

NORTHWESTERN UNIVERSITY

Calling on Courage:
The Use of a Courage Intervention to Increase Engagement in Exposure for Specific Fears

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

for the degree

DOCTOR OF PHILOSOPHY

Field of Clinical Psychology

by

Amanda Kramer Eix

EVANSTON, ILLINOIS

September 2021

ABSTRACT

Despite its demonstrated effectiveness, exposure therapy – repeatedly approaching a fear/anxiety trigger – is not widely used in the treatment of anxiety disorders. This may be due to its image as an aversive (and even harmful) approach to treatment and its reduced rates of compliance among patients. However, if exposure therapy emphasized a positive quality, such as courage, it may be seen as less damaging, compliance may rise, and outcomes may improve. Following a proof-of-concept study in which a brief writing intervention promoted a “courageous mindset” and intentions of courageous behavior, the current work sought to demonstrate if an intervention to increase courage could increase behavioral proclivity and consequent courageous behavior. When partialing experienced fear, those that underwent a courage condition demonstrated significantly more approach behavior in an exposure analogue. Additionally, several outcomes, including approach behavior, perceptions of one’s own courage, and willingness to engage in future exposure therapy showed small to moderate (though nonsignificant) effects. However, there were no observable effects of the courage intervention for other outcomes, including behavioral proclivity, feelings of fear and self-efficacy, and perceptions of the exposure task. Future studies will aim to strengthen the intervention and the study design to provide more robust support for a courage intervention.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my advisor, Dr. Richard Zinbarg. He took a chance on a twenty-two-year-old fresh out of her undergraduate studies and believed in her ideas and her potential. I will always be extraordinarily grateful for that. I could not have started on or continued with this journey without his unwavering enthusiasm and support. I am a better scholar, thinker, and person because of his tutelage and my gratitude is immeasurable.

I also want to thank Dr. Cynthia Pury for being such a staunch supporter of this work. It is because of her that I was able to publish my first academic paper and present in my first symposium. The world of courage research is small, and she is at the heart of it, and I thank her for being so welcoming and so encouraging. She showed me what a life in this world could look like and I continue to be inspired by that. I am honored to have her on this committee.

I also want to thank Dr. Dan McAdams. Despite never being directly involved in my projects, I always felt his genuine interest in my work and have always appreciated his insights and additions. I hope one day to be even a fraction of the researcher, writer, and teacher that he is, and I am lucky to have had his example to follow.

And of course, I want to thank my research team, Emily Weinheimer and Colin Drexler, for their hard work and dedication (and fearless approach of the lab spider) and my lab mate Alexander Williams for his support and encouragement (and some of my favorite workplace conversations).

I could not have done this without all of you.

DEDICATION

To my father, for starting me on the path toward this “charmed life” and supporting me in every step along the way.

To my mother, for her infinite positivity when I needed it most and for always taking my emotional support calls.

To my husband, because he saw the best and the worst of this journey and never wavered. You are my safety net and I am lucky to have you there to balance me.

To my brother, for understanding that this was really hard and I was always going to finish it anyway.

To my sister, for anticipating my needs and always being exactly what I needed her to be.

And to my best friend, for supporting me across schools, cities, states, and countries and for being the only non-academic who ever *wanted* to see one of my talks.

I owe all of this to you. You are my people.

Contents

Introduction	8
<i>The integration of positive psychology could increase engagement with exposure therapy</i>	8
Exposure therapy is effective, but underutilized	8
Exposure therapy is aversive and avoided.....	9
Integrating exposure with strengths-based approaches may aid in dissemination	11
<i>Individuals with anxiety disorders might see particular benefits of strengths-based approaches</i>	13
Strengths-based approaches emphasize approach goals and approach motivation over avoidance goals and avoidance motivation.....	13
Increased approach motivation can help counter avoidance	14
Approach motivation could be particularly beneficial in exposure therapy	18
<i>The right strength for facing one's fears in exposure therapy – courage.....</i>	19
What is courage?	19
Courage in the treatment of anxiety	21
A mechanism to activate courage.....	23
<i>Calling on courage: a new intervention to activate courage and help individuals face their fears</i>	25
Courage as self-regulation.....	27
Similarities to other psychotherapeutic approaches	28
Existing support for a specific courage intervention	34
<i>The present study.....</i>	35
Methods.....	38
<i>Participants</i>	38
<i>Procedure</i>	39
Intervention.....	39
Sorting task.....	40
Exposure analogue.....	41
Questionnaires	42
<i>Measures</i>	43
Fear, approach, and courage in the narratives	43
Sorting task responses	43
Sorting task latencies	43
Anxiety (before each exposure analogue step).....	44
Self-efficacy (during the exposure analogue).....	44
Behavioral approach.....	45
Behavioral Task Rating Scale (BTRS; Olatunji, Lohr, Sawchuk, & Tolin, 2007)	45
Courage Measure.....	46
Willingness for future exposure	46
Results	46
<i>Fear, approach and courage in narratives</i>	46
Fear	46
Approach	47
Courage.....	48
<i>Behavioral proclivity.....</i>	49
Explicit behavioral proclivity	49
Implicit behavioral proclivity	50

