

Well-being and Psychopathology: A Deep Exploration into Positive Emotions, Meaning and Purpose in Life, and Social Relationships

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Abstract:

For decades, researchers and practitioners have theorized psychological disorder and health as opposite ends of a single continuum. We offer a more nuanced, data driven examination into the various ways that people with psychological disorders experience well-being. We review research on the positive emotions, meaning and purpose in life, and social relationships of people diagnosed with major depressive disorder, bipolar disorder, social anxiety disorder, schizophrenia, and trauma-related disorders. We also discuss when and how friends, family members, and caregivers of these people are adversely impacted in terms of their well-being. Throughout, we highlight important, often overlooked findings that not all people with mental illness are devoid of well-being. This review is meant to be illustrative as opposed to comprehensive, synthesizing existing knowledge and inspiring explorations of unclear or undiscovered territory.

Keywords: Well-being; positive emotions; meaning; purpose; social relationships

Well-being is associated with a broad range of positive outcomes, including strong work engagement, performance, creativity, strong social connections, effective coping and problem solving strategies, physical health, and life longevity (e.g., Diener, Pressman, Hunter, & Delgado-Gil, 2017; Lyubomirsky, King, & Diener 2005). By definition, people with mental disorders experience significant distress and/or impairment in everyday life (Widiger & Clark, 2000). The grammatical conjunction “and/or” is of paramount importance in defining a psychological disorder, as this indicates that a person can experience frequent, intense, enduring distress with the potential of minimal functional impairment (McKnight & Kashdan, 2009a; McKnight, Monfort, Kashdan, Blalock, & Calton, 2016).

Researchers and practitioners often assume a linear association between the number of mental illness symptoms present and a person’s overall functioning. Meta-analyses suggest these correlations are modest to weak and vary across disorders (Cacioppo & Bernston, 1999; Clark, Watson, & Mineka, 1994). Further, the presence of negative emotions in psychological disorders does not negate the possibility of positive emotions. Research suggests that positive and negative emotions are not on opposite ends of the same continuum, but rather, operate relatively independent of one another (e.g., Bradburn, 1969; Carver, 2001; Tellegen, Watson, & Clark, 1999; Watson & Tellegen, 1985). Other research suggests that positive and negative emotions are bipolar ends of the same spectrum (e.g., Russell & Carroll, 1999), but people perceive that they co-occur when their emotional state is close to the middle of this spectrum (Tay & Kuykendall, 2017). What is clear is that negative and positive emotions are not mutually exclusive even in psychopathology. For example, individuals with eating disorders and bipolar disorder may experience an escalation in negative emotions while positive emotions remain, similar to healthy adults (e.g., Gruber, Dutra, Eidelman, Johnson, & Harvey, 2011; Overton, Selway, Strongman, & Houston, 2005).

Research on mental illness has historically focused on the presence of aversive experiences.

Diagnostic categorizations of psychological disorders contain a near exclusive focus on negative emotions and thoughts, and the avoidance of these unwanted experiences. Treatment of mental disorders extended this approach with a focus on symptom reduction (e.g., Hollon & Beck, 1993). More recently, treatments have emerged to promote the experience and savoring of positive emotions, instill strategies to satisfy psychological needs for belonging, competence, and autonomy, and assist toward the clarification of values and construction and pursuit of goals aligned with them (e.g., Fava, Rafanelli, Cazzaro, Conti, & Grandi, 1998; Ryan & Deci, 2008; Seligman, 2002; Seligman, Rashid, Parks, 2006).

In these interventions, people with psychological disorders acquire skills to move beyond “normative” functioning in the pursuit of life success and fulfillment. Since initial trials to treat emotional disorders (e.g., Fava et al., 1998; Seligman et al., 2006), quality of life interventions have been tailored for a variety of community (e.g., Abbott, Kline, Hamilton, & Rosenthal, 2009; Feldman & Dreher, 2012; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011) and clinical populations (Fava et al., 2005; Gander, Proyer, Ruch, & Wyss, 2012; Grant, Curtayne, & Burton, 2009; Ryan, Patrick, Deci, & Williams, 2008). If practitioners wish to successfully enhance well-being among people suffering from psychological distress, it is important to understand both the disorder-specific pathways that compromise well-being and the areas of well-being that remain intact and even enhanced in the presence of disorder. Below, we review research on the presence and absence of three key domains of well-being (positive emotions, meaning and purpose in life, and social relationships) in various psychological disorders (depression, bipolar disorder, social anxiety disorder, schizophrenia, and trauma-related disorders). This chapter is not an exhaustive review, and due to space constraints, not every disorder is reviewed in every section. This chapter *is* intended to highlight and synthesize key findings across disparate literatures to illustrate the ways in which psychopathology interferes with well-being, and in other cases, co-exists with elements of a happy, meaningful, and socially connected life.

Positive Emotions

Besides being subjectively pleasurable, even mild positive emotions serve an everyday purpose. A growing body of research suggests that the experience of positive emotions fosters helpful and generous behavior toward other people, increases open-mindedness and reduces defensiveness in social situations, and broadens considerations when making decisions (Fredrickson, 1998; Isen, 1987). Of most relevance to psychological disorder, positive emotions enhance people’s ability to choose targeted, effective coping strategies to deal with stressful events (Fredrickson & Branigan, 2005; Fredrickson, Mancuso, Branigan & Tugade, 2000; Tugade & Fredrickson, 2004). When people experience positive emotions, their attentional resources broaden such that efforts are devoted toward aspirational life aims (instead of merely safety and security) (Fredrickson, 2001). Of course, it is important not to overgeneralize these benefits, as discrete types of positive emotions inspire variable behaviors and goal pursuits: love, interest, joy, amusement, contentment, compassion, gratitude, awe, pride, admiration, hope, and relief (Roseman, 2011). Minimal attention is given to discrete positive emotions and their relation to psychopathology because the small body of research available tends to rely on the larger category of positive versus negative emotions.

Extreme positive emotional experiences are poorly understood. At one extreme, the relative absence of positive emotions is associated with apathetic reactions to potentially rewarding events, behavioral inhibition, and disengagement (Pizzagalli, 2014). At the other extreme, a hyperactive pleasure system stuck in an appetitive phase is often an indicator of uncontrollable, manic episodes (Johnson, 2005). We first review evidence for the former extreme (positive emotion deficits) among individuals with major depressive disorder and social anxiety disorder. We then explore the latter extreme (positive emotion excess) among individuals with bipolar disorder.

Major Depressive Disorder

Recent research challenges the assumption that being depressed leads to greater negativity in response to stressful events and less reward responsiveness to positive events. Based on evolutionary theory and strong methodological studies, it appears that when a person crosses the threshold from feeling depressed to being diagnosed with major depressive disorder, two things occur (Bylsma, Morris, & Rottenberg, 2008; Rottenberg & Gotlib, 2004). First, people are less emotionally reactive to negative events. This appears counter-intuitive to everything written in biographies, scientific journal articles, and popular media. But in fact, depressed individuals respond to negative events with less distress than healthy adults. Second, depressed individuals are less emotionally reactive to positive events. They are insensitive to environmental changes, regardless of whether events are positively or negatively valenced. They shut down. Across contexts, people with depression show emotional inertia or a resistance to change.

People with depression tend to have a diminished capacity to experience positive emotions or pleasure (i.e., anhedonia). When they encounter pleasant events or experiences, depressed people often

respond by dampening or suppressing positive emotions (Feldman, Joormann, & Johnson, 2008). They might tell themselves that their streak of good luck will end soon or that pleasurable emotions will be short-lived. They are less likely to mentally elaborate on positive mood states, such as savoring an experience by replaying the highlights or identifying moments they are grateful for (Eisner, Johnson, & Carver, 2009). This means that people who are depressed are reacting to positively appraised real-life events by downplaying and resisting them.

