difficulties might find amusement by mocking someone else to win the favor of a crowd and have fun. By using this strategy, an individual would be effectively rejecting someone before they had a chance to reject them. Another person with social anxiety difficulties might have sex with a stranger, thereby extracting immediate feelings of pleasure and belonging. These behaviors differ in form from the shyness and inhibition that is stereotypical of social anxiety in the literature (Beidel & Turner, 1998; Crozier & Alden, 2001). Although short-lived positive experiences might be a by-product of these atypical regulatory strategies, the functional goal is proposed to be the same as behavioral inhibition—to avoid unwanted anxious experiences and reduce the probability of rejection (Kashdan & McKnight, 2010). If true, the deterioration of self-regulatory capacity, by itself, would fail to distinguish individuals with social anxiety difficulties who are behaviorally inhibited versus risk-prone. These ideas are speculative, as research is needed on the antecedents and duration of consequences following distinct regulatory strategies used by individuals with high social anxiety. Of particular interest are the consequences of self-regulatory capacity, failures, and strategies on healthy, positive psychological functioning in daily life.

Enormous effort and energy devoted to self-control of thoughts and feelings diminishes contact with the present moment, interferes with progress towards valued goals, and yields impairments in the frequency and quality of positive events (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Individuals who inefficiently allocate resources to impression management and the regulation of anxious symptoms tend to show impairments in other goal-directed behaviors that require effort and intention (Finkel et al., 2006; Kashdan, Breen, & Julian, 2010; Vohs et al., 2005). All else being equal, more socially anxious people, with this resource drain, show greater stress reactivity as they acquire less success and rewards when pursuing

goals (e.g., Maner et al., 2007). The extent to which individuals with high social anxiety pursue their goals by means of avoidance or prevention strategies may predict important positive social and non-social outcomes.

## 2. Social anxiety and positive experiences

The earliest indication that social anxiety could be an “exception to the rule” that diminished positive affect is relevant to depression but not anxiety was a study by Watson, Clark, and Carey (1988). Based on 21 people with SAD out of 150 outpatients with various anxiety and mood diagnoses, these researchers found a  $-.23$  correlation with a global trait measure of positive affect that remained significant even after accounting for the presence of comorbid depression. Although intriguing, the small magnitude of the relationship, small sample, and relatively crude measurement approach (cross-sectional general surveys) failed to alter notions of the phenomenology of social anxiety (e.g., Beidel & Turner, 1998; Crozier & Alden, 2001), or to expand the breadth of constructs considered as predictors of treatment response or targets of translational research (e.g., generation and regulation of positive emotions and events). Theoretical and empirical work on the erosion of self-regulatory strength during effortful social situations provides insights about mechanisms driving the inverse relationship between social anxiety and positive experiences.

In the past several years, a proliferation of research emerged on how social anxiety is related to positive experiences, with an emphasis on positive emotions and curiosity. A meta-analysis would provide guidance for further research by answering several vital questions. Is social anxiety related to positive emotions and curiosity, and if so, with what magnitude? Are these relationships specific to social anxiety or are they a function of the presence and severity of depressive symptoms? Which variables—with respect to both the characteristics of participants and the methodologies used—might moderate existing relationships?

With these questions at the forefront, one of the authors conducted a meta-analysis of studies on this topic from 1950 through 2006 (Kashdan, 2007). Based on 19 studies and 2976 participants, results supported a stable, moderate, inverse relationship between social anxiety and positive affect ( $r = -.36$ ; 95% CI:  $-.31$  to  $-.40$ ); based on 15 studies and 2091 participants, results also supported a similar relationship of social anxiety with curiosity and exploratory behavior patterns ( $r = -.24$ ; 95% CI:  $-.20$  to  $-.28$ ). Of course, this leaves the possibility that these relationships might be a function of the co-occurrence between social anxiety and depression. This can be handled with tests removing the shared variance between these emotional disturbances. The problem is that by removing the conceptual overlap between these conditions, we remove part of the social anxiety construct. For instance, a flawed mental representation of the self, that is characteristic of social anxiety (Hofmann, 2007; Moscovitch, 2009), overlaps with the low self-esteem and worthlessness inherent to unipolar depressive disorders. In addition, anhedonia (i.e., the inability to experience pleasure from previously enjoyable events) is a component of depression, overlapping with positive affect outcomes. For these reasons, attempting to “tease apart” social anxiety and depression by controlling for shared variance is a suboptimal methodological approach. Despite these interpretative caveats, the meta-analysis determined unique links between social anxiety and positive affect ( $r = -.21$ ; 95% CI:  $-.16$  to  $-.26$ ) and curiosity ( $r = -.21$ ; 95% CI:  $-.08$  to  $-.32$ ) that could not be explained by the presence or severity of depression. Since this meta-analysis, the growing appreciation for the relevance positive emotions and experiences to social anxiety has spurred even more research in this area.

Several study variables appeared to strengthen or weaken the relation between social anxiety and positive experiences. For instance,

the strategy for assessing social anxiety mattered. The magnitude of dampened positive affect was strongest when researchers used the Anxiety Disorders Interview Schedule for DSM-IV (Brown, DiNardo, & Barlow, 1994) or Social Interaction Anxiety Scale (Mattick & Clarke, 1998); the former being the gold standard of interview-based approaches and the latter being one of the most psychometrically sound self-report measures of social interaction anxiety. Researchers using the Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969) uncovered the weakest relationships with positive affect. This might be a result of the FNE being narrowly confined to the fear of negative evaluation, excluding other elements such as the fear of positive evaluation (Weeks, Heimberg, & Rodebaugh, 2008a, 2008b) or perceptions of being a flawed person (Moscovitch, 2009; Otto, 1999). Another variable that changed the magnitude of social anxiety effects was the population being studied, with the largest effects being found with clinical samples, followed by college students, and finally, adults in the community. These findings converge with evidence of age differences in the quality of emotional experiences (e.g., Carstensen & Mikels, 2005). During youth, substantial effort is devoted toward novelty seeking and the development of personal resources such as new friends and knowledge. In contrast, older adults with a greater awareness of the transience of life tend to channel efforts toward reliable sources of pleasure and meaning such as gathering with existing friends. This might explain the stronger inverse relationship between social anxiety and positive affect in younger adults compared with older, non-clinical samples. Taken together, these findings suggest that a better understanding of the positive emotional experiences of people varying in social anxiety requires a careful consideration of how social anxiety is being measured (no differences emerged among strategies to assess positive affect) and what types of people are being studied (as treatment seeking status and age alter relationships).

Initial evidence is promising, as data from large samples of college students and psychiatric outpatients from the community continue to showcase how high social anxiety is broadly linked to deficient positive affective traits even after accounting for depressive symptom comorbidity (Naragon-Gainey, Watson, & Markon, 2009). A limitation of this research is the tendency to rely on a single global questionnaire to measure how often people experienced positive emotions—an approach susceptible to recall bias, based on how people are feeling currently and how they appraise emotion-eliciting events (Levine & Safer, 2002). This method also fails to allow for the reporting of multifaceted emotional experiences, such as mixed emotions. When the meta-analysis on this topic was published (Kashdan, 2007), only three published studies used a daily diary approach to evaluate the presence of positive emotions during normal everyday activities (Kashdan, Julian, Merritt, & Uswatte, 2006; Kashdan & Steger, 2006; Vittengl & Holt, 1998); and none ensured the accuracy and compliance of people's recordings (via computerized time-and-date stamping).