<i>Approach behavior</i>	50
Number of steps completed.....	51
Completion score.....	51
<i>Mediation of behavioral proclivity on the relationship between the intervention and approach behavior</i>	52
<i>Feelings of fear, self-efficacy, and courage</i>	53
Feelings of fear.....	53
Mediation of fear on the relationship between the intervention and approach behavior	54
Self-efficacy	56
Courage.....	56
<i>Perception of exposure analogue</i>	57
<i>Willingness for future exposure</i>	57
Discussion	58
<i>Limitations</i>	59
The impact of COVID-19.....	59
Considerations in study design.....	60
Intervention strength.....	62
Testing in a non-clinical sample.....	64
<i>Future Directions</i>	64
Research in treatment-seeking samples.....	64
Focus on therapist experience	65
<i>Conclusions</i>	66
Tables and Figures	68
<i>Figure 1: T-test results for approach scores in the narratives between conditions</i>	68
<i>Figure 2: T test results for courage scores in the narratives between conditions</i>	69
<i>Figure 3: Results of the 2-way ANOVA (condition x response type on response latency)</i>	70
<i>Figure 4: Mediation of behavioral proclivity on the relationship between condition and approach behavior</i>	71
<i>Figure 5: Mediation of reported fear on the relationship between condition and approach behavior</i>	72
References	74
Appendices	89
<i>Appendix A: Rating scales for ratings of approach, fear, and courage in interviews</i>	89
<i>Appendix B: Subjective Units of Distress (SUDS) Scale</i>	90

List of Tables and Figures

Figure 1: T-test results for approach scores in the narratives between conditions	83
Figure 2: T test results for courage scores in the narratives between conditions	84
Figure 3: Results of the 2-way ANOVA (condition x response type on response latency)	85
Figure 4: Mediation of behavioral proclivity on the relationship between condition and	86
approach behavior	87
Figure 5: Mediation of reported fear on the relationship between condition and approach	
behavior.....	88
Table 1: Results of BTRS item t-tests.....	90

Introduction

The integration of positive psychology could increase engagement with exposure therapy

Exposure therapy is effective, but underutilized

In evidence-based treatment of anxiety disorders, exposure therapy is consistently recommended in the American Psychiatric Association's Practice Guidelines (2004; 2007; 2009). In exposure therapy, anxious individuals are encouraged to approach the triggers of their fears to learn that the danger of these situations is not as great as expected and/or that they can tolerate their fear. Over time, this practice serves to both reduce fear and to reduce the avoidance that often results from fear. Exposure therapy has been shown to be an effective component in the treatment of a wide range of anxiety disorders, including generalized anxiety disorder (Zinbarg, Lee, & Yoon, 2007), panic disorder (Barlow, Gorman, Shear, & Woods, 2000; Gould, Ott, & Pollack, 1995), social phobia (Rapee, Gaston, & Abbott, 2009), and specific phobias (Öst, 1996) as well as obsessive compulsive disorder (Abramowitz, 1996; Franklin, Abramowitz, Kozak, Levitt, & Foa, 2000) and posttraumatic-stress disorder (Foa, Rothbaum, Riggs, & Murdock, 1991; Taylor et al., 2003). Furthermore, the effects of exposure therapy are large – meta-analyses suggest effect sizes as high as 1.08 for exposure therapy for anxiety disorders (Deacon & Abramowitz, 2004) compared to the standard 0.68 for therapy at large (Smith & Glass, 1977) – and have been demonstrated both in clinical trials and in routine clinical practice (Stewart & Chambless, 2009).

However, despite its effectiveness, exposure therapy is underutilized in clinical practice. In community samples, 40-70% of clinicians report never providing exposure therapy to their patients (Chu et al., 2015), and a study by Wolitzky-Taylor et al. (2015) found that, among

patients in an outpatient psychiatry clinic, only 10.4% of individuals with a principal diagnosis of an anxiety disorder were offered exposure therapy. Some of this sparsity in use is due to lack of training or competency (Wolitzky-Taylor et al., 2018). However, even among clinicians specifically trained in exposure therapy, only 54% report using exposure therapy at all and only 15% report that they use it with “all or almost all” of their patients (Becker, Zayfert, & Anderson, 2004). More surprising is that, among clinicians who explicitly endorse a cognitive behavior therapy (CBT) orientation, only 5% endorse the use of exposure over other methods (Whiteside, Deacon, Benito & Stewart, 2016), despite the fact that experts agree that exposure is an active ingredient in CBT for anxiety disorders (e.g. Barlow, 2004; Carey, 2011) and empirical studies demonstrate that exposure alone is as effective as multi-component CBT treatments for anxiety (Adams, Brady, Lohr, & Jacobs, 2015; Deacon & Abramowitz, 2004). Instead, more clinicians report using other CBT techniques, such as cognitive restructuring (>97%) and relaxation (>75%; Hipol & Deacon, 2013). Taken together, these studies suggest a pattern of underutilization of exposure techniques in the treatment of anxiety, despite its effectiveness.

Exposure therapy is aversive and avoided

The underutilization of exposure may be due, at least in part, to the “public relations problem” that exposure therapy suffers (Richard & Gloster, 2007). At a surface level, exposure therapy could appear problematic – therapists are asking patients to do precisely the things that provoke the anxiety that brought them to the office to begin with. Perhaps unsurprisingly, many professionals find the technique aversive (Richard & Gloster, 2007) and hold a variety of negative beliefs about it. Exposure therapy is seen as a technique that is inflexible to patient needs, unsuitable for complex cases, non-efficacious for “real world” cases, and responsible for

worsening of symptoms and higher rates of dropout and attrition (Feeny, Hembree, & Zoellner, 2003). Indeed, some practitioners believe that the end result of exposure therapy does not justify its means and that clients would be better off suffering from their anxiety than undergoing the treatment (Richard & Gloster, 2007). Though these concerns are largely unfounded (Feeny et al., 2004; Olatunji, Deacon, & Abramowitz, 2009), the results of several studies (e.g. Becker, Zayfert, and Anderson, 2004; Becker-Haimes et al., 2017) suggest that these negative attitudes toward exposure do reduce the rate at which clinicians use exposure therapy.