Laboratory studies have showcased how adults with depression respond to a variety of rewarding stimuli with blunted reactions (for review see Bylsma, Morris, & Rottenberg, 2008). For example, after watching an amusing film clip, participants with depression felt less amusement than healthy controls (Rottenberg, Kasch, Gross, & Gotlib, 2002). In another study, after viewing a series of pleasant pictures, participants with depression reported diminished emotional responses and displayed less frequent and intense positive facial expressions than healthy controls (Sloan, Strauss, & Wisner, 2001). In an autobiographical interview, adults with and without depression were videotaped talking about their happiest memory. Participants with depression took longer to retrieve their happy moments and recalled fewer specific details compared with healthy adults (Rottenberg, Hildner, & Gotlib, 2006).

Results from experience sampling studies offer a more mixed picture of emotional insensitivity. One study found that people with greater depressive symptoms experienced less intense positive emotions in response to daily positive events compared to people with fewer depressive symptoms (Carl, Fairholme, Gallagher, Thompson-Hollands, & Barlow, 2014). They also tried to suppress or dampen their positive emotions more frequently. While this pattern of results indicates emotion insensitivity, other studies have found that depression is associated with *increased* reactivity. In one study, people with elevated depression experienced greater emotional reactivity in response to both negative and positive events (Nezlek & Gable, 2001). A similar pattern of results were found in a study of social interactions; following both positive and negative social interactions, depressed people reported greater emotional reactivity than less depressed peers (Steger & Kashdan, 2009). The authors interpreted these results within evolutionary theory, suggesting that social contexts might evoke a different response than reflecting on prior events, observing movies and pictures, and other intrapersonal events. Depressive symptoms help people determine whether their social value is declining, putting them at risk of being insecurely attached to a tribe, isolated, and deprived of the psychological, physical, and social resources derived from group membership (Allen & Badcock, 2003; Watson & Andrews, 2002). Because social acceptance is central to the basic tenets of evolutionary survival and reproduction, it makes sense that depressed adults reported fewer occurrences of positive social interactions but experienced greater well-being benefits when they occurred; these events are cause for relief, as they are indicators that they are valued, cared for, and part of the tribe. It also makes sense that depressed adults, chronically concerned about their precarious social standing, react to negative social events with particularly strong emotions and experience diminished well-being due to the fear of being ostracized and banished.

Research is needed to determine the extent to which disparate findings are a function of methodology or phenomenology. In terms of methodology, it is possible that highly controlled laboratory environments do not accurately reflect everyday experiences. Simulated threats and aversive stimuli may be less stressful in laboratories, where a person can dampen their response by reminding themselves they are not in real danger, compared with real-world, real-time threats. In terms of phenomenology, it is possible that laboratory studies capture a limited subset of stimuli in which people with depression display emotional insensitivity. Laboratory studies have primarily used emotion-eliciting images with little consideration of more complex, naturally occurring situations (e.g., stressful social interactions, romantic relationship break-ups, academic failures).

The emotional complexity of people with depression goes beyond the intensity of emotions experienced. Depressed people are characterized by emotional inertia, in which prior emotions are strongly predictive of future emotions to the point of being rigid or frozen in time, irrespective of what is occurring around them (Kuppens et al., 2012). Another way to study emotional complexity is by examining the density of emotion networks. Rather than focusing on a single emotion (e.g., sadness), density analyses allow a group of emotions to be examined at once (e.g., sadness, anger, guilt). In one such study, depression was associated with a greater density of negative emotions, but not positive emotions (Pe et al., 2015). A density-distribution approach to emotions suggests that the positive emotions experienced when depressed are fewer in type and less predictable. Still, it is unclear which positive emotions fail to arise in particular situations. Moral emotions that are closely aligned to social activity such as gratitude, compassion, and love might be deficient during depressed states, serving as potent targets for interventions designed to enhance well-being.

These findings support a conceptualization that deficits in key areas of positivity such as positive affect and behavioral activation confer risk for depression in addition to negative risk factors such as

pessimistic attributional styles, which have received more attention. Future research is needed to disentangle the strength and temporal sequence of attenuated positivity and depression. Does depression lead to a lack of motivation and sensitivity to potential positive rewards in a person's environment, or does diminished reward responsiveness increase risk for depression? A recent meta-analysis of longitudinal studies offers support for a bidirectional effect (Khazanov & Ruscio, 2016). Self-report measures of positive emotionality (positive affect, extraversion, and behavioral activation) prospectively predicted increases in depression, and depression predicted subsequent decreases in positive emotionality. Fine-grained analyses that target discrete positive emotions will offer insight into the behaviors and goals that depressed children, adolescents, and adults are being pulled toward and away from. By identifying which positive emotions possess the strongest ties to depression, interventions can be developed that target specific positive emotions such as gratitude, compassion, amusement, and love (e.g., Gander, Proyer, Ruch, & Wyss, 2013; Hofmann, Grossman, & Hinton, 2011; Stellar et al., 2017).

Bipolar Disorder

Positive emotional experiences are a defining feature of bipolar disorder. The consequences of the intense euphoria, impulsivity, and grandiosity during manic episodes often lead to significant personal damage including financial disarray after spending sprees, relationship problems after infidelities, physical damage after excessive drug use, and risky sexual behavior. But in some cases, individuals with bipolar disorder have the unique capacity to experience pronounced positive emotions in a broader range of circumstances relative to healthy individuals. Past research has focused on positive emotions and experiences during manic episodes. When manic, people with bipolar disorder are more reactive to positive compared with negative stimuli (e.g., Johnson, 2005). They recall three times the amount of positive memories as negative memories, whereas healthy controls tend to remember about 10% more positive than negative memories during a typical good mood (Eich, Micaulay, & Lam, 1997). They are also more likely to remember positive descriptive words about themselves compared to psychologically healthy adults (Van der Gucht, Morriss, Lancaster, Kinderman, & Bentall, 2009).

Enhanced positivity is not confined to manic episodes, however. Research suggests that people diagnosed with and at risk for bipolar disorder tend to display persistent positive emotion across contexts (Johnson, Gruber, & Eisner, 2007). People with bipolar disorder exhibit a greater degree of positive emotions in response to, in anticipation of, and following rewarding stimuli, even when in remission (Gruber, 2011). Self-reports of positive emotions have been substantiated by physiological data showing cardiac and respiratory states indicative of positive emotionality (Gruber, Harvey, & Johnson, 2009; Gruber, Johnson, Oveis & Keltner, 2008). Neurological data converge on a similar conclusion that people with bipolar display elevated reactivity to multiple types of rewards (Dutra, Cunningham, Kober, & Gruber, 2015). While this positive emotionality may not seem problematic, research suggests that people with bipolar disorder show high levels of positive emotions (with self-report and physiological data) in situations that not only lack reward potential but are objectively neutral or aversive (from sad and disgusting film clips to hostile physical gestures by strangers; Gruber, et al., 2008; Piff, Purcell, Gruber, Hertenstein, & Keltner, 2012). This positive emotion persistence extends to self-regulatory difficulties when working toward meaningful life goals. Whereas healthy adults show a reduction in effort expenditure after making goal progress, people with bipolar disorder continue to persist (as if achievement is irrelevant) with sustained, high levels of positive emotions related to goal pursuit (joy, pride) (e.g., Fulford, Johnson, Llabre, & Carver, 2010).