Since then, Kashdan and Collins (2010) had participants carry palm pilots to report on their momentary experiences during four random prompts per day in their naturalistic environment for two weeks. Not only was high social anxiety associated with less intense positive emotions during these random daily assessments, but being around other people (versus being alone) did not significantly alter these effects. That is, individuals with high social anxiety showed a general dampening of positive experiences. These findings are consistent with other recent work showing that the daily lives of high socially anxious individuals are characterized by restricted positive emotions in situations when they are conversing with other people *as well as situations when they are alone* (Brown, Silvia, Myin-Germeys, & Kwapil, 2007). That being said, socially anxious people did report greater negative self-focused attention and preference for being alone when socializing with unfamiliar people.

Assessing positive experiences retrospectively may be particularly complex, as this approach cannot disentangle perceptual biases

associated with high social anxiety (e.g., subjective reports of behavior tend to be much more negative compared to observer reports reflecting actual behavior) from the frequency and quality of positive events. Benefits of daily diary designs include maximizing ecological validity, minimizing retrospective biases, and modeling personal factors and context-sensitive information that might moderate social anxiety effects. With over 20 studies on the topic, it might be time to move beyond context-free studies of positive experiences in the lives of individuals with high social anxiety—such as asking people how they tend to feel in general with a single occasion, trait positive affect questionnaire. Kashdan et al. (in press) had 150 college students report on their sexual episodes over a three week period. Compared to non-anxious individuals, women with high social anxiety (but not men) reported less frequent sexual activity. In terms of the quality of sexual activity, compared to their non-anxious peers, individuals with high social anxiety rated their sexual episodes in daily life as less pleasurable and reported feeling less connected to their partners. Adding another layer of complexity, results showed that when in romantic relationships perceived as close and intimate, individuals with high social anxiety reported feelings of connectedness to partners during sex that were as low as individuals with low social anxiety in romantic relationships perceived as unsatisfying. That is, individuals with high social anxiety had less satisfying sex lives, even when there was access to partners with whom they feel close; finding a close, romantic partner was insufficient as an intervention to improve this important domain of quality of life. Importantly, none of these social anxiety effects could be accounted for by shared variance with depressive symptoms.

By studying experiences and events in people's naturalistic environments, researchers can gain insight into ways that social anxiety interferes with quality of life that simply cannot be understood with single occasion measurement approaches. With rich, within-person data, researchers can untangle meaningful individual difference and situational factors that influence when social anxiety leads to positive and negative life events. There is a need for additional precise studies of whether, when, and how social anxiety alters the presence, intensity, and longevity of rewarding affective and non-affective (e.g., meaning in life, self-concept clarity) states in daily life.

### 2.1. Testing a self-regulatory model

Whereas high social anxiety is commonly associated with negative emotions and behavioral inhibition, there is evidence to suggest that, at least for some people, high social anxiety is related to diminished positive affect and curiosity. Nonetheless, it might be overly simplistic to focus on bivariate relationships between social anxiety and positive experiences. Fitting with a self-regulatory perspective (Leary, 2000; Vohs et al., 2005), these relationships might vary as a function of how much energy and effort are devoted to managing anxiety, leading to exhausted resources of attention and stamina that would otherwise be available for exploiting rewarding opportunities.

One study tested this nuanced model by examining whether levels of social anxiety and the manner in which emotions are regulated might operate together to predict positive emotions and events in people's natural environment (Kashdan & Steger, 2006). Results from a 21-day assessment period showed that people at the high end of social anxiety (1 *SD* above the mean) reported 39% fewer positive events in a given day than people at the lower end of social anxiety (1 *SD* below the mean). This research suggests that social anxiety influences the amount of rewarding opportunities available. Of course, temporal order cannot be disentangled and it is also plausible that engaging in fewer positive experiences leads to increased social anxiety over time. Regardless of whether this relationship is uni-directional or bi-directional, the positive spectrum of daily life appears to be intimately linked to the presence of elevated social anxiety.

These initial findings set the framework for a more complex model. Few studies have explicitly tested whether individuals with high social anxiety show reduced *reward responsiveness* on days characterized by elevated social anxiety. Furthermore, the degree to which people experience social anxiety on a given day might be particularly important with regard to how much they focused on avoiding, hiding, or suppressing negative feelings and thoughts. Kashdan and Steger (2006) provided evidence that *trait* social anxiety, operated together with the severity of social anxiety and the dominant strategy used to regulate negative emotions *on a given day* to predict the frequency of positive events on that day. Among individuals with high trait social anxiety, those reporting more intense social anxiety and greater efforts to suppress their emotions on a given day reported 24% fewer positive events than other individuals classified as high in trait social anxiety. These findings point to conditions wherein individuals with high social anxiety are most vulnerable to a loss of rewards. In addition, an ordinary condition of resilience was uncovered—of the people at the lower end of social anxiety, greater tendencies to be open and expressive of their emotions led to the most frequent positive events on a given day. People are not passive vehicles that experience emotions. People form relationships with their emotions and attempt to manage them with varying degrees of success. If scientists are going to understand when people with excessive social anxiety will be more or less responsive to everyday positive events, they will have to continue studying social anxiety and self-regulatory strategies in tandem and at the state level.

Other research suggests that individuals with high social anxiety possess dysfunctional attitudes and behaviors concerning their emotions. Individuals with high social anxiety report less ability to attend to, describe, and differentiate emotional experiences, as well as greater discomfort expressing their emotions openly (Spokas, Luterek, & Heimberg, 2009; Turk, Heimberg, Luterek, Mennin, & Fresco, 2005). When faced with an emotionally arousing situation, being better able to attend to, describe, and differentiate emotional experiences is associated with tendencies to successfully alter behavior to match the unique situational demands one is confronted with—what we might refer to as *psychological flexibility* (Kashdan, Ferssizidis, Collins, & Muraven, 2010; Kashdan & Rottenberg, 2010). Individuals who fare better at discerning what they feel are more attuned to the particular motivational tendencies being activated (or de-activated), and what can be done to maintain or alter the current situation to ensure the most optimal outcome (Kang & Shaver, 2004). Individuals with high social anxiety, showing a diminished capacity to understand and describe what they feel (Spokas et al., 2009; Turk et al., 2005), are liable to feel overwhelmed by intense, vague emotional experiences. This can manifest as rumination and difficulties handling physiological arousal (Luminet, Rime, Bagby, & Taylor, 2004). Instead of psychological flexibility, individuals with social anxiety difficulties might be more prone to responding to problematic situations with reflexive, self-protective responses such as aggression, avoidance, or excessive alcohol use—all of which aim to down-regulate negative emotions and up-regulate short-lived positive experiences (e.g., Kashdan et al., 2008; Kashdan & McKnight, 2010; Kashdan, McKnight, et al., 2009).