Furthermore, there are at least some studies that suggest that patients themselves are averse to exposure therapy. In the study by Wolitzky-Taylor et al. (2015) referenced above, though 10.4% of patients were offered exposure therapy, only 7.5% accepted and initiated exposure therapy. This is consistent with other data suggesting that, among patients referred to treatment programs that involve exposure, such as cognitive behavior therapy, approximately 20-30% of patients fail to initiate these treatments (Issakidis & Andrews, 2004; Kehle-Forbes, Meis, Spont, & Polusny, 2016). Even among patients that begin treatment, attrition rates are problematic, with studies reporting dropout rates as low as 10.3% (Issakidis & Andrews, 2004) and as high as 43.8% (Bados, Balaguer, & Saldaña, 2007). Though the reasons cannot be stated with certainty, at least one study supports the notion that the difficulty of exposures drives these increased attrition rates. In one study of individuals undergoing prolonged exposure therapy for PTSD, approximately half of individuals that dropped out of treatment reported that they dropped out because they had significant problems completing the in-vivo exposure homework assignments, suggesting that these exposures are so difficult as to motivate leaving treatment

(Hernandez-Tejada, Acierno, & Sanchez-Carracedo, 2017). Taken together, these studies provide evidence that exposure is aversive to patients as well as to their therapists.

Integrating exposure with strengths-based approaches may aid in dissemination

If this aversiveness is the key concern, dissemination of exposure therapy might increase if it were placed in a more positive context. Exposure therapy has, like most other forms of psychotherapy, historically focused on the negative (namely, distress and impairment) and therefore orients treatment exclusively around doing what must be done to reduce these negative states. However, research on strength-based approaches over the past two decades suggests that this need not be the case. Though they vary slightly in their specific nature, strengths-based approaches identify, use, and build upon the positive attributes that a patient already possesses to both reduce distress and increase well-being. Some, like Padesky and Mooney's (2012) Strengths-Based Cognitive Behavior Therapy, make the development of a positive quality (or qualities) the primary focus of therapy. In fact, in their paper, they focus on how the technique could be used to build resilience in the absence of any presenting problem – the target of therapy is thus not symptom reduction or distress amelioration, but simply increased well-being.

That said, other strengths-based approaches work to integrate an individual's strengths into the treatment of more urgent concerns that are targeted for amelioration. This can be done to varying degrees. For instance, in Flückiger and Grosse Holtforth's (2008) *resource activation* technique, the therapist works to utilize the patient's strengths. As Conoley, Padula, Payton, and Daniels (1994) suggested, recognizing and using patients' strengths can help to gain their cooperation and acceptance in the early stages of therapy. In the *resource priming* manipulation, one micro-intervention for increasing *resource activation*, therapists simply talk to a colleague

about the various strengths their patient possesses and how they can be leveraged in the therapy in the minutes before a session. They are thus primed to use those strengths and engage in resource-activating interventions in order to “initiate and maintain positive feedback circuits that potentially foster the therapeutic alliance, augment the patients’ receptiveness, and support the implementation of adaptive coping strategies” (Flückiger & Grosse Holtforth, 2008). Indeed, in their study, Flückiger & Grosse Holtforth found that using this priming intervention in only the first five treatment sessions resulted in enhanced progress toward therapy goals and greater symptom reduction over the span of 20 sessions, suggesting the effectiveness of even a small reorientation toward patient strengths.

In other approaches, such as Seligman, Rashid, and Parks’ (2006) *positive psychotherapy* (PPT), the therapist works collaboratively with the patient to identify the patient’s strengths and build upon them in the course of therapy with the aim of using those strengths to help reduce distress. PPT is built upon Peterson & Seligman’s (2004) seminal work, *Classification of Virtues and Strengths* (CVS), in which the authors identified 24 character strengths in six major categories: wisdom, courage, humanity, justice, temperance, and transcendence. Over the course of PPT, the client first identifies their “signature strengths” and then learns how to use these strengths (and others) to both combat negative emotions and create more positive emotions in their lives. In pilot studies, this approach has been shown to decrease depressive symptoms and increase happiness (Rashid, 2015). In fact, when compared to CBT, PPT did not differ significantly in terms of reducing depressive symptoms, but it was significantly more effective in boosting happiness (Asgharipoor, Farid, Arshadi, & Sahebi, 2012). In this way, clients are not

only able to address the concerns that they came in with, but they also stand to gain something inherently positive in the process.

If exposure therapy could integrate a strengths-based approach and similarly boost positive emotions (in addition to reducing negative emotions), it may be seen as less aversive and perhaps, at least at times, pleasant. Though research on patient perceptions of positive psychotherapy is still in its infancy, at least one study (Scott, 2018) reported that patients who engaged in a positive psychological intervention found it “very enjoyable and highly rewarding.” Therefore, it may be that patients not only feel more positive *after* the intervention, but *during* the intervention as well. Adding a positive component to exposure therapy could therefore make the experience more pleasant, less painful, and ultimately easier to engage with, both for patients and for clinicians.

Individuals with anxiety disorders might see particular benefits of strengths-based approaches

Strengths-based approaches emphasize approach goals and approach motivation over avoidance goals and avoidance motivation

In emphasizing the individual’s positive qualities, strengths-based approaches focus on what one is working toward rather than what one is trying to move away from. In other words, these approaches tend to emphasize approach goals over avoidance goals. Indeed, they follow the recommendation of Kanfer (1992), who suggested decades ago that therapeutic goals should focus on what the patient knows how to do rather than what they do not. Stated differently, therapeutic motivation should be approach-, rather than avoidance-, framed. Though only a few studies have directly examined the role of approach (versus avoidance) goals for therapy, the

evidence converges to suggest that approach goals are beneficial in treatment. For instance, individuals diagnosed with depression who set approach, rather than avoidance, goals in their multi-modal cognitive-behavioral treatment showed more symptomatic improvement (Wollburg & Braukhaus, 2010). Furthermore, patients with a variety of diagnoses achieve better treatment outcomes in cognitive-behavioral therapy when avoidance motivation is reduced and approach motivation is increased (Berking et al., 2003), as would likely result from increasing approach (rather than avoidance) goals. Therefore, strengths-based approaches, which inherently pull for approach goals and approach motivation, are likely to be helpful in the treatment of a wide range of disorders.