When considering theory and research on positive emotions in bipolar disorder, it makes sense that these individuals are suspected to be more creative than the average population (Johnson et al., 2012). Research suggests that people in highly positive mood states (e.g., those that activate approach behavior, as seen in bipolar disorder) access more unusual and diverse information and in turn, show evidence of greater flexibility and creativity in their ideas and decision-making compared to behavior in other mood states (Baas, De Dreu, & Nijstad, 2008; Isen, 1999). Indeed, historical analyses of highly creative musicians, writers, poets, and politicians identify a meaningful number who likely experienced bipolar disorder at some point in their lives: Ernest Hemingway, Ludwig von Beethoven, Sylvia Plath, Georgia O'Keeffe, Vincent Van Gogh, Robert Schumann, and Winston Churchill, among others (Jamison, 1989; Weisberg, 1994).

Early writings on the association between mania and creativity spawned interest in testing this theory empirically. One early study found that people with bipolar disorder showed levels of creativity similar to creative writers when sorting objects into different categories (Andreassen & Powers, 1975). Another study found that lithium treatment for people with bipolar disorder dampens expansive, creative thinking (Shaw, Mann, Stokes, & Manevitz, 1986); offering a reason why medical compliance is difficult. A number of studies have examined the prevalence of bipolar spectrum disorders in creative professions. One study used structured diagnostic interviews to assess bipolar symptomatology among students at the

prestigious University of Iowa Writer's Workshop (Andreasen, 1987). Results showed that 43% of students met criteria for bipolar spectrum disorders compared to 10% of a non-creative control group. Other studies suggest that bipolar disorder is more common among individuals in creative professions such as writers (Ludwig, 1992) and artists (Akiskal, Savino, & Akiskal, 2005). Beyond creative professions, bipolar traits may be more common among those with more daily creative hobbies (Batey, 2007). While potential links between creativity and bipolar disorder are compelling, it is unclear whether, and under what circumstances, bipolar symptomatology actually fosters creativity. With an excessive focus on creative professions, studies have neglected to measure creative activity with validated self-report and behavioral measures. More research is needed to clarify the directionality of findings and uncover ways of harnessing creativity to improve the quality of life for people with bipolar disorder.

Despite upticks in creativity and expansive thinking, positive emotions pose a dilemma for people with bipolar disorder because they can signal the onset of a manic episode. They are forced to balance natural desires for pleasure and achievement with staving off manic-induced impairment. As they learn from their prior experiences, mania is more likely to occur after achieving important goals (Johnson et al., 2000). As a form of self-intervention, people with bipolar disorder intentionally try to dampen positive experiences. In one study, nearly 80% of people diagnosed with bipolar I disorder reported engaging in at least one strategy to avoid something rewarding in order to prevent mania, such as avoiding hobbies, limiting creative pursuits, and choosing not to have children (Edge et al., 2013). When people with bipolar disorder experience positive emotions, they are more likely to respond to positive experiences with thoughts that curb emotion intensity (e.g., "I do not deserve to feel this good") compared with healthy adults. Unfortunately, emotion dampening is associated with lower self-reported quality of life. This means that in an effort to prevent the onset of mania, people with bipolar sometimes avoid some of life's most rewarding, pleasurable experiences. Emotion regulation strategies such as mindfulness that keep people rooted in the present without any attempt at altering ongoing experiences may be a more adaptive alternative (e.g., Gilbert & Gruber, 2014). Future research can examine iterative decision-making processes among people with bipolar disorder to discover strategies that minimize chances of mania while maximizing the ability to fully engage with personally meaningful pursuits.

Social Anxiety Disorder

People with social anxiety disorder believe their personal characteristics are deficient, flawed, or contrary to perceived social norms. Upon having their personal flaws exposed to others, they worry about being evaluated unfavorably and ultimately rejected (Clark & Wells, 1995; Heimberg, Brozovich, & Rapee, 2010; Moscovitch, 2009). In hopes of preventing rejection, people with social anxiety disorder avoid social situations or endure them with considerable distress. As a result of their distorted beliefs and avoidant strategies, they are less likely to enjoy and pursue potentially pleasurable activities.

Unlike other anxiety disorders, social anxiety disorder is characterized by persistent low positive affect and curiosity (for a meta-analysis, see Kashdan, 2007). Specific positivity deficits in social anxiety disorder include the tendency to disqualify or reject positive feedback, difficulty recalling positive memories, lack of approach-oriented behavior when in neutral, non-threatening situations (Cacioppo & Berntson, 1999), and an impoverished quality of life (e.g., Eng, Coles, Heimberg, & Safren, 2005; Moscovitch, Gavric, Merrifield, Bielak, & Moscovitch, 2011; Weeks, Menatti, & Howell, 2015). One study examined how people with social anxiety disorder anticipate positive events by reading descriptions of situations such as receiving a love letter from a longtime crush or receiving much needed help from a coworker (Gilboa-Schechtman, Franklin, & Foa, 2000). Compared with non-anxious peers, people with social anxiety disorder rated positive social events as less likely to occur in their lives. If positive social events were to occur, they anticipated experiencing stronger negative reactions. These findings suggest that two biases exist, the first being a belief that positive events are unlikely to occur and the second being that if they do, rewards will be ignored and some level of pain/punishment will be recognized and ruminated on.

Positivity deficits appear to be driven in part by frequent and intense self-regulatory efforts (Kashdan, Weeks, Savostyanova, 2011). As an act of self-protection, people with social anxiety disorder try to conceal perceived deficiencies and refrain from expressing intense emotions that might draw unwanted attention (Heimberg et al., 2010; Moscovitch & Huyder, 2011). When people direct their limited attention to reducing their anxiety, appearing less anxious, and making a positive impression, they exhaust the energy necessary to extract rewards from their ongoing environment (Goodman, Larrazabal, West, & Kashdan, in press; Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

When analyzing face-to-face social interactions in everyday life over the course of two weeks, the two characteristics that best distinguished people with social anxiety disorder from healthy controls were the infrequency of positive emotions and reliance on avoiding anxious thoughts and feelings (Kashdan et

al., 2013). Notably, people with social anxiety disorder could not be distinguished from healthy controls based on their experience of anxiety or negative emotions during social interactions. The implication is that to understand social anxiety disorder, the action is not with anxiety in social situations, but rather the relative absence of positive social experiences and the sheer amount of effort exerted to feel something other than anxiety.

Experience sampling studies offer insights into how and when individuals with social anxiety disorder experience diminished positivity. Socially anxious people tend to experience the fewest positive events on days when they feel more socially anxious and devote considerable effort to suppress these emotions (Kashdan & Steger, 2006). Irrespective of how anxious a person tends to be across situations (trait social anxiety), participants in this study reported the most intense positive emotions on days when they felt minimal social anxiety and comfortable expressing their emotions openly. Interestingly, people with higher levels of social anxiety experience low doses of positivity regardless of whether they are socializing with other people or spending time alone (Kashdan & Collins, 2010).

An interesting paradox for people with social anxiety disorder is that in addition to a fear of being evaluated negatively, they fear being evaluated *positively* (Weeks & Howell, 2012). People with social anxiety disorder tend to interpret positive social interactions as a signal of future anxiety-provoking social interactions (Alden, Mellings, & Laposa, 2004). Even if they receive positive feedback, they believe future social interactions will be negative because they will fall short of rising expectations. With higher performance standards, there is a higher probability of failure. They also worry that overly favorable impressions might in some way be construed as threatening to other group members. For instance, they might worry that if their senior director publically compliments their work on a project, their manager will perceive them as threatening. When someone with social anxiety disorder ends up in a rare positive social interaction, they tend to dismiss good news or accomplishments (Weeks, 2010). For example, they might attribute a pleasant conversation to the other person being interesting rather than their social competence in asking good questions. If someone acts friendly towards them, they might assume the other person feels bad or is simply trying to be nice. By being hyper-focused on minimizing and concealing anxiety, people with social anxiety disorder ignore potentially rewarding social cues, such as someone self-disclosing an intimate detail about themselves (Kashdan et al., 2014).