In addition to problematic beliefs about emotions, studies are beginning to show that high social anxiety is associated with particular attitudes about emotion regulation strategies. This includes the belief that suppressing emotions is a helpful tactic for warding off scrutiny and devaluation by other people. The extent to which individuals with high social anxiety view the expression of their emotions as a sign of weakness partially accounted for the strategic use of suppression to regulate negative emotions (Spokas et al., 2009). Emotion suppression is not limited to the intrapersonal domain, as there is evidence that this form of behavioral constriction is associated with less positive responses from social interaction partners (Butler et al., 2003; Meleshko & Alden, 1993). Nor is suppression limited to

negative emotions, as other research finds that individuals suffering from SAD are more likely to conceal or downplay the expression of positive emotions (Eisner, Johnson, & Carver, 2009). The underlying process might be the same as for the suppression of negative emotions; namely, individuals with social anxiety difficulties might be worried about showcasing intense emotions, because other people might feel differently and, in turn, negatively evaluate them. A preference for being inconspicuous and avoiding scrutiny would be better served by low levels of emotional expressiveness; high levels of emotional expressiveness can push the spotlight in their direction and, thus, prompt heightened evaluation from others. This pattern of trying to control and conceal positive emotion expression remained linked to SAD even after accounting for associations with other anxiety conditions and depression. Furthermore, depression showed no association with the dampening of positive emotions after controlling for SAD (Eisner et al., 2009). Taken together with earlier findings, these data provide evidence of the specificity of dysregulated positive emotion generation and regulation in social anxiety.

### 3. Fear responses to overtly positive events

#### 3.1. Fear of positive evaluation

Given the historical emphasis that researchers (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997) and clinicians have placed on fear of negative evaluation (FNE), an issue to address is whether this fear extends to *overtly positive* social situations and how this might affect the generation of positive experiences. Fear of positive evaluation (FPE) pertains to the sense of dread associated with being evaluated favorably and publicly, causing a person to feel conspicuous and shackled by standards that might be unmanageable (Heimberg, Brozovich, & Rapee, in press; Weeks, Heimberg, & Rodebaugh, 2008a, 2008b; Weeks, Heimberg, Rodebaugh, & Norton, 2008). In other words, it may be the case that a fear of evaluation *in general* is the core cognitive element of social anxiety.

The construct of FPE is consistent with evolutionary theory suggesting that social anxiety is an evolutionary mechanism that facilitates group cohesion, in part by preventing conflict between members of varying levels of social rank (Gilbert, 2001). If a person is socially anxious, they might experience a fear of doing well or improving their social status because of concern about having to maintain or defend these social gains in the future from more powerful others. In support of this theory, both FPE and FNE relate positively to submissive behaviors and negatively to social self-rankings (Weeks, Jakatdar, & Heimberg, 2010; Weeks, Rodebaugh, Heimberg, Norton, & Jakatdar, 2009). In addition, upon engaging in a social interaction with confederates trained to give positive feedback, people with SAD believed that their interaction partner would expect more from them in the next interaction and that they would be unable to meet these heightened expectations (Alden & Wallace, 1995); nonclinical control participants failed to show these concerns. Thus, fear of *eventual* negative appraisal accounts, in part, for the acute fear of positive appraisal.

In terms of specificity, clients with SAD exhibited elevated FPE in comparison to clients meeting criteria for other anxiety disorders (Fergus et al., 2009). While FPE has been established as a feature of social anxiety, responses to anticipated positive evaluation may offer additional insights into the relationship between social anxiety and positive events. Comparing individuals with SAD, obsessive-compulsive disorder, and without anxiety concerns, Gilboa-Schechtman, Franklin, and Foa (2000) found that individuals with SAD believed that positive social events (both mild and intense) were less likely to happen to them (and believed that negative social events would be more likely to happen to them); expected that the effects of a typical positive event would persist longer; and anticipated more intense, undesirable bodily reactions to positive social events. However,

individuals with SAD also anticipated positive social events to have a *greater (positive)* effect on their emotional reactions, and to *increase their self-esteem*.

### 3.2. Disqualification of positive social events

Individuals with SAD appear to simultaneously expect positive and negative consequences from overtly positive social interactions. However, there appears to be a mechanism that interferes with the ability to capitalize on positive social events, such that individuals with SAD fail to extract the positive consequences they expected, leaving the impression of a mostly negative experience. Compared with their less anxious peers, individuals with social anxiety difficulties found simulated positive social encounters to be aversive and distressing (e.g., Wallace & Alden, 1997) and failed to generate positive experiences in daily social interactions (Brown, Ryan, & Creswell, 2007; Brown, Silvia, et al., 2007; Kashdan & Collins, 2010). In effect, individuals with social anxiety difficulties not only report fewer positive events but they also fail to benefit from positive interactions, even those experimentally manipulated to be positive and rewarding.

Emerging findings highlight a strong candidate for this mechanism—the disqualification of positive social events. Following positive social experiences, individuals with social anxiety difficulties tend to attribute the success of social interactions to external factors instead of their own ability or effort (Heimberg & Becker, 2002). Whereas the fear of positive evaluation pertains to concerns of social reprisal due to appearing “too good” (i.e., “stealing the spotlight” from more dominant others), discounting positive events is conceptualized as a self-regulatory strategy to cope with social anxiety due to positive social experiences. Individuals can be socially anxious following a positive social interaction due to fears of social reprisal for “showing up” more dominant others (Weeks, 2010). This framework maps onto findings that individuals with social anxiety difficulties experience anxiety upon performing well in social situations and receiving positive social feedback and, in turn, view the feedback and their success as inaccurate (Weeks, Heimberg, & Rodebaugh, 2008a, 2008b, 2008c; Weeks, Heimberg, Rodebaugh, & Norton, 2008). Intentionally discounting positive social situations—an act of self-control—can be expected to exhaust the self-regulatory resources necessary to effectively attend to potentially rewarding situations, and to exploit them for positive experiences. Providing initial evidence in support of this model, a measure for assessing the disqualification of positive social outcomes mediated the relationship between social interaction anxiety and positive affect (Vassilopoulos & Banerjee, 2010).

## 4. Positive judgments relevant to the social anxiety spectrum

In combination with experiencing frequent positive and infrequent negative emotions (Kashdan, 2007), positive judgments are considered to be the fundamental units that comprise happiness (Diener, Suh, Lucas, & Smith, 1999). In this section, we review a growing body of literature suggesting that the biased cognitive processing of people with elevated social anxiety extends beyond hypervigilance to negativity and threats to dampened positive responses. This includes impaired awareness, exploration, and judgments of the positive, with a special emphasis on self-perceptions.

There is evidence that, in the general population, positive and negative evaluative responses are governed by distinct underlying motivational systems, with the positive motivational system characterized by a *positivity offset*. Essentially, when impending threat is weak or absent, the average person shows a slight motivational trend toward actively seeking and engaging in various environmental rewards. This general approach or exploratory system ensures that energies are directed toward learning and accruing knowledge of the world (Cacioppo et al., 1997; Panksepp, 1998). It has been suggested that survival depends on continual exposure to novelty in order to

learn and grow. Thus, evaluating and embracing beneficial stimuli is rewarding for its own sake and as a means to other positive endstates.