Increased approach motivation can help counter avoidance

While an emphasis on approach goals and approach motivation could be helpful in therapy in general, it could be particularly useful for anxious individuals. The anxiety disorders are largely characterized by avoidance – in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), every diagnosis in the anxiety disorders category (other than GAD) explicitly names avoidance among their criteria. According to the revised reinforcement sensitivity theory (RST: Gray & McNaughton, 2000), such avoidance behavior is the result of signals from two systems within the brain: the fight-flight-freeze system (FFFS) and, more often, the behavioral inhibition system (BIS). The FFFS mediates responses to all aversive stimuli. It detects an immediate threat and creates fear and/or panic, leading the individual to desire to escape the situation and seek safety (Gray & McNaughton, 2000; Corr, 2008). For instance, the FFFS would have led our ancestors to flee

from a deadly predator, knowing their life was in imminent danger. If the FFFS is not faced with competing input, it will drive immediate avoidance behavior.

However, threats in our current society are rarely so life or death. Instead, we face more subtle threats, such as an individual with social phobia faced with an impromptu speech in class. They will likely experience FFFS activation and the urge to flee the classroom, but they will not necessarily *realize* that urge. They may be faced with a conflict between the urge to avoid the speech (and its resulting fear) and the urge to face the speech to get a good grade. In these situations, where the FFFS-driven urge to escape is challenged by a conflicting urge to approach the situation, the BIS comes into play (Gray & McNaughton, 2000; Corr, 2008). The BIS mediates conflict between goals, such as the conflict between an avoidance goal and an approach goal or competing avoidance goals (e.g. avoiding the speech and avoiding embarrassment for leaving). In order to resolve this conflict, the BIS inhibits any current action and seeks input that will help decide between the two goals. This often manifests as rumination or worry and, relatedly, results in feelings of anxiety. If this type of conflict arises repeatedly, as might happen for someone who readily perceives threats in the environment and must decide on the best response, it may develop into an anxiety disorder.

Indeed, high BIS levels are strongly tied to the development and maintenance of anxiety disorders. Heightened BIS predicts both an increased risk of onset and a more chronic course of anxiety (e.g. Turner, Beidel, & Wolff, 1996; Johnson, Turner, Iwata, 2003; Struijs et al, 2018; Zinbarg et al., 2016), as well as more severe anxiety symptomology (Papachristou et al., 2018). Mechanistically, research suggests that this relationship may be mediated by the use of ineffective coping strategies in the face of anxiety, including maladaptive cognitive strategies

like self-blame and catastrophizing (Izadpanah et al., 2016) or experiential avoidance (Papachristou et al., 2018). Individuals with high BIS likely experience more conflict between goals and are more often in a state of worry or rumination, making them more likely to suffer from anxiety disorders. The link between the BIS and anxiety is clear.

However, the BIS does not only respond to signals from the FFFS. It also responds to signals from the behavioral activation system (BAS), a system that mediates reactions to rewarding stimuli (Gray & McNaughton, 2000; Corr, 2008). It detects potential positive outcomes and creates a sense of optimism, leading an individual to seek out those outcomes. While BAS activation was historically linked to impulsivity (Gray, 1990; Gray & McNaughton, 2000), more recent research links BAS more clearly to extraversion and positive emotionality (e.g., Elliot & Thrash, 2002; Lucas, Diener, Grob, Suh, & Shao, 2000) and even suggests that BAS activation may underlie the strong association between the two traits (Smillie et al., 2012). While the FFFS promotes avoidance, the BAS promotes approach. The BIS, meanwhile, can inhibit either of those responses.

Though the inhibitory action of the BIS and the activating action of the BAS were once hypothesized to exert independent effects (the *separable subsystems hypothesis*; Corr, 2001), more recent research suggests that the two work in concert (the *joint subsystems hypothesis*; Corr, 2001). When situations are mixed in terms of their threat or reward cues, the BIS will *facilitate* responses to threat cues (by inhibiting the urge to escape) and *antagonize* responses to reward cues (by inhibiting the urge to approach), whereas the BAS will *facilitate* responses to reward cues (by activating the urge to approach) and *antagonize* responses to threat cues (by activating the urge to escape). Therefore, the behavioral response of an individual depends on the

interaction of signals from both systems. In a situation like exposure therapy, where the short-term threat of experiencing fear is paired with the long-term reward of relief from anxiety, the *joint subsystems hypothesis* is particularly relevant.