These concurrent fears of positive and negative evaluation work in concert to contribute to positive and negative emotional suppression (Turk, Heimberg, Luterek, Mennin, & Fresco, 2005). Suppressing positive emotions helps a person with social anxiety disorder minimize attention directed towards them. On days when people high in social anxiety tended to suppress the expression of positive emotions, fewer positive social events and less positive emotions occurred the next day (Farmer & Kashdan, 2012). People generally want to get rid of or downregulate negative emotions and savor or upregulate positive emotions. For people with social anxiety disorder, the choice of which emotions to regulate spans the emotion spectrum. There has yet to be systematic longitudinal studies on how the avoidance and suppression of anxiety and positive emotions influences the development of friendships, romances, interests/passions, and work-related prospects, engagement, performance, and innovation. It will be important for future research to clarify the downstream consequences of decisions to avoid instead of approach over the course of months and years.

To understand the problems inherent to social anxiety disorder, you need to simultaneously consider personality, emotional experiences, how people react to these emotions, and beliefs about emotion display rules. Ignore any of these elements and you will be misled about how they operate together. For instance, there is a subgroup of people with social anxiety disorder (as high as one out of five diagnosed with the condition; Kashdan, McKnight, Richey, & Hofmann, 2009) who instead of trying to escape anxious situations and experiences, tend to be novelty seeking, impulsive, and risk-prone (Kashdan & McKnight, 2010). These people might take over a conversation to demonstrate social dominance or engage in risky sexual behavior to control, instead of being controlled by, their anxiety. Do people in this subgroup have similar positivity deficits, tendencies to conceal the expression of positive emotions, and fears of being positively evaluated as people in the more timid, prototypical group? As for interventions, how can individuals with social anxiety disorder organize their lives in ways that influence the probability of positive experiences? How can they reverse their tendency to ruminate on blunders instead of savor the moments of connection in the aftermath of social encounters? As a condition that affects approximately 7-12% of the population (Fehm, Beesdo, Jacobi, & Fiedler, 2008; Kessler et al., 2005), sufficient basic research exists to begin exploring translational interventions that address the positivity deficits. With the tradeoff made such that people with social anxiety disorder meet their short-term goals of alleviating anxiety and avoiding rejection, at the expense of building positive experiences, much needs to be learned about the ways that well-being interventions require refinement to improve life outcomes beyond symptom reduction.

Meaning and Purpose In Life

Purpose in life has been defined as a central, self-organizing, life aim. Those who acknowledge and live in accordance with their purpose derive a deep sense of meaning in life via the pursuit and attainment of valued goals (Kashdan & McKnight, 2009). A strong sense of purpose is associated with greater meaning in life along with greater happiness and self-esteem, viewing goal pursuits as challenges instead of threats, greater resilience when confronted with emotional difficulties and traumatic events, and longevity (Bonebright, Clay, & Ankenmann, 2000; Boyle, Barnes, Buchman, & Bennett, 2009; McKnight & Kashdan, 2009b; Ryff, 1989). On the other extreme, people who lack a sense of purpose are at greater risk for mental health difficulties (Kashdan & McKnight, 2009; Ryff & Singer, 1996). Emotional distress obstructs awareness of one's purpose and inhibits the mobilization of effort toward one's purpose (e.g., Berenbaum, Raghavan, Le, Vernon, & Gomez, 2003). With less research on the interface of meaning and purpose and psychopathology compared to positive emotions and social relationships, the available review is streamlined.

Depression

Depression is characterized by a poverty of meaning and purpose (Beck, 1967). Beck's early writings on the subject describe people who are depressed as "having no goals," "having nothing to look forward to," and "seeing no point in living" (Beck, 1967; see Westgate, 1996). In addition to hallmark symptoms found in the DSM, some measures include items about meaninglessness as a specific symptom of depression (e.g., Lovibond & Lovibond, 1995). Meaninglessness may stem from an unfulfilling social support network (Stillman et al., 2009). Given that loneliness and depression frequently co-occur (e.g., Weeks, Michela, Peplau, & Bragg, 1980), it is unsurprising that a lack of meaning may indicate depression. Factor analyses have also suggested that hope about the future is an important component of meaning (Feldman & Snyder, 2005). Since hopelessness is one of the core features of major depression (Abramson, Metalsky, & Alloy, 1989), a lack of hope may underlie deficiencies in meaning and purpose among individuals with depression.

While a lack meaning in life is intertwined with the core features of depression, a strong sense of meaning can play a protective role in the onset and maintenance of depression. In one study, nearly 800 people from 43 countries completed self-report measures of meaning in life and depression five times throughout the year (Disabato, Kashdan, Short, & Jarden, 2017). People with higher meaning in life at the start of the study experienced a decrease in depression three months later. This relationship was partially mediated by positive life events people experienced over the three-month period, such as earning more money or doing something exciting with a friend. These findings suggest that meaning in life can decrease depressive symptoms by generating positive life events. Such findings coincide with the theoretical rationales of interventions that target well-being indicators as outcomes (rather than symptom reduction), which posit that deficient meaning in life is not merely a consequence or correlate of depression but rather, meaning plays a causal role in the development and maintenance of the disorder. As such, enhancing meaning, purpose, and related phenomena should be effective in preventing and treating depression. Treatments such as Acceptance and Commitment Therapy (ACT) help people with depression clarify personal values, and work toward goals that offer the greatest potential for meaning and purpose in life (Hayes, Strosahl, & Wilson, 1999; Zettle, 2007). This is achieved not by eliminating depressive symptoms, per se, but by disengaging from unproductive internal dialogue, acknowledging and accepting uncomfortable emotional experiences while not acting on their behalf, staying in touch with the present moment, and increasing goal-directed behavior irrespective of the presence of distress (Zettle, 2007).

Bipolar Disorder

While mood disorders generally obscure one's sense of meaning and purpose, some people are able to derive meaning from altered emotional states. This is especially evident in bipolar disorder. One qualitative study examined ways in which people with bipolar disorder derive a sense of meaning from their illness (Rusner, Carlsson, Brunt, & Nystrom, 2009). Participants described bipolar disorder as "an illness that is intertwined with one's whole being." They reported an overall intensity of experience that can at times be rich and profound. Participants alluded to a "daily battle" to understand themselves and uncover what is helpful in life, and the distinction between reality and internal fiction. Results suggest that while bipolar disorder creates a challenging existence for those affected, finding meaning within this complexity is achievable.

While some individuals with bipolar disorder struggle to make sense of their often chaotic emotional lives, others are able to derive a coherent sense of meaning with the help of spirituality and/or religion. One study found that 78% of adults with bipolar disorder surveyed held strong spiritual or religious beliefs (Mitchell & Romans, 2003). Theory and research suggest that people with strong religious beliefs and practices are better able to control, monitor, and regulate the self and thus, are more skilled at

organizing, prioritizing, and achieving goals (McCullough & Willoughby, 2009). Religious and spiritual beliefs may be particularly beneficial for people with bipolar disorder who have difficulty regulating their emotions in the context of disorganized goal pursuit (Johnson, 2005). Spirituality may also boost well-being among people with bipolar disorder, as research suggests that feeling connected with a higher power is associated with greater well-being at the trait (Pargament & Mahoney, 2009) and daily level (Kashdan & Nezlek, 2012). Many people with bipolar disorder endorse a direct link between religious beliefs and a willingness to manage their illness (e.g., Galvez, Thommi, & Ghaemi, 2011; Mitchell & Romans, 2003), suggesting that meaning derived from spiritual and religious systems may improve the course of bipolar disorder. Some evidence suggests that people with psychological disorders can exhibit excessive religious and spiritual engagement, but this is not the norm (Koenig, 2009). Spirituality and religion should be further explored as a potentially useful paradigm to initiate coping and meaning making among people with bipolar disorder; with the caveat that more attention is needed to the types of beliefs and behavioral practices that are helpful and unhelpful.