Available evidence suggests that, even in the absence of threats to social or physical survival, highly socially anxious people might lack this normative and potentially protective positive response to the world (Hirsch & Mathews, 2000). Highly socially anxious people fail to routinely make present-moment (“online”) assessments of ambiguous social information. Rather than evaluating their performance in-the-moment on the basis of current social cues and behaviors, individuals with high social anxiety evaluate their performance through a negative, retrospective filter (e.g., Alden & Wallace, 1995; Foa et al., 1996). Biased information processing, such as amplifying the importance and cost of social blunders, prevent people with SAD from modifying global negative beliefs and adopting positive beliefs. In one study, clients with SAD took longer to choose positive or negative endings when given vignettes of ambiguous social situations, while healthy controls failed to show similar constraints (Hirsch & Mathews, 2000). Although individuals with high and low social anxiety showed similar accuracy, when asked to recall details about positive social situations, two days later people with high social anxiety made less positive (and more negative) interpretations of details included in the vignettes. This lack of a positive bias remained even after controlling for depression and state and trait general anxiety (Brendle & Wenzel, 2004). While individuals with high social anxiety appear to appropriately encode memories of social events, they have a tendency to interpret these memories in a less positive (and more negative) manner. Because these cognitive biases appear to strengthen over time in the aftermath of social interactions, they may partially explain the unremitting nature of SAD (Davidson et al., 1993).

When the potential for threat is minimal, individuals with low social anxiety are biased to explore and engage their environment in search of rewarding opportunities (Cacioppo et al., 1997). If social anxiety is characterized by a general fear of evaluation (Heimberg et al., in press; Weeks, Heimberg, & Rodebaugh, 2008a, 2008b, 2008c), even in the absence of acute social threat, individuals with high social anxiety might seek to prevent attracting attention from other people and risking positive feedback from others for fear of future social reprisal (Gilbert, 2001; Weeks, 2010). Thus, even in the context of low potential negative evaluation, individuals with social anxiety difficulties might fail to exhibit the normal bias towards approach motivation found in individuals with low social anxiety. In a series of studies, high and low socially anxious individuals completed a dot probe task to test preferences for positive and negative facial expressions when paired with a neutral facial expression (Pishyar, Harris, & Menzies, 2004) or with household objects (Chen, Ehlers, Clark, & Mansell, 2002). In the absence of any acute social threats (e.g., anxiety for bogus upcoming public speaking performance), individuals with high social anxiety were hypervigilant to negative (e.g., contempt) faces and avoided positive (e.g., joyous) faces (i.e., longer latencies in response to positive face probes); individuals with low social anxiety displayed the opposite pattern (Pishyar et al., 2004). In a parallel paradigm using eye tracking, Buckner, Maner, and Schmidt (2010) assessed attention to positive and negative facial expressions compared with photographs of non-social scenes. Consistent with other findings, individuals with social anxiety difficulties failed to display the bias of looking *away from disgust faces* that was found in people low in social anxiety. These studies provide support from multiple modalities that people with social anxiety difficulties fail to show a normative bias toward positive stimuli and away from negative stimuli. Initial evidence suggests that cognitive behavioral group therapy treatment for SAD can alter this unhealthy attentional shift away from positive stimuli (Pishyar, Harris, & Menzies, 2008).

Additional studies have found that this lack of a positive inferential bias is specific to social anxiety. Upon comparing individuals with

high social anxiety, high dysphoria, and individuals high in both on an emotional Stroop task, those in the high social anxiety (but not high dysphoria) group took longer to name negative social threat words compared with depressive threat, positive, and neutral words (Grant & Beck, 2006). Thus, in the absence of an acute social threat, individuals with high social anxiety failed to show an attentional bias toward positive words. Although attentional biases are an unreliable phenomenon in subclinical populations (see Yovel & Mineka, 2004; 2005), the majority of findings presently reviewed, across a range of studies with varying methodologies, provide evidence for a deficient positive inferential bias (in the absence of threat) for individuals with high social anxiety.

If social anxiety is characterized by fear of both negative and positive evaluation, in situations where acute social threat is apparent, we should find equivalent hypervigilant, avoidant responses to positive and negative social feedback. To test this hypothesis, several studies have induced social apprehension with the threat of a social-evaluative task (e.g., recorded speech). Individuals with high social anxiety showed increased avoidance of all emotional faces (both negative and positive) only when exposed to social-evaluative threat (Mansell, Clark, Ehlers, & Chen, 1999). This effect was found to be specific to social anxiety and not for global anxiety or depression. Furthermore, the degree of bias away from positive stimuli mediated the relationship between social anxiety and immediate anxiety reactions to social threat (MacLeod, Mathews, & Tata, 1986; Taylor, Bomyea, & Amir, 2010). Attentional avoidance of emotional faces, either positive or negative, could serve as a safety behavior to minimize the attraction of attention to oneself in a social situation (Mansell et al., 1999). In addition, these studies provide evidence that diverting attention away from social stimuli serve as a *maintaining* factor of social fears.

Can socially anxious people be trained to acquire and use this positivity bias to their advantage? Based on initial findings (Murphy, Hirsch, Mathews, Smith, & Clark, 2007), individuals with high social anxiety are able to adopt a benign interpretation bias, thereby facilitating either positive or non-negative interpretations when presented with threatening social scenarios. Individuals with high social anxiety were randomly assigned to one of three social interpretation training conditions: positive, non-negative, or a control group. Participants in the two benign bias training conditions (positive and non-negative) imagined being in various ambiguous-to-positive social scenarios (e.g., "...you walk up to podium and you aren't shaking") and listened to prompts guiding them in the recognition and use of benign interpretations (e.g., "Were you trembling?"). Prompts could only be answered correctly by referencing the objective, benign outcome. That is, benign interpretations were reinforced through logical appraisals of the scenarios. Following training, participants in the benign conditions (positive and non-negative) showed less negative interpretations of new ambiguous social situations and expected to be less anxious in future social situations compared to the untrained control group (Murphy et al., 2007).

Besides explicitly training people to engage in benign interpretations, the bias toward positive stimuli can apparently be induced without conscious effort. For example, Li, Tan, Qian, and Liu (2008) used a modification of the dot-probe task to increase attentional bias toward positive emotional expressions. For participants in the positive training condition, the probes always appeared in the vicinity of the positive facial expression, while for participants in the control condition, the probes were presented with equal frequency in the vicinity of either positive or negative faces. Participants completed 720 trials per day over seven consecutive days. Following training, participants in the positive condition accelerated their responses to positive compared with negative pictures, whereas participants in the control group showed equal response time changes to positive and negative pictures. As expected, participants in the positive training condition showed reductions in social interaction anxiety following

training, whereas control participants showed no change. These findings provide initial evidence that positive cognitions are malleable, and that enhancing them offers an alternative route to reducing social anxiety symptoms.