In such situations with both reward and threat relevance, both systems will be activated and will compete for the corresponding behavioral outcome (approach and avoidance, respectively). Ultimately, an individual is either going to approach or avoid a situation, though there may be variations in the degree to which one engages in either behavior. For example, stronger BAS activation may lead to approach behavior overall, but that approach might be more restrained if BIS activation is also high and more “no holds barred” if BIS activation is comparably low. That said, when either the BIS or the BAS is far more sensitive than the other and generally shows greater activation in response to relevant stimuli, the other system will struggle to compete. For example, studies have shown that, in response to aversive stimuli, individuals with high BIS sensitivity and low BAS sensitivity show greater affective responses and greater avoidance of punishment (Corr, 2002; Knyazev & Wilson, 2004). However, as BAS sensitivity increases, these responses are weakened. When BAS activation is strong enough, it can adequately compete with BIS and reduce the affective and behavioral responses that the BIS provokes. Indeed, both Harmon-Jones et al. (2009) and McGregor et al. (2010) have suggested that approach motivation reduces BIS activity and the resulting anxiety. Furthermore, approach motivation, as indicated by left frontal asymmetry, predicts both reduced error-related negativity (ERN) amplitude (Nash et al., 2012) and a reduced startle response (Jackson et al., 2003), both well-supported measures of anxiety (see Meyer, 2016 for review of ERN and Hyde, Ryan, and

Waters, 2019 for review of measures including startle response). Increased BAS activation, or approach motivation, reduces anxiety (and avoidance behavior) in the face of threat.

Approach motivation could be particularly beneficial in exposure therapy

Therefore, increased BAS activation could be critical in exposure therapy. Gray and McNaughton (2000) proposed that, when a situation is perceived as threatening, the FFFS is activated. However, if the individual is not in immediate danger, the resulting conflict can activate the BIS, producing anxiety. Avoidance behavior is one resolution to this conflict (and resulting anxiety) and offers the individual a temporary reprieve from their anxiety because of the drop in BIS activation. However, as any exposure therapy manual will explain, this avoidance serves to maintain anxiety over time by teaching the individual that in order to get that reduction in anxiety and/or avoid the feared outcome, they must avoid. Put differently, avoidance deprives the individual of the opportunity to test their threatening expectations. Therefore, when faced with the threatening situation again, the FFFS response, the BIS response, and the resulting avoidance are maintained (and may even become stronger if the individual holds the counter-factual belief that if they had approached the situation, their feared outcome would have occurred). This fuels a feedback loop of FFFS/BIS activation, anxiety, and avoidance behavior in response to the threat that serves to maintain anxiety over time.

Exposure therapy was designed to interrupt this cycle. By engaging in approach behaviors, even though FFFS activation is strong and avoidance behaviors would be preferred, the individual learns that they do not need to avoid the situation to avoid the feared outcome or to get relief from their anxiety (as their anxiety will eventually subside anyway). Therefore, when faced with the same threatening situation again, the FFFS activation, the goal conflict (and

resulting BIS activation), anxiety, and avoidance are all reduced, reducing the likelihood of avoidance in the future.

However, if BAS competes with BIS, then it may be possible to interrupt the cycle before the approach behavior even occurs. If BAS activation and approach motivation could be boosted *before* exposure to the threat, then BIS activation would be attenuated, thus reducing the anxiety and avoidance motivation that the FFFS might create in response to the threat (in addition to the heightened approach motivation). Consequently, the individual would be less likely to avoid and more likely to approach. Though the end result would ultimately be the same (increased approach behavior), if the cycle were interrupted earlier, it would ostensibly be easier to reach this outcome. Therefore, increased BAS activation/approach motivation could promote improved outcomes in exposure therapy for anxiety disorders by increasing approach motivation in response to threat, making exposures easier to complete and ultimately more successful. A strengths-based approach, especially one that emphasized approach over avoidance, could be particularly beneficial for those with anxiety, especially in exposure therapy.

The right strength for facing one's fears in exposure therapy – courage

What is courage?

Research on PPT (and other strengths-based approaches) so far has focused primarily on treating depression, a fairly diffuse negative state. Therefore, the focus on positivity, broadly defined, as a counter to that negativity makes sense. However, exposure therapy targets fear and/or anxiety, which are more acute and specific negative emotions. It would thus make sense to narrow down the scope of positivity to a strength that could specifically counter fear and/or anxiety, and Peterson & Seligman's (2004) CVS includes one such strength – courage.

In one of the earliest writings on courage, Aristotle proposed that the virtue of “courage” was the “golden mean” between avoidance (or cowardice) and excessive or thoughtless pursuit of action (or recklessness). This suggests that avoiding action demonstrates a lack of courage, but actions taken with no fear are also not “courageous,” but instead risky. This perspective on courage also has a strong hold in the scientific literature. In his pioneering work on courage, Rachman (1978) came to define courage as “perseverance despite fear” (pg. 234) and, though decades of work have debated the meaning of courage (see Lopez, O’Byrne, & Peterson, 2003), this definition still holds strong. Indeed, in a more recent investigation of courage, Rate et al. (2007) came to a similar conclusion and stipulated that “we might best describe or conceptualize courage as: (a) a willful, intentional act, (b) executed after mindful deliberation, (c) involving objective substantial risk to the actor, (d) primarily motivated to bring about a noble good or worthy end, (e) *despite, perhaps, the presence of the emotion of fear*” (pg. 95). Furthermore, Pury, Kowalski, and Spearman (2007) reified this construct of courage by specifying it as *personal courage*, which is demonstrated in “actions which are only courageous given the context of the actor’s personal limitations” (pg. 101), rather than *general courage*, the perhaps more prototypical form of courage in which “the person acts courageously compared to how people in general would be expected to act in that situation” (pg. 101). The idea that courage, particularly *personal* courage, requires fear is still strong in psychological research.

Furthermore, laypeople also seem to agree with this distinction. When asked to rate the courageousness of a character in a vignette, people consistently rated courage higher when the character was both in actual danger *and* experienced fear. Characters that performed similarly dangerous actions without fear were rated as less courageous (Kramer & Zinbarg, in revision).

Furthermore, even when the characters were *not* in danger, actions taken with fear were consistently rated as more courageous than actions taken without fear. There is agreement among researchers and among laypeople that one is most courageous when they are facing their fear. Therefore, when thinking of a strength to draw on to help people face their fears (as in exposure therapy), courage is the most obvious choice.