Social Anxiety Disorder

Compared to other anxiety disorders, people with social anxiety disorder are more apt to make decisions that involve avoiding errors, mistakes, and failures than approaching rewards (Kashdan et al., 2011; Rodebaugh & Heimberg, 2008), interfering with the ability to behaviorally commit to goals aligned with a purpose in life. Theory substantiates this notion, as social anxiety is thought to be part of a biologically based avoidance system designed to alert and protect against potential social exclusion (Leary, 2001). Research points to the hypothesis that a coherent sense of purpose and committed effort towards that purpose may act as a powerful antidote for the emotional suffering experienced by people with social anxiety disorder.

One study found that people with social anxiety disorder endorsed lower meaning in life and lower drive toward a life purpose on a daily basis compared to psychologically healthy adults. Yet, on days when people with social anxiety disorder made progress toward a purpose in life, they endorsed greater meaning in life and positive emotions, and their self-esteem was indistinguishable from psychologically healthy adults (Kashdan & McKnight, 2013). Results suggested that strong effort – rather than progress – toward one's purpose was the mechanism driving these benefits for individuals with social anxiety disorder. Although this is only one study, this work suggests that if you give people with social anxiety disorder a reason for getting through the day, there is a reduction in the unhelpful influence of anxious thoughts and feelings. Further evidence for this alternative model of intervention (that does not make anxiety reduction a goal) stems from effective clinical trials of ACT for people with social anxiety disorder who are given the skills to be in the present moment, with a curious attitude, pursuing what they care about most despite the presence of pain (Craske et al., 2014; Dalrymple & Herbert, 2007; Kocovski, Fleming, Hawley, Huta, & Antony, 2013).

Schizophrenia

Conventional wisdom suggests that people with schizophrenia have obstructed views of the world around them, resulting in significant functional impairment and thus, a diminished sense of meaning (e.g., Roberts, 1991). However, even people diagnosed with psychotic disorders can experience profound meaning in life. Qualitative data suggest that there are at least five sources of meaning that can remain intact despite the presence of severe psychological disorder: social relationships, meaningful work, physical health and vitality, nostalgia for life defining moments, and positive experiences (Eklund, Hermansson, & Håkansson, 2012). A greater sense of meaning and purpose can be therapeutic for people with schizophrenia. Inpatients with schizophrenia who have a greater sense of meaning and purpose in life endorse greater adherence to their medical regimen and are less likely to be depressed during their hospital stay (Tali, Rachel, Adiel, & Marc, 2009). Despite difficulties deriving meaning from external sources, research suggests that some people with schizophrenia construct meaning from their delusions and hallucinations - integrating these experiences into a coherent framework of who they are. This allows these individuals to better understand and accept their aberrant and otherwise disturbing experiences, which may ultimately improve their symptomatology and well-being. One study found that people with schizophrenia reported decreased meaning in life from pretreatment to posttreatment (Roberts, 1991). For those who successfully integrated delusions and hallucinations into their sense of self, the loss or reduction of these symptoms precipitated confusion and the fear and sadness of a lost identity. If delusions and hallucinations are reduced or altered, this research suggests that treatment must go beyond symptom reduction to aid in the reformulation of their self-concept.

Rich, descriptive studies of people with schizophrenia are needed to gain a deeper understanding of their perspectives on life-sustaining sources of meaning. Notably, a fundamental sense of personal meaning - which offers explanatory power to make sense of one's life, exists at the core of one's identity,

and allows one's existence to be significant and of value to the world - appears to be invariant across people with and without schizophrenia. Treatments such as ACT have been tailored toward people with schizophrenia, showing promise in reducing the believability of hallucinations and delusions while simultaneously reconstructing lives to revolve around commitment toward goals aligned with a person's central values (Gaudio & Herbert, 2006; Gaudio, Herbert, & Hayes, 2010; Veiga-Martínez, Pérez-Álvarez, & García-Montes, 2008). For example, one study compared ACT to enhanced treatment as usual (Gaudio & Herbert, 2006) for inpatients with psychotic disorders. Upon discharge, the ACT group exhibited improvements in affective symptoms, distress related to hallucinations, and social impairment. More patients in the ACT group experienced significant symptom reduction at discharge compared to those receiving enhanced standard care. Notably, reductions in the believability of hallucinations were only seen in the ACT group, and these reductions were strongly associated with decreased distress. It appears that changing people's attitudes toward delusions and hallucinations – rather than trying to eradicate them – is particularly important in helping individuals with schizophrenia live meaningful lives.

Trauma-Related Disorders

Meaning and purpose play a complex role in trauma-related disorders such as PTSD (Fontana & Rosenheck, 2004). Trauma has been referred to as a “crucible of meaning” in which one's sense of meaning is tested, transformed, and often torn asunder, with the potential for a new meaning system to emerge with the explanatory power to make sense of both losses and discoveries (Landsman, 2002). It is not uncommon for survivors to search for meaning in the wake of their trauma, as traumatic events disrupt assumptions about the self and world (Janoff-Bulman, 1989). For some, this search for meaning allows for a re-examination of life and opportunities for growth in various domains including personal strength, interpersonal relationships, appreciation of life, and a sense of possibility (e.g., Joseph & Linley, 2006; Tedeschi & Calhoun, 1996).

Some people report positive changes in their self-perceptions and feel they improved as a person for having experienced a traumatic event (e.g., Andreason & Norris, 1972; Tedeschi & Calhoun, 1996). To be clear—these are the subjective experiences of trauma survivors and any data on post-traumatic growth should be interpreted cautiously (Jayawickreme & Blackie, 2014). After all, researchers are unable to explore an alternative life trajectory without the trauma. Perhaps the majority of trauma survivors would have achieved equal or even greater personal growth over the course of time without the presence of trauma. Perhaps the subjective experiences are a strategy to cope with the difficulties that arise from experiencing a traumatic life disruption. As scientist-practitioners, we are less interested in the veracity of trauma survivors statements that their life trajectory has been significantly improved as a result of lessons learned and more interested in the multiple paths to acquiring well-being, dissecting the mechanisms that increase the possibility of positive change.

A study of adults with a recently deceased parent found that approximately 50% experienced a strengthening of their relationships with others, as they reported more fully appreciating the transience of meaningful connections with others (Malinak, Hoyt, & Patterson, 1979). Another study of survivors of a sinking cruise ship found that 94% of people reportedly “stopped taking life for granted” and 71% noted that they now strive to “live each day to the fullest” (Joseph, Williams, Yule, 1993). In some cases, positive changes can manifest rapidly after traumatic events. One study of sexual assault survivors found that many participants reported positive changes including increased empathy, stronger relationships, and a greater appreciation of life as early as two weeks following the assault (Frazier, Conlon, & Glaser, 2001). Another caveat is warranted, as this research does not suggest that any traumatic event is good/positive/healthy or the cause of positive changes; rather, this research describes the psychological management of the emergent distress and change (Coyne & Tennen, 2010).