Although the majority of studies show diminished preference for positive stimuli in people with social anxiety difficulties, there are notable exceptions. For example, Foa, Gilboa-Schechtman, Amir, and Freshman (2000) found that people with SAD had better memory for names linked to pictures of happy facial expressions than names linked to neutral or negative facial expressions. This suggests that individuals with social anxiety difficulties find happy faces to be more salient than angry faces. However, when presented with previously seen photographs of the same individual exhibiting a different expression, individuals with SAD were more apt to recognize photographs of people with negative facial expressions compared with non-negative (happy or neutral) expressions. A close inspection of the findings shows that the average memory trace for neutral faces was considerably lower than that of positive faces, suggesting that the comparison between negative and non-negative expressions may have been driven by impoverished memory for neutral faces. In contrast, people on average tended to recall information about positive facial expressions better than neutral or negative. Questions remain as to what mechanisms lead to better memory for specific information about happy faces but better visual memory for negative faces. Possible candidates include the appraisal of happy faces as a marker of pleasant potential social interaction partners or as a marker of unmet rewards; negative faces might be remembered as a marker of prior or future feared social scrutiny.

While people with social anxiety difficulties appear to lack the normative attention bias toward positive information, their memory for faces expressing positive expressions does not appear to be impaired. Our re-interpretation of prior findings suggests that for individuals with SAD, their memory bias pertaining to facial expressions was not enhanced for negative emotions compared with positive emotions. In fact, individuals with SAD had better recall and recognition for facial expressions overall. Moreover, individuals with SAD were faster in correctly identifying faces they had previously seen when the expressions reflected happiness (Foa et al., 2000), suggesting that when stored, the memory of faces in positive expressions is more accessible. This series of experiments supports the argument that individuals with SAD may be more likely to discount positive information even in the form of happy facial expressions (possibly viewing positive facial expressions as potential threat indicators); however, when the information is stored, positive information may be easier to recall. Further research is needed to assess the duration of these effects. It is possible that, as with gradual diminished recall of positive information from vignettes, the memory for positive faces fades with time.

Recent frameworks, focusing on fears of positive evaluation and the disqualification of positive social outcomes as a safety mechanism, offer an explanation as to why individuals with social anxiety difficulties would show similar responses to both positive and negative social feedback (Heimberg et al., *in press*; Weeks, Heimberg, & Rodebaugh, 2008a). Neutral faces are likely to be associated with decreased self-consciousness and accordingly, decreased threat of evaluation. In contrast, both positive and negative emotional expressions might be viewed as threatening by individuals with social anxiety difficulties. Emotional expressions from others typically coincide with heightened conspicuousness (i.e., "others are reacting to me emotionally and, consequently, must be noticing me"). Concerns about being noticed by other people would lead individuals with social anxiety difficulties to experience heightened anxiety and fear of evaluation *in general*. To cope with these unwanted feelings and thoughts, individuals with social anxiety difficulties are liable to engage in intense self-regulatory efforts such as concealing, hiding, suppressing, and discounting positive feedback (Kashdan & Steger, 2006; Weeks, 2010).



#### 4.1. Life satisfaction and quality of life

Alongside positive and negative emotions, cognitive evaluations about the quality of one's life can be considered a cornerstone of happiness (Diener, Suh, Lucas, & Smith, 1999). Facets of quality of life include personal fulfillment in work and leisure, significant and satisfying social bonds, and an enriching neighborhood and community. When generic measures of quality of life are used, clinic outpatients with SAD report marked deficits that are comparable to outpatients with depression (Hambrick, Turk, Heimberg, Schneier, & Liebowitz, 2003; Wittchen, Fuetsch, Sonntag, Müller, & Liebowitz, 2000). In an epidemiological survey of more than 8000 Canadians, even after accounting for lifetime history of depression, age, gender, and socioeconomic status, people with SAD reported marked dissatisfaction with their family life, friendships, and recreation compared to people without SAD (Stein & Kean, 2000).

Psychopathology is often studied without an appreciation for meaningful heterogeneity. Studies have found, on average, that people with social anxiety problems can be characterized by diminished quality of life. However, these studies typically merged together two separate subtypes of SAD. *Generalized SAD* refers to fearing most social situations involving direct interactions with others, whereas *nongeneralized SAD* refers to the fear of circumscribed social situations such as public speaking or being observed by others while writing or eating (APA, 2000). There is evidence that diminished positive emotions and curiosity relate primarily to generalized social interaction fears, whereas small to near-zero relationships exist with social performance and observation fears (Hughes et al., 2006; Kashdan, 2002). Accordingly, people in the community with generalized SAD had a seven times greater likelihood of being classified with severely diminished quality of life (on indicators such as energy and satisfaction with relationships) (Stein & Kean, 2000), but this failed to hold for people with only performance fears or trait anxiety (Safren, Heimberg, Brown, & Holle, 1997). Although performances in front of other people can be a source of discomfort, such an experience is often transitory. Thus, the reduction in positive experiences and quality of life for people with restricted social performance fears is small compared with the impact on significant, lasting, meaningful relationships for people with generalized fears. Unfortunately, this literature is also limited to methodological designs that fail to allow for inferences about causality. It is plausible that impaired quality of life leads to increased social anxiety over time. Regardless of whether this relationship is uni-directional or bi-directional, however, it becomes clear that neglected, underappreciated dimensions of quality of life are relevant to social anxiety disturbances.

Two studies provide preliminary evidence that existing cognitive-behavioral treatments for SAD can enhance quality of life (Eng, Coles, Heimberg, & Safren, 2001, 2004). Treatment affected more than satisfaction with relationships; some of the greatest benefits arose in perceived playfulness, clarification of goals and values, being exposed to new knowledge and experiences, and creativity. However, additional improvements were not observed at the six month follow-up assessment (Eng et al., 2001). Clinical trials are necessary to explore the potential of adjunct modules to directly target positive emotions, the discovery and regular application of personal strengths, and fulfillment in various life domains. Instead of aiming to merely achieve statistically significant improvements, treatments should strive for high end state functioning similar to successful, psychologically healthy members of society.

### 5. Implications for the assessment and treatment of SAD

#### 5.1. Broadband assessment

Our review suggests that important constructs are currently neglected and underappreciated during traditional assessment. To assess treatment gains, researchers conducting clinical trials of SAD have focused on changes in anxiety symptoms and FNE, social-cognitive judgments, and functional impairment. A few clinical trials have ventured beyond these targets to assess quality of life (Eng et al.,

2001, 2004) and self-regulatory strategies (Goldin & Gross, 2010). However, a number of constructs reflecting the positive spectrum of functioning have evaded assessments in clinical trials including the frequency of positive emotions and events, positive interpretational biases, mindfulness, strengths and virtues in action (e.g., compassion, altruism, and gratitude), effort and progress toward personally meaningful goals, and life satisfaction and meaning in life. Without formal assessment, it remains unclear whether current interventions already effectively improve these various dimensions of positive functioning.