Courage in the treatment of anxiety

Because it relates so naturally to fear and anxiety, it is not surprising that courage has already been found to play a strong role in therapeutic treatment, and particularly in the treatment of anxiety. In his essential book *Fear and Courage*, Rachman (1978) described the immense courage he saw in patients of traditional behavioral therapies, such as the exposure-based practices of desensitization and flooding. He noted that “the key feature of this procedure is that the fearful person is encouraged to persevere in approaching the fearful stimulus *despite* his fear reactions” (pg. 244). In particular, he describes a woman with OCD who “bravely opted” to participate in flooding and, despite the “exceedingly difficult” work, “she persevered with the program, displaying commendable courage in doing so” (pg. 225). In this work, Rachman was among the first to acknowledge that engaging in these sorts of behavioral therapies took courage and that that courage should be commended.

In the same book, Rachman (1978) states that “courageous behavior is determined predominantly by a combination of competence and confidence, and both of these qualities are strengthened by repeated and successful practice” (pg. 248). In other words, if an individual believes he/she is capable of facing their fears, then they will be able to do so, and this can be strengthened over time. This idea was echoed and brought to the forefront by Bandura’s (1977)

pioneering work on self-efficacy. Bandura (1977) postulated that “psychological procedures, whatever their form, serve as means of creating and strengthening expectations of personal efficacy,” or “the conviction that one can successfully execute the behavior required to produce the outcomes” (pg. 193). He believed that the fundamental goal of therapy was to increase an individual’s belief that they are capable of performing the actions that will get them closer to their goals. As Rachman said, this belief in their own competence (and the growing confidence in that belief) may ultimately manifest as courage.

Indeed, Bandura himself (Bandura & Locke, 2003) stated that self-efficacy beliefs “affect whether individuals think in self-enhancing or self-debilitating ways, how well they motivate themselves and *persevere in the face of difficulties*” (p. 87) and, more recently, Goud (2005) theorized, “belief and trust in one’s capabilities (i.e. confidence) *is a primary force in countering fears, risks, and the safety impulse*” (p. 110). Therefore, self-efficacy is critical, if not necessary, to courageous action. In fact, Bandura (1997) found that individuals with greater self-efficacy experience decreased stress and decreased perceptions of threat when faced with fearful situations. Furthermore, these individuals tended to persevere longer in these situations – in other words, they demonstrated greater courage. Bandura saw self-efficacy as fundamental to all “psychological procedures” and, if self-efficacy determines courageous behavior, it follows that courage is likely fundamental to these procedures as well.

Critically, self-efficacy has been tied specifically to improved performance in the psychotherapeutic treatment of individuals with anxiety. In 1977, Bandura and Adams tracked self-efficacy throughout a course of systematic desensitization, in which phobic individuals are exposed to the triggers of their fear until their arousal decreases, and found that increases in self-

efficacy predicted the degree of behavior change (in this case, decreased avoidance of triggers) following desensitization. The decades of research that followed continued to support the finding that increased self-efficacy predicted increased approach toward feared stimuli among phobic individuals (e.g. Bandura, Adams, Hardy, & Howells, 1980; Telch, Agras, Taylor, Roth, & Gallen, 1983; Williams, Dooseman, & Kleifeld, 1984). Furthermore, a meta-analysis by Williams & Telch (1984) found that self-efficacy consistently predicted phobic behavior even when anticipated anxiety was partialled out, and Lee (1984) found that self-efficacy accounted for greater variance in approach behavior than did anticipated anxiety.

Indeed, after finding that neither anticipated anxiety nor perceived danger were significant predictors of phobic behavior, Williams and Watson (1985) concluded that “treatments might be more effectively directed toward raising clients’ perceptions of self-efficacy than toward disconfirming their beliefs in danger” (pg. 136). That said, despite more recent research continuing to demonstrate that self-efficacy corresponds to reductions in anxiety symptoms following treatment (Bouchard et al., 2007; Gaudiano & Herbert, 2007; Delsignore et al., 2008), thirty years later, exposure therapy still tends to focus primarily on disconfirming danger beliefs. Therefore, an intervention that could activate self-efficacy, and thereby activate the idea of courage, would be a much-welcomed addition to the psychotherapeutic treatment of anxiety.

A mechanism to activate courage

This raises the question – how does one “activate” courage? A theoretical model of courage by Hannah, Sweeney, & Lester (2010) suggests that courage could be activated by activating elements of a “courageous mindset” characterized by the internal (positive traits,

positive states, values and beliefs) and external (social forces) resources that one possesses to face the situation at hand. In other words, if an individual is encouraged to think of what has helped them face their fears before, they can activate that sense of courage again. Activation of any of these resources can then activate a courageous “cognitive affective processing system” (CAPS) that includes one’s encoding categories, expectancies, goals, values, affects and self-regulatory plans. In other words, activation of the courageous mindset can activate a variety of mental constructs, including self-efficacy, that can increase one’s inclination to act, or *behavioral proclivity* (Finkel, 2014, p.13). If adequately activated, these “CAPS units” can increase one’s behavioral proclivity toward courageous behavior and therefore increase the likelihood of courageous behavior itself. Taken together, the model suggests that to promote courageous behavior in a given context, one can prime an individual to consider what resources they have that would allow them to be courageous in that situation. As a result, proclivity toward courageous behavior will be activated that will make such behavior more likely.