Data suggest that two reasons that combat veterans seek services through the VA are weakened religious faith and a search for meaning in purpose, rather than the severity of PTSD symptoms (Fontana & Rosenheck, 2004). In some cases, traumatic exposure appears to strengthen religious faith (e.g., Calhoun, Cann, Tedeschi, & McMillan, 2000). While the exact mechanisms are unclear, theories suggest that people suffering from and working to overcome traumatic events may view their suffering as a form of redemption - a common theme emphasized by many religions (e.g., Frankl, 1962; McAdams & McLean, 2013). A strong sense of purpose may lead to healthier, more resilient trajectories following traumas (e.g., Bonanno, Papa, Lalande, Zhang, & Noll, 2005). Purpose leads to greater psychological flexibility, which allows individuals to adapt more effectively to changing environmental demands and thus experience fewer psychological symptoms in the wake of trauma (McKnight & Kashdan, 2009b). As a whole, the above research points to the paradoxical effect of traumatic events. While these experiences can shatter assumptive views that the world is a safe and benevolent place (Janoff-Bulman, 1989), they also can offer people a renewed sense of meaning and purpose as they rebuild their lives.

Social Relationships

Social alliances have served as important, life-sustaining resources throughout human history. If obtained, social support has allowed individuals to not only survive, but also expand their resources, perspectives, strengths, and skills by including other people within their self-concept (Aron & Aron, 1996). With this more expansive self, goal pursuits are more efficient and effective, and it becomes easier to fulfill basic psychological needs for belonging, competence, and autonomy (Deci & Ryan, 2000). To build a strong social support network, one must possess sufficient social competence and be driven to develop, negotiate, and maintain satisfying, meaningful social relationships. It is at this juncture that psychopathology can impede social functioning and dampen well-being. Psychological disorders cast a wide net of suffering affecting not only the individual, but also their friends, family, and caregivers (e.g., Maurin & Boyd, 1990). And in the same vein as every other human being, anyone with a mental illness can benefit from social support. Research suggests that greater social support and community integration can lead to better social functioning and life satisfaction among people with severe mental illness (e.g., Lam & Rosenheck, 2000; Rosenfield & Wenzel, 1997). Below, we review research in social functioning among people with depression, bipolar disorder, social anxiety disorder, schizophrenia, and trauma-related disorders.

Depression

Evolutionary theories offer insights into the interpersonal nature of depression (e.g., Allen & Badcock, 2003; Watson & Andrews, 2002). These theories state that when confronted with the threat of being viewed unfavorably by important people, one views their social value as systematically declining, increasing the risk of rejection, ostracism, and isolation. Sadness, anhedonia, loss of appetite, psychomotor retardation, and other forms of disengagement offer a moratorium on social activity. Energy is consolidated for future interactions whereby one's social attractiveness can be showcased via hard work, intelligence, humor/wit, or other desirable behaviors. Concerns about social risk and the depressive symptoms evoked impact communication, as a depressed person sends behavioral signals of withdrawal and elicits safe forms of support from others within the social group. Long ago, these behaviors were life-sustaining, as social exclusion almost certainly resulted in death. In modern times, these risk-management strategies are less effective and can shut off opportunities to fully engage with loved ones, form new social bonds, and derive positive emotions from one's social world.

Depressed mood may have an adverse impact on others via emotional contagion effects. A large body of evidence suggests that people with depression can socially transmit their depressed mood and other depressive symptoms to those with whom they interact (e.g., Joiner & Katz, 1999). Interestingly, face-to-face interaction may not be necessary to transmit negative mood states. A large-scale study of Facebook users found that when intentionally trying not to read the positively valenced posts of friends, people in turn produced fewer positive and more negative posts (Kramer, Guillory, & Hancock, 2014). More research is needed to explore the social behaviors of individuals who effectively "catch" negative moods from others, and how this relationship unfolds within social media platforms. Irritability is another unhelpful social behavior found among nearly half of patients with major depressive disorder (e.g., Fava et al., 2010; Perlis et al., 2005). Animal studies suggest that neurotransmitters implicated in the pathophysiology of depression, such as serotonin, play a role in inhibiting aggressive behavior (Carrillo, Ricci, Coppersmith, & Melloni, 2009), which may partially explain this heightened irritability. Other studies suggest that antidepressants targeting serotonin reduce quarrelsome behaviors and promote cooperation during group tasks (Knutson et al., 1998; Tse & Bond, 2006). Together, these studies offer an illustration of the potential neurobiological underpinnings of social deficits among people with depression.

Caring for people with depression can be particularly challenging for romantic partners or spouses, who must take on new roles and responsibilities that formerly belonged to their depressed partner, thus restricting their own social activities and leading to high subjective burden (Fadden, Bebbington, & Kuipers, 1987). One study of 260 spouses and relatives of depressed patients found that 20-50% of caregivers worried about the depressed person's general health, treatment, safety, and future. Caregivers also reported strained relationships with the depressed person and often reported seeking mental health treatment themselves (Van Wijngaarden, Schene, Koeter, 2004). Interestingly, the stage at which the depressed person is at in the trajectory of their illness can influence caregiver burden. Data suggest that families tend to have marked difficulties at one year and 3-4 years after the onset of depression - due to lost hope about their loved one returning "back to normal" (Muscroft & Bowl, 2000). These may be important intervention junctures to offer support and foster hope. Research shows promise for family-based interventions aimed at alleviating distress and enhancing knowledge among those caring for patients with Alzheimer's disease (e.g., Brodaty, Green, & Koschera, 2003; Eisdorfer et al., 2003), but research is lacking in the domain of caring for those with depression. Much can be learned from interventions targeting

those who care for patients with other illnesses (such as schizophrenia, detailed in the section below). Well-being interventions must move beyond the individual to the family unit and even the community for managing psychological disorders that affect such a sizeable minority of the population.

Bipolar Disorder

Emotion dysregulation is a hallmark of bipolar disorder. One might assume that the positive emotion persistence characteristic of bipolar disorder leads to deeper social relationships, but research suggests that this persistence only encompasses positive emotions related to reward and achievement, not those related to prosocial behaviors (e.g., love and compassion; Shiota, Keltner, & John, 2006). It is now understood that people with bipolar disorder have difficulties processing and understanding other people's emotions as well as their own. Data suggest that people with bipolar disorder are equally skilled as healthy controls at recognizing faces, but are significantly less skilled at recognizing and accurately labeling emotional facial expressions (Getz, Shear, & Strakowski, 2003). Issues with facial emotion recognition among this population may underlie difficulties in recognizing and resolving interpersonal problems (Getz et al., 2003). Research supports the notion that deficits in social perception predict poor social functioning (e.g., Penny, Mueser, & North, 1995), an issue that extends to children and adolescents with bipolar disorder. Relationships between people with bipolar disorder and their families are often strained. People with bipolar disorder are more likely to be separated, widowed, or divorced relative to healthy adults (Sanchez-Moreno et al., 2009). One explanation for this is potential stigma and rejection from family members due to misinformation and/or lack of understanding about the disorder (Elgie & Morselli, 2007). Caring for someone with bipolar disorder can be burdensome. Caregivers of people with bipolar disorder (relative to those with unipolar depression) show higher levels of expressed emotion (i.e., being overly critical, hostile, and over-involved). Caregiver burden is associated with depressive symptoms, which negatively impact the prognosis for the person with bipolar disorder and creates a strained home environment (for a review, see Ogilvie, Morant, & Goodwin, 2005).

Social Anxiety Disorder

People with social anxiety disorder experience marked impairments in virtually every relationship domain, from friends (Rodebaugh, 2009) to family (Schneier et al., 1994) to romantic relationships (Sparrevoth & Rapee, 2009). People with social anxiety disorder tend to have fewer friends and are less satisfied with their friendships (Schneier et al., 1994), even more so than people with major depressive disorder (Rodebaugh, 2009). These individuals have persistent fears of evaluation when in social situations or performance settings (Rapee & Heimberg, 1997). While studies suggest that these fears are largely the product of negative biases regarding one's social performance (e.g., Alden & Wallace, 1995), these individuals may actually perform poorly in social interactions and thus garner negative evaluations from others (e.g., Kashdan & Wenzel, 2005). It may be that negatively biased perceptions of one's social performance are not initially founded, but carrying such beliefs into social interactions leads to a self-directed focus (e.g., to monitor one's own performance and protect the self from social threat; Wells & Papageorgiou, 1998) and a subsequent inability to attend to interaction partners.