Methodologies for assessing positive functioning can include traditional approaches such as global questionnaires and interviews or more dynamic approaches such as ecological momentary assessment. There are plenty of psychometrically sound questionnaires to assess positive affect (e.g., Mayer & Gaschke, 1988), positive affect regulation (e.g., Bryant, 2003; Feldman, Joermann, & Johnson, 2008), curiosity (e.g., Kashdan, Gallagher, et al., 2009), fear of positive evaluation (Weeks, Heimberg, & Rodebaugh, 2008a, 2008b, 2008c), disqualification of positive social outcomes (Vassilopoulos & Banerjee, 2010; Weeks, 2010), life satisfaction, quality of life, happiness, and meaning in life (e.g., Diener, Emmons, Larson & Griffin, 1985; Frisch, Cornell, Villanueva, & Retzlaff, 1992; Lyubomirsky & Lepper, 1999), meaning in life and valued living (e.g., Steger, Frazier, Oishi, & Kaler, 2006; Wilson, Sandoz, Kitchens, & Roberts, 2010), and the presence and use of strengths (e.g., Linley, Willars, & Biswas-Diener, 2010; Peterson & Seligman, 2004; Wood, Linley, Maltby, Kashdan, & Hurling, 2011). The studies reviewed in earlier sections of this paper build a case for the continual study of social anxiety and the positive spectrum of functioning. This includes the inclusion of these measures in experimental, longitudinal, and treatment outcome studies. After all, we are still in the earliest stages of understanding the basic nature, course, and mechanisms underlying relationships between social anxiety and positive experiences and events.

Beyond global questionnaires, the literature would benefit from methodology that assesses positive experiences and events as they naturally occur in the everyday environment of people with and without excessive social anxiety (Affleck, Zautra, Tennen, & Armeli, 1999). Researchers have begun to use ecological momentary assessment to understand how social anxiety is related to positive emotions (Kashdan & Collins, 2010; Vittengl & Holt, 1998), positive cognitions (Kashdan et al., 2006), positive daily events (Kashdan & Steger, 2006), and sexual activity that is pleasurable or fulfills a sense of belonging (Kashdan et al., *in press*). These investigations of social anxiety and positive experiences have showcased the value of addressing moderator variables such as self-regulatory strategy use, romantic relationship status, and situational contexts. Complex models of change are possible by the collection of rich within-person data over time across multiple situations. To our knowledge, there is no better way to assess dynamic constructs such as self-regulatory capacity following effortful social interactions (i.e., spillover effects) and the degree to which people extract positive experiences following exposure to positive events (i.e., reward responsiveness). This methodology also allows for tests of complex models of contextual variables that might modulate the presence and intensity of positive experiences.

Space limitations preclude a comprehensive review of all the methodologies and instruments available to address the positive spectrum of psychological and social functioning in people varying in social anxiety (for a review, see Joseph & Wood, 2010). The methodologies and instruments reviewed here can be used by researchers and clinicians to address important, neglected questions concerning causal relations between social anxiety and positive experiences and events. Different treatment modalities have been compared on their ability to ameliorate core symptoms and SAD diagnoses. By broadening the range of constructs being assessed to include the positive spectrum, best practice in clinical psychology can

be further informed by how different treatment modalities may aid individuals in their quest to create and sustain a life well-lived. This includes evaluating how well interventions for SAD increase individuals' recovery following self-regulatory depletion in effortful social situations, allowing them to exploit situations with the potential to generate positive experiences.

## 5.2. Treatment implications and enhancements

Besides benefitting from broader assessment strategies to examine therapeutic gains, existing treatment approaches for SAD can be supplemented by strategies that directly target various dimensions of positive psychological functioning. The goal of treatment can extend beyond symptom alleviation to helping people create a rich, meaningful existence where they are capable of handling psychological pain while pursuing valued life aims (Hayes et al., 2006; Kashdan & Rottenberg, 2010).

Deficits in positive emotions and behaviors warrant direct consideration in treatment. Evidence-based strategies to increase positive emotions can be found in the social and personality psychology literature. A series of 4–6 week longitudinal studies have shown that asking people to report on things for which they are grateful leads to increases in the frequency of positive emotions and cognitions and decreases in the frequency of negative emotions (Emmons & McCullough, 2003; Lyubomirsky, Sheldon, & Schkade, 2005; Seligman, Steen, Park, & Peterson, 2005). An important caveat in this line of research is that excessive practice can have iatrogenic effects. Asking individuals to report on what they are grateful for once per week led to significant improvements in well-being, whereas asking them to engage in this act three times per week led to a reduction in well-being over time (Lyubomirsky et al., 2005). Perhaps mindful awareness of benefits received from other people that were previously overlooked became a tedious homework assignment when mandated on a regular basis. This finding of a dose–response relationship suggests that any intervention focusing on increasing positive emotions should be carefully tailored and monitored to prevent habituation. A second caveat in this line of research is that the benefits of gratitude interventions tend to be greatest when people show a preference for the task and are energized and intrinsically motivated (Schueller, 2010). While this may seem obvious, this is important when there is consideration of asking an individual with high social anxiety to be aware of what they might be grateful for and, when appropriate, to express these feelings to a benefactor. For some individuals, this type of mood-enhancing exercise might be viewed as unconvincing as a strategy to improve their lives, especially when they are suffering from intense, impairing anxiety symptoms. Offering options among several exercises that have been shown to improve positive emotions is a valuable starting point. Besides increasing gratitude, longitudinal studies have shown the value of creating and devoting daily effort toward goals that satisfy basic needs for belonging, competence, and autonomy (Sheldon et al., 2010), and identifying prominent psychological strengths and finding new ways to use them on a daily basis (Seligman et al., 2005). After providing several options, information about exercise preferences should be collected to individually tailor interventions. This approach can be expected to increase treatment adherence and maximize the probability of sustainable gains.

Given that individuals with high social anxiety expect negative outcomes and are hypervigilant for signs of rejection, it is likely that they will perceive cues of rejection in interaction partners. Mallott et al. (2009) found poorer vocal quality, eye contact, and gaze quality in high, but not low, socially anxious individuals when interacting with a new potential partner following rejection by a different partner. These behaviors can effectively perpetuate the cycle that maintains difficulties. Social stress generates a failure to seek out positive social interactions or to reciprocate positive social behavior by other people.

This lack of positive cognitions, behaviors, and reciprocity decreases the likelihood of generating positive social experiences and increases the likelihood of being rejected by interaction partners (Meleshko & Alden, 1993). These findings are consistent with cognitive-behavioral models that emphasize counterproductive subtle and overt safety behaviors in social situations as factors that maintain social anxiety (Clark & Wells, 1995).