Therefore, if we can successfully activate at least some of the resources an individual has available to help them face their fears, then we might activate both their proclivity toward courageous behavior and, ultimately, courageous behavior itself. That said, the resources available to any one individual are likely idiosyncratic – the things that allow one individual to face their fears will likely be different from those of another individual. Indeed, Pury (2019) reported that, when asked to describe what they did to feel or act more courageous, participants reported a wide variety of behaviors. The activator for these resources must be broad enough to capture all of these idiosyncrasies while still being specific to instances of courage. Therefore, I

propose a new intervention in which people are asked to perform a simple task: think about a time when you successfully faced your fears.

Calling on courage: a new intervention to activate courage and help individuals face their fears

The intervention I propose will ask participants to recall, in detail, an autobiographical memory in which they faced something they feared. In other words, they will be asked to recall a time when they demonstrated courage. Specifically, the proposed intervention asks individuals to think about a time in which they “successfully faced [the feared situation] despite being afraid.” The initial prompt is left broad to account for both the wide variety of potential “courageous” behaviors the individual could recall and the wide variety of potential resources the individual could call upon. The prompt thus allows any individual to recall any courageous experience in an effort to prime whatever resources are relevant to that individual, as Pury (2019) demonstrated they can be highly varied. I include the word “successful” due to past experiences in which individuals recalled a time when they faced their fear, but it went poorly, thus reaffirming their fears. Therefore, I emphasize successful, positive memories. Furthermore, I intentionally leave the word “courageous” out of the prompt for this intervention. As mentioned above, the definition of “courage” is contentious. Though I support the definition of courage as “the ability to act despite the presence of fear,” this definition is not universal and many hold a more *fearless* definition of courage, in which “courage is simply the absence of fear in situations where it might well be expected to be present” (Mowrer, 1960, pg. 435). If I use the word “courage” rather than specifying the meaning, individuals could try to recall a memory of fearlessness, which could be problematic for several reasons. If individuals recall a time when they were fearless, they will

not be recalling an instance where they overcame fear and thus will have very little likelihood of activating the resources that allowed them to be courageous. Second, they may be unable to recall *any* instances of fearlessness, leading them to feel *less* courageous and, possibly, like more of a coward, which is antithetical to the effect I am trying to produce. Therefore, in order to best capture all possible courageous situations (and not capture fearless situations), I leave the prompt broad and specify our definition of courage instead of using the word itself.

Following the initial prompting question, the interventionist (such as a therapist or, in the proposed study, an experimenter) will follow up with the anxious individual. They will first help the individual clarify the courageous event. In past versions of this study, some individuals had a difficult time identifying a moment where they faced their fear as they dismissed small moments of courage. Therefore, the interviewer will help to identify moments where the individual faced the fear, even if the event seems insignificant to the person, and amplify it for them. This might entail providing examples or eliciting multiple memories. Following the identification of a relevant memory, the interviewer will ask follow-up questions to help the individual identify the resources they used in that moment. They will be asked questions that target the variety of “resources” suggested by Hannah, Sweeney, & Lester (2010). The question “Did you draw on any of your personality traits?” will identify positive traits. The question “Did you notice any positive emotions related to your choice to act?” will identify positive states. The question “Why was it important to act the way you did?” will identify values. The question “What were you thinking at the time or about it afterwards?” will identify beliefs. Additionally, I borrow two questions from narrative therapy (White, Wijaya, White, & Epston, 1990) to help fully develop the “storying” of the event. The question “How were you able to do what you did?” will help to

account for any other resources that the individual called upon in that moment. Finally, the question “What does this say about you as a person?” can tie these various resources together and perhaps provide a more meaningful narrative for the event in question. This intervention should activate courageous resources in a way that increases proclivity toward courageous behavior and ultimately, courageous behavior itself.

Courage as self-regulation

To further clarify the intended mechanism of this intervention, I draw on another model – the I³ Model (Finkel, 2014). In order to predict the intended behavior of facing one’s fears (such as in exposure therapy), this model calls upon three orthogonal processes – instigation, impellance, and inhibition. *Instigation* refers to “the effects of exposure to a particular target object in a particular context that normatively affords a certain behavior” (pg. 11). For example, the instigator in exposure therapy would be the location in which the exposure takes place. By being placed in a room with their feared stimulus, the individual will have exposure to the stimulus and thus the opportunity to approach it. I hope that the courage intervention will act as an *impellor*, or a force that will “increase the likelihood that the individual will experience a proclivity to enact the afforded behavior” (pg. 12), such that individuals who engage in the task are both more likely to *believe* they want to or can act and more likely to actually *act*. I expect that the intervention will increase one’s *behavioral proclivity*, or inclination to act, as discussed above. This should, in turn increase one’s actual courageous behavior.

Furthermore, I do *not* propose that the courage intervention will act solely by reducing the individual’s fear in the situation – rather, I consider fear a possible *inhibitor*, a factor that could “increase the likelihood that people will override the effects of instigation and impellance,

thereby reducing the likelihood of the behavior” (pg. 13). I expect that individuals in the courage condition might experience less fear due to the fear-attenuating effects of approach motivation. However, I expect that any increases in courageous cognition or behavior will also be due to the impelling effects of the intervention. In other words, I expect the impelling effects of the intervention to exist above and beyond any reductions in fear. In sum, I expect that this intervention, by asking individuals to recall an instance of their own courage, will activate the individual’s courage and *impel* them to both be more inclined to face their fears (*behavioral proclivity*) and to actually face them.

Similarities to other psychotherapeutic approaches

This intervention is novel in that it is specifically designed to activate courage and help individuals face their fears as they might in exposure therapy. However, it shares similarities with a number of other well-supported and successful psychotherapeutic approaches, lending further support for its potential efficacy.