Behaviorally, people with social anxiety tend to be less dominant and appear less well-adjusted according to informant reports (Rodebaugh et al., 2014). They are also less likely to disclose personal information with others, hindering intimacy development. One study found that socially anxious people were less likely to reciprocate in a role-play interaction with escalating personal disclosures (Meleshko & Alden, 1993). Instead, socially anxious participants continued to disclose at a moderate level despite the magnitude of their partner's disclosures. Of course, the onus of intimacy building does not fall on one individual. Data suggest that in dyads, the presence of at least one highly socially anxious individual alters the quality of an interaction. In a lab-based social interaction, researchers found that during a personal disclosure condition, closeness was ranked highest when two strangers, both high in social anxiety, were paired together (Kashdan & Wenzel, 2005). In a small-talk condition, however, greater closeness was reported when two strangers, both low in social anxiety, were paired together. Across conditions, partners with marked discrepancies in their levels of social anxiety reported less closeness than those with similar levels of social anxiety (Kashdan & Wenzel, 2005). This study suggests that socially anxious individuals may be comforted by mutual anxiety when making personal disclosures, while less socially anxious people are better able to navigate awkward small talk and still form close bonds.

Positivity deficits among people with social anxiety disorder are evident in their difficulty engaging in intimacy-building behaviors with romantic partners. One correlational study found that men and women with social anxiety disorder reported less emotional expression, self-disclosure, and intimacy with their romantic partners compared with psychologically healthy adults from the community (Sparrevoth & Rapee, 2009). People with social anxiety disorder also struggle to be curious and enthusiastic in their support when romantic partners disclose positive events that happened to them. When a partner is curious

and enthusiastic, the partner who disclosed the good news experiences more intense and enduring positive emotions, attributed to the attentive partner and the relationship (Gable, Reis, Impett, & Asher, 2004). In a laboratory study of 174 heterosexual couples, people high in social anxiety provided less support for their partner's disclosed positive events as measured by self-, partner-, and observer-report. Interestingly, people high in social anxiety also received less support for their own positive events. Longitudinally, partners of people high in social anxiety who received less support for their positive event disclosures experienced a decline in relationship quality and were more likely to terminate the relationship six months later (Kashdan, Ferrisididis, Farmer, Adams, & McKnight, 2013).

Social anxiety also impedes physical expressions of intimacy in romantic relationships. One daily diary study followed 150 college students over a 21-day span and found that social anxiety was inversely associated with feelings of pleasure and connection during sex (Kashdan et al., 2011). In terms of directionality, stronger feelings of intimacy during sexual activity on a given day led to less socially anxious feelings the following day; an effect that was particularly true for people suffering from greater dispositional social anxiety (Kashdan et al., 2014). Beyond sexuality, recent evidence suggests that romantic partners with greater levels of social anxiety are less comfortable physically touching someone else and more frequently avoid physical contact with other people (Kashdan, Doorley, Stikma, & Hertenstein, in press). Together, these studies suggest that socially anxious individuals have difficulty connecting with partners during sex, but stand to benefit the most in terms of anxiety reduction after positive sexual experiences. Touch discomfort and avoidance may be one barrier to enhanced sexual intimacy among people with high social anxiety.

Cognitive-behavioral and pharmacological treatments have received much attention for the treatment of social anxiety disorder (e.g., Rodebaugh, Holaway, & Heimberg, 2004), but other, more nuanced approaches also show promise in directly targeting the social deficits characteristic of social anxiety disorder. Social effectiveness therapy (SET) is a multi-component behavioral treatment for children and adolescents with social anxiety disorder. SET aims to reduce social anxiety and avoidance, increase interpersonal skills, improve self-concept, and increase the frequency of socially enjoyable events (Turner, Beidel, Cooley, Woody, & Messer, 1994). The most innovative element of SET is the recruitment of "super-normal" kids who aid clinicians in helping peers with social anxiety disorder face their social fears, shape social skills, ensure initial positive social experiences, and serve as role models (Turner et al., 1994). Studies suggest that SET is an effective treatment for people with severe social anxiety disorder, teaching crucial skills that maintain high levels of social functioning at a 5-year follow-up assessment (Beidel, Turner, & Young, 2006). The innovative idea of bringing socially intelligent role models into psychological interventions is worthy of exploration in adults with social anxiety disorder. Prior work suggests that engaging family members or romantic partners in therapy improves the outcome of psychological conditions such as obsessive-compulsive disorder (Abramowitz et al., 2013; Renshaw, Steketee, & Chambless, 2005). Possible people to include in an intervention for social anxiety disorder should extend beyond family and romantic partners to anyone with high-level social skill and investment in therapeutic gain. If what a person requires to improve their emotional and social intelligence is deliberate practice with everyday social interactions with high-quality feedback, then an allied health professional alone is insufficient. Interventions can be optimized with access to people who can serve as a guide and role model. As a promising line of research in strength development, people with and without social anxiety disorder might benefit from access to role models who encapsulate behaviors that exemplify courage, curiosity, creativity, compassion, or other ideal personality profiles.

Schizophrenia

Schizophrenia leads to severe and wide-ranging deficits in social functioning (e.g., Hooley, 2010). These deficits become prominent early in the course of disorder, when symptoms have not yet fully manifested (i.e., the prodromal phase) (Ballon, Kaur, Marks, & Cadenhead, 2007). Interpersonal problems are evident among people at heightened risk for developing schizophrenia (Hans, Auerbach, Asarnow, Styr, & Marcus, 2000), suggesting social problems are not simply a result of disorder symptoms, medications, or hospitalizations. People with schizophrenia are often ostracized and avoided by others, making it extremely challenging to form close friendships (Hooley, 2010). One study paired research assistants with people with schizophrenia and tasked them with forming friendships over a two-week span. By the end of the study, there was a considerable increase in negative comments by research assistants directed toward patients with schizophrenia (Nisenson, Berenbaum, & Good, 2001). This study reflects broader relationship impairments; people with schizophrenia are six times less likely to get married than the general population (MacCabe, Koupil, & Leon, 2009). They are much less likely to enter into meaningful, long-term relationships, even when compared to others with severe mental illnesses (Hooley, 2010).

Research suggests that deficits in theory of mind may underlie social dysfunction among people

with schizophrenia, as they are less able to reason about and appreciate other people's mental states compared to healthy individuals (Corcoran, Mercer, & Frith, 1995; Frith & Corcoran, 1996). In addition to duration of illness, poor verbal fluency, and the presence of both negative and positive symptoms, deficits in theory of mind is one of the strongest predictors of poor social and community functioning (Roncone et al., 2002). People with schizophrenia have difficulty perceiving social cues; deficits that are unrelated to age, gender, or medication usage (e.g., Kline, Smith, & Ellis, 1992; Poole, Tobias, & Vinogradov, 2000). Most studies have focused on deficits in facial and vocal affect recognition. For example, data suggest that people with schizophrenia perform worse than healthy controls on tasks that require accurate perceptions of facial emotional expressions. These deficits may be indicative of broader perceptual problems concerning human faces (e.g., Kerr & Neale, 1993). People with schizophrenia also struggle to perceive emotional prosody in speech compared to controls (e.g., Murphy & Cutting, 1990). Again, this may be a function of overarching impairments in vocal recognition (Kerr & Neale, 1993). Various studies suggest that deficits in facial and vocal perception may be driven by both negative symptoms such as alogia and avolition (e.g., Kohler et al., 2003) and positive symptoms such as hallucinations and delusions (Kohler, Bilker, Hagendoorn, Gur, & Gur, 2000; Schneider, Gur, Gur, & Shtasel, 1995). Despite general facial and vocal recognition deficits, one study found that only facial and vocal *affect* recognition was positively associated with social dysfunction (Hooker & Park, 2002). Taken together, people with schizophrenia have significant difficulties perceiving facial cues, emotions, and changes in vocal tone. As a result, they are more likely to miss the subtleties in social conversations that facilitate intimacy and foster strong interpersonal connections.