Safety behaviors, a subset of maladaptive self-regulatory strategies, serve to maintain fears and lessen opportunities for positive experiences. Exposure treatments that fail to account for safety behaviors are less effective (Kim, 2005; Wells, Clark, Salkovskis, Ludgate, Hackmann, & Gelder, 1995), perhaps because any success can be interpreted as conditional on the safety behavior. Further, safety behaviors can be broader than the immediate social context. For example, remaining in an unsatisfying relationship can be a safety behavior to avoid the novelty and uncertainty of re-entering the dating pool. Also, given the present review's focus on disqualification of positive social outcomes as a safety behavior which may maintain SAD (Vassilopoulos & Banerjee, 2010; Weeks, 2010), interventions should be honed to directly target the reduction of this mechanism. Although therapists frequently address the disqualification of positive experiences indirectly in cognitive-behavioral treatments for SAD, regular administration of self-report measures of this tendency followed by systematic and detailed cognitive restructuring of thoughts endorsed prior to the initiation of social events could yield enhanced treatment gains. A thorough assessment of subtle behavioral and cognitive avoidance strategies is important both for case formulation and treatment planning.

In addition, given promising findings obtained to date in the area of positive attentional training (e.g., Li et al., 2008; Murphy et al., 2007) as a treatment approach for social anxiety difficulties, initial evidence suggests that positive interpretive biases are malleable. Future studies are warranted using behavioral assessment tests, in vivo exposure, and multi-modal outcomes (e.g., thought record inventories to objectively assess interpretive biases) to determine whether the cultivation of positive interpretation biases in clients with SAD (to levels more typical of the general population) offers an entry point to generating more frequent and intense positive experiences in daily life.

Besides psychoeducation, targeted training in prosocial behavior (Turner, Beidel, & Cooley-Quille, 1997) and emotional literacy (Mayer, Salovey, & Caruso, 2008) might be useful supplements to typical interventions. Behavioral exercises can be used to practice the execution of generosity, gratitude, and kindness following socially threatening situations. This will allow for first-hand evidence of the benefits of prosocial behavior. For instance, the expression of kindness to another person energizes the recipient and the self, and stimulates the recipient to reciprocate with friendly behavior, creating an upward spiral of positivity (for review, see Fredrickson, 1998). Besides being immediately gratifying, prosocial behavior serves to build social self-efficacy and healthy relationships. Emotional literacy skills can further facilitate positive experiences in social and non-social contexts. Individuals with social anxiety difficulties can (a) learn to be more aware of felt experiences as they unfold in the present moment (i.e., *mindfulness*; Brown, Ryan, & Creswell, 2007), (b) develop a diverse vocabulary of emotion terms to precisely describe their felt experiences (i.e., *emotion differentiation*; Barrett et al., 2001), (c) appreciate appropriate modes of emotional expression that can be adapted to fit the current situation (i.e., *psychological flexibility*; Kashdan & Rottenberg, 2010), and (d) accumulate a versatile range of emotion regulation strategies to reduce, enhance, or stabilize what is being felt by themselves and other people as deemed appropriate (i.e., instrumental approach to emotion regulation; Tamir, 2009).

Prosocial behavior assignments executed by individuals with SAD would also allow for exposure to situations involving positive

evaluation and possible fear reactions to them (see Weeks, Heimberg, & Rodebaugh, 2008a, 2008b, 2008c). Given that Fergus et al. (2009) have reported that exposures targeting positive social experiences (e.g., receiving compliments) led to decreased fear of positive evaluation and social anxiety over the course of cognitive-behavioral therapy for SAD, there is preliminary evidence for adding exercises or modules that directly target positive emotions, cognitions, behaviors, and social events.

Research on emotion processes is still in an early stage. However, it is clear from existing research that focusing on the mental content of experiences is insufficient for enhancing resilient responding to social stress, and the meta-emotions of individuals with social anxiety difficulties require explicit consideration (i.e., how individuals *relate to their emotions and cognitions*). Upon being given a mindfulness-based intervention, 16 individuals with SAD were able to cultivate a broader, open, receptive awareness of what was happening in the present moment with less reactivity to distressing emotions and thoughts, and greater positive cognitions (Goldin & Gross, 2010; Goldin, Ramel, & Gross, 2009). Essentially, individuals with SAD can be taught to move away from the habit of labeling internal states as “positive” or “negative” and trying to control them. Individuals with SAD can learn to continually commit action toward the pursuit of valued life aims regardless of the mental content being experienced (Hayes et al., 2006). Individuals who pay more attention to, describe, and differentiate felt experiences appear to become adept at functional emotion regulation while possessing fewer negative attitudes and less distress about intense emotions (Barrett, Gross, Christensen, & Benvenuto, 2001; Kang & Shaver, 2004; Kashdan, Ferrisizidis, et al., 2010; Tugade, Fredrickson, & Barrett, 2004). Essentially, interventions with these targets might amplify the resilience of individuals with social anxiety difficulties when confronting stress.

Ambivalence, intolerance, and confusion about felt experiences can be expected to consume finite self-regulatory resources such that individuals with social anxiety difficulties will expend greater effort and energy than needed for ongoing tasks. Reductions in self-regulatory capacity from over-expenditure are proposed to link social anxiety to a lessened ability to extract positive experiences from the environment. This is because mobilizing effort toward desired goals requires the deployment of self-regulatory resources such as attention and physical stamina. Fortunately, there are interventions that have been shown to directly and effectively enhance self-regulatory capacity.

Outside of the clinical psychology literature is a growing body of research suggesting that just as a muscle can improve strength or endurance through regular training, regularly exercising self-control leads to long-term improvements in self-regulatory capacity (Baumeister et al., 2006). In one study, participants were given a free gym membership to complete a 4-week physical exercise program that was individually tailored by personal trainers (Oaten & Cheng, 2006a). Treatment compliance was linked to less self-regulatory depletion following thought suppression tasks and more ecologically valid indices of improved self-regulatory capacity including less consumption of tobacco, alcohol, and caffeine, healthier eating habits, greater commitment to completing household chores, and better self-monitoring of finances. In another study, college students were assigned to a rigorous 4-week program to improve academic study habits (Oaten & Cheng, 2006b). Besides improving study habits, self-control drills once again led to less consumption of tobacco, alcohol, and caffeine, healthier eating habits, greater commitment to completing household chores, and better self-monitoring of finances. Other self-regulation exercises leading to broad benefits in self-control capacity have included regular use of one's non-dominant hand to perform everyday tasks (Gailliot, Plant, Butz, & Baumeister, 2007), tracking bodily posture and eating habits (Muraven, Baumeister, & Tice, 1999), and monitoring of financial spending habits (Oaten & Cheng, 2007). Thus, improving self-regulatory gains in one

domain can generalize to enhanced self-regulatory capacity in other, unrelated domains. With practice, individuals can develop faster recovery or, even better, *resistance*, to the depletion effects which follow intense self-regulatory behavior. Future investigations can examine the influence of a self-regulatory exercise regimen on individuals with high social anxiety. The physical exercise regimen with a personal fitness trainer (Oaten & Cheng, 2006a) might be the ideal starting point, as this particular set of healthy behaviors has been shown to reduce symptoms in individuals with anxiety disorders (Stathopoulou, Powers, Berry, Smits, & Otto, 2006). A complete test of our self-regulatory model can be evaluated by providing a systematic exercise regimen to individuals with social anxiety difficulties and assessing indices of self-regulatory capacity along with positive psychological functioning in daily life. Our understanding and treatment of social anxiety would benefit from the synergy among these diverse bodies of research.