Third-wave behavior therapies. In its broad strokes, this intervention is in line with the principles that underlie the third-wave behavioral approaches, including Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Dialectical Behavior Therapy (DBT; Linehan, 2018), Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2001), and meta-cognitive approaches (Wells, 2000). These approaches were defined by Hayes (2004) as follows:

Grounded in an empirical, principle-focused approach, the third wave of behavioral and cognitive therapy is particularly sensitive to the context and functions of psychological phenomena, not just their form, and thus tends to emphasize contextual and experiential change strategies in addition to more direct and didactic ones. These treatments tend to seek the construction of broad, flexible and effective repertoires over an eliminative

approach to narrowly defined problems, and to emphasize the relevance of the issues they examine for clinicians as well as clients. (p. 658).

Traditional behavior therapies rely on first-order change strategies to directly alter psychological processes, such as the act of directly changing thoughts with cognitive restructuring or directly changing behavior with exposure. Third-wave behavior therapies, on the other hand, focus more on the context and function of these psychological processes and therefore rely on second-order change strategies, such as mindfulness, acceptance, and cognitive defusion to change one's relationship to their sensations, thoughts, and or urges.

This courage intervention asks individuals to engage in these second-order change strategies and change their relationship with their fearful feelings and thoughts by giving it a new context – one of courage. By recalling the memory in detail and describing their thoughts and feelings, the individual is becoming mindful of these processes. By acknowledging these experiences as fear, they are accepting that emotional experience instead of trying to avoid it. By recalling an instance where these thoughts and feelings did *not* dictate behavior, they are defusing the urges to escape/avoid from the action itself. I am asking individuals to acknowledge the dialectic of both feelings afraid *and* choosing to face that fear instead of avoiding it. Furthermore, as many third-wave behavioral therapies do, this intervention asks individuals to consider how this courageous behavior is tied to their goals, values, and strengths. They are encouraged to see that their fear was not inherently *bad* – it just *was*, and because of that fear, the individual was able to act in line with their goals, values, and/or strengths. Third-wave behavioral therapies have been considered a useful complement to more traditional behavior therapies (Hayes & Hofmann, 2017), including exposure, and an intervention that aligns with the philosophy of these approaches should prove equally complementary.

Narrative therapy. Though not formally categorized as a third-wave approach, narrative therapy shares thematic similarities with these third-wave approaches. The assumption in narrative therapy is that people experience distress when the stories of their lives, as told by themselves or others, do not represent their lived experience. Therefore, the central aim of narrative therapy is to “restory” these life narratives in a more satisfying, helpful way (White, Wijaya, White, & Epston, 1990). As in third-wave approaches, the emphasis is not on changing the events that have happened, but on changing one’s relationship to these events by changing the narrative that encapsulates them.

Beginning in adolescence, individuals begin a process of *autobiographical reasoning*, “a process of self-reflective thinking or talking about the personal past that involves forming links between elements of one’s life and the self in an attempt to relate one’s personal past and present” (Habermas & Bluck, 2000). In this process, individuals create coherence between the different events of their lives by incorporating them into a bigger narrative. This “dominant narrative” creates a lens through which life events are viewed. For example, an individual who often finds himself afraid and avoiding might string his life events together with a narrative of being “a coward.”

In narrative therapy, the client and therapist investigate the ways in which this “dominant narrative” does not fully represent the individuals lived experience (White et al., 1990). One way in which this is done is to identify “unique outcomes” – that is, outcomes that do not fit the dominant narrative. For instance, the “coward” might be encouraged to identify moments in which he did not behave as a “coward” and instead faced his fears, as I do in this intervention. When these outcomes are identified, the individual is guided to ascribe meaning to these events

through a series of questions. As White et al. (1990) outline, these questions may “invite persons to account for the unique outcomes (for example, ‘How did you manage to resist the influence of the problem on this occasion?’)” (pg. 16), or “invite a resdescription of self, others, and relationships according to what is reflected in the unique outcomes (for example, ‘what does your success at resisting the problem say about you as a person?’)” (pg. 17). Over time, these explorations help to shift one’s narrative to better encapsulate these “unique outcomes” and tell a more satisfying, helpful story about one’s life.

In this courage intervention, I am using the principles of narrative therapy on a much smaller scale. I am asking the individual to tell the story of a time when they felt fearful but experienced the “unique outcome” of facing that fear in order to tap into a narrative of themselves as a courageous individual, at least in one story. I am asking them to ascribe meaning to this “unique outcome” by asking the sorts of questions that White et al. (1990) suggest in order to facilitate an understanding of the individual as courageous (and thus help them behave as such in the immediate future). Given the success of narrative approaches in other contexts, such as family therapy (Etchison & Kleist, 2000), it may prove useful in fighting anxiety as well. Furthermore, by conducting a quantitative analysis of the effects of my intervention, I will be able to provide some empirical support to narrative therapeutic approaches, which have faced criticism for having relatively little empirical support (Etchison & Kleist, 2000). I will extend the principles of narrative therapy into the context of anxiety, where it is used less frequently, and adapt this potential solution to a novel problem.

Solution-focused therapy (SFT). In helping patients identify “unique outcomes” and how they coped, my intervention also shares similarities with solution-focused therapy (SFT). As

summarized by Corcoran & Pillai (2009), “Solution-focused therapy is a strengths-based approach, emphasizing the resources people invariably possess and how these can be applied to the change process.” In SFT, clients are encouraged to identify “exceptions,” or times when they have coped successfully with their problem rather than letting it be a barrier to them (de Shazer, 1994), quite similar to the “unique outcomes” identified by White et al. (1990). Therapists are encouraged to *elicit* a situation, *amplify* the details, *reinforce* the exception, and then *explore* how the exception happened (De Jong & Berg, 2002). Clients