The social environment in which people with schizophrenia live influences their symptomatology. Data from several large-scale surveys by the World Health Organization (e.g., Jablensky et al., 1992; Harrison et al., 2001) have offered a tantalizing finding - individuals with schizophrenia in developing countries exhibit fewer symptoms with a better prognosis than people with schizophrenia in first-world countries. Prognosis differences are partially explained by the quality of daily social interaction. Families and caregivers of people with schizophrenia tend to communicate using overly critical and intrusive comments, also known as high expressed emotion (EE). High EE often leads to negative, emotionally intense experiences for people with schizophrenia. When a person with schizophrenia shows signs of recovery and moves from inpatient hospitalization to outpatient or community care, high EE is one of the strongest predictors of relapse (e.g., Butzlaff & Hooley, 1998). While social interactions characterized by high EE clearly play a role in schizophrenia, the quality of data collected on EE in the developing world is much lower than in Western first-world countries (Bhugra & McKenzie, 2003). Thus, it is unclear the degree to which family EE is a factor in the course of schizophrenia in different countries; an alternative explanation is that EE findings are primarily a research methodology artifact.

High levels of EE and caregiver burden often go hand-in-hand (e.g., Barrowclough & Parle, 1997; Scazufca & Kuipers, 1996; Tarrrier et al., 2002). Given the debilitating nature of schizophrenia, the high burden experienced by caregivers is unsurprising. Burden tends to be especially high for caregivers who are mothers, have less education, and care for younger patients (Gutiérrez-Maldonado, Caqueo-Urizar, & Kavanagh, 2005). In addition to objective indicators, caregivers' perceptions of the person's symptoms influence their perceived level of burden. Interestingly, caregivers' perceptions of negative symptom severity are associated with caregiver burden, while perceptions of positive symptom severity are not (Provencher & Mueser, 1997). One explanation is that positive symptoms are more commonly viewed as uncontrollable whereas negative symptoms are viewed as more malleable and manageable by the person. Family interventions for people with schizophrenia and caregivers aim to reduce EE, improve caregiver coping abilities, and enhance caregiver knowledge (including correcting misbeliefs) (Pharoah, Mari, Rathbone, & Wong, 2010). These interventions have shown promise in alleviating caregiver distress and stigmatizing beliefs and behaviors (e.g., Szmukler, Herrman, Bloch, Colusa, & Benson, 1996); these interventions appear to be less effective at improving caregiver coping abilities (Szmukler et al., 1996; Szmukler et al., 2003). More research is needed to tease apart what works and what should be changed with regard to family-based interventions in an effort to better support patients with schizophrenia, aid family members, and promote positive social communication and functioning.

Trauma-Related Disorders

Post-traumatic stress disorder (PTSD) is associated with a wide range of social problems including social anxiety (Crowson, Frueh, Beidel, & Turner, 1998), anger (Jakupcak et al., 2007), sexual dysfunction (Cosgrove et al., 2002), family discord (Galovski & Lyons, 2004) and strained romantic relationships (Renshaw & Caska, 2012; Renshaw, Allen, Carter, Markman, & Stanley, 2014). Social support plays a critical role in the onset, course, and severity of trauma-related symptoms. A lack of social support has been cited as a risk factor for PTSD among war veterans (e.g., King, King, Fairbank, Keane, & Adams, 1998; Schnurr, Lunney, & Sengupta, 2004) and survivors of disasters and violent crimes (Johansen, Wahl,

Eilertsen, & Weisaeth, 2007; Zoellner, Foa, & Brigidi, 1999). One study found that negative reactions from other people following a traumatic event were strongly associated with PTSD symptoms and partially explained the association between victim-blame and PTSD (Ullman, Townsend, Filipas, & Starzynski, 2007). Strong social support networks can bolster resilience and reduce PTSD severity in the aftermath of traumatic events (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009; Schumm, Briggs-Phillips, & Hobfoll, 2006).

Data suggest that male veterans with chronic PTSD self-disclose less frequently, are less emotionally expressive with romantic partners, and have more intimacy problems compared to veterans without PTSD (Carroll, Rueger, Foy, & Donahoe, 1985; Riggs, Byrne, Weathers, & Litz, 1998). Veterans with, compared to without, PTSD report higher divorce rates (Cook, Riggs, Thompson, Coyne, & Sheikh, 2004). Of greater concern, male veterans with PTSD compared to without PTSD are more likely to be emotionally and/or physically abusive toward partners and children (Monson, Taft, & Fredman, 2009). Research has explored possible mechanisms underlying the association between PTSD and relationship dysfunction. One study of Iraq/Afghanistan and Vietnam veterans found that romantic partners' perceptions of withdrawal and numbness symptoms were associated with greater relationship distress, while partners' perceptions of re-experiencing symptoms were associated with less relationship distress (Renshaw & Caska, 2012). These findings suggest that PTSD symptoms that are less overt and cause individuals to pull away from partners (e.g., an inability to express loving feelings, withdrawal) may be particularly detrimental to relationship functioning, while symptoms that are more directly related to the trauma (e.g., physiological reactions to trauma-related cues) minimize partner distress and pull for supportive responses. Other research suggests that re-experiencing is associated with wives' perceptions that a veteran's PTSD symptoms are out of his control (i.e., external attributions), while withdrawal and numbness are associated with wives' perceptions that the veteran is responsible for his symptoms (i.e., internal attributions) (Renshaw et al., 2014).

Qualitative interviews with veterans suggest that harnessing strong military friendships are effective in navigating the difficult re-integration from combat zones back to the day-to-day family affairs of civilian life (Hinojosa & Hinojosa, 2011). Integrating families and relationship partners into treatment for returning veterans and others suffering from PTSD may be crucial in reducing emotional dysfunction and improving relationship communication, satisfaction, and commitment (Monson, Fredman, & Adair, 2008).

Concluding Thoughts

Generally, people with psychological disorders experience significant impairments in well-being. But this byline fails to capture the complexity of associations between particular disorders and particular dimensions of well-being. Several theoretically meaningful paradoxes exist. People with depression respond to negative events with less distress than healthy adults. People with bipolar disorder experience greater positive emotions than psychologically healthy adults and devote considerable effort to dampen potentially rewarding experiences. People with social anxiety disorder experience chronically low levels of positive emotions in both social and non-social situations; psychological difficulties that can be reduced by the presence of extremely positive sexual experiences or effort towards a purpose in life. People with schizophrenia construct meaning from their hallucinations and delusions, and often treatment leads to a painful reduction in meaning in life. Trauma survivors often derive stronger, appreciative, purposeful lives upon coping with their stressful experiences. The present chapter reviews research that highlights significant impairment across psychological disorders, but also illustrates that across three domains of well-being—positive emotions, meaning and purpose in life, and social relationships—a careful consideration of contextual influences offers new insights and intervention targets. Only by exploring the interplay between psychopathology and well-being will scientists and practitioners meet the demanding challenge of reducing suffering and improving the human condition.

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