## 6. Summary

There is evidence that social anxiety is associated with diminished positive experiences, infrequent positive events, an absence of positive inferential biases in social situations, fear responses to overtly positive events, and poor quality of life—that cannot be explained by the co-occurrence or severity of depression. These positive constructs serve to distinguish SAD and elevated social interaction anxiety from other anxiety conditions (Brown et al., 1998). Initial evidence suggests that the relationship between social anxiety and positive events might vary as a function of how people manage their emotions in everyday life (Kashdan & Steger, 2006; Vohs et al., 2005). Evidence for this burgeoning idea is enhanced by research showing that individuals high, but not low, in social anxiety show compromised abilities to regulate their thoughts, feelings, behaviors, and impulses in the aftermath of rejection, and even 1 h later this deterioration in executive functioning fails to return to baseline functioning (Mallott et al., 2009; Maner et al., 2007; Oaten et al., 2008). It will be important to conduct additional studies to explore the intriguing notion that high social anxiety in conjunction with tendencies to conceal or hide emotions leads to the greatest vulnerability in terms of infrequent positive emotions, cognitions, behaviors, and events in daily life (regardless of whether the situation is social or non-social; Kashdan & Collins, 2010). The depletion of finite psychological resources and physical stamina as a result of extensive efforts to regulate anxiety, manage social impressions, and avoid potential social threats is a promising mechanism to account for social anxiety effects on positive psychological functioning (Hayes et al., 2006; Leary, 2000). Promising avenues for improving interventions stem from research showing that an individual's overall self-regulatory capacity can be improved with systematic exercise in a few isolated domains of self-control (Baumeister et al., 2006).

A subset of people high in social anxiety appears to engage in excitable, impulsive, and novelty-seeking behavior patterns. This combination of high social anxiety and behavioral disinhibition may characterize a particularly impaired subgroup. This group reports short-term pleasures such as increased sexual activity and socializing, but this fails to translate into lasting satisfaction or well-being (Kashdan & McKnight, 2010). The cortical activity relevant to novelty-seeking and approach behavior (e.g., dopaminergic agents, left prefrontal cortex activation) is distinct from that relevant to negative emotions and behavioral inhibition. Thus, future studies are needed to examine the incremental validity of this scheme for understanding how and when social anxiety is related to the generation of and sensitivity to positive events.

Individuals with SAD must have pleasurable, meaningful days—studying people in their natural environment will provide insight into the causes, correlates, and consequences of rewarding moments and days. Ongoing research efforts (TBK) have led to preliminary findings

showing that greater daily effort and progress toward a larger purpose in life is associated with greater positive emotions, self-esteem, and meaning in life on the same day. That is, the pattern of positive experiences on a given day ebb and flow with the degree to which individuals with SAD are behaving in ways aligned with their deepest values and interests (Hayes et al., 2006; McKnight & Kashdan, 2009). These data provide initial evidence for the targets of mindfulness and acceptance based interventions, where the goal is not to reduce pain or suffering but to be able to pursue valued goals despite the presence or absence of unwanted negative thoughts, feelings, images, or memories (referred to as psychological flexibility) (Hayes et al., 2006; Kashdan & Rottenberg, 2010). Several clinical trials have emerged to show the efficacy of mindfulness interventions for anxiety disorders (Hofmann, Sawyer, Witt, & Oh, 2010) and Acceptance and Commitment Therapy for SAD (Dalrymple & Herbert, 2007; Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Ossman, Wilson, Storaasli, & McNeil, 2006).

There is reason to suspect that dysfunctional early attachments, extensive peer rejection, and ostracism in childhood might precipitate social anxiety difficulties; this, in turn, may lead to reduced reward responsiveness to social interactions (Vertue, 2003). That is, socially anxious children might learn to expect non-rewards when interacting with other people. As social creatures, losing out on the pleasures of anticipating, experiencing, and savoring contact with other people might dramatically alter the hedonic tone of daily life. There is a need for fine-grained analyses of the origins of these problems, which includes critical developmental periods when social anxiety problems and diminished positive functioning show the greatest probability of developing; equal emphasis should be given to factors that offer resilience.

We believe there are concrete diagnostic implications to be drawn from our theoretical approach and literature review. We do not believe that anything in our review of the literature warrants changes to the DSM diagnostic subtypes. However, we advocate for several small (albeit important) changes in the diagnostic criteria for SAD. Diagnostic criterion A could benefit from a slight wording change. Instead of focusing on the fear of negative evaluation (i.e., fearing that one “will act in a way...that will be humiliating or embarrassing”; p. 456) or scrutiny by others, we suggest a more explicit reference to a fear of *either* positive or negative evaluation. Given that fear of negative evaluation has received greater empirical attention since SAD was first introduced in the DSM, we feel that such a change to the criteria could better hone clinicians' attention on fear of positive evaluation, a potentially equally important domain of social anxiety. Diagnostic criterion D currently focuses on how “social situations are avoided or endured with intense fear or anxiety.” Our concern is that this language prevents clinicians from diagnosing people who have created a restricted life or social cocoon over their life trajectory such that they are not actively confronting or explicitly avoiding feared social situations. People with SAD make small choices that can accumulate over time to create a life that deviates from their core interests and values. Because humans have an amazing ability to habituate, some people might lack insight into how social anxiety symptoms systematically led them to a life situation which better reflects daily languishing rather than suffering. Finally, there might be clinical utility in having a diagnostic specifier to refer to anhedonia not better accounted for by another psychiatric or medical condition (such as major depressive disorder). These suggestions fit with the prevailing literature on the unique costs associated with diminished positive experiences and quality of life, atypical reactions to overtly positive social outcomes, and the absence of a normative bias toward the positive in social situations, each of which is linked to SAD.

An integration of the positive spectrum of human functioning into a better understanding of social anxiety is in its infancy. Despite a few dozen studies on social anxiety and positive experiences, this research has yet to widely influence diagnostic criteria, theory, and/or clinical interventions. Early evidence suggests that the lack of a positive

attentional bias may serve as a maintaining factor of social anxiety (Taylor et al., 2010), and positive cognitions (Eng et al., 2001, 2004; Murphy et al., 2007) can be enhanced and the fear of positive evaluation can be reduced (Fergus et al., 2009) by cognitive-behavioral therapy. The need for clinical interventions to better emphasize the enhancement of positive thinking, and to decrease reliance on safety behaviors such as disqualifying positive events, in individuals with social anxiety difficulties is clear. As for increasing the frequency of positive events and the ability to extract pleasure and meaning, it remains to be seen whether current interventions suffice. With translational research, we can understand the conditions and intervention modules that best facilitate positive states and traits. This includes an integration of rich theory and research on human beings' capacity to override and alter the self, how excessive self-regulation leads to temporary impairment in this ability, and how certain exercises and mindsets can expedite the replenishment of this strength. We hope the current review inspires clinical scientists interested in social anxiety and related disorders to broaden research and treatment efforts to address what is most pleasurable, engaging, and meaningful in life.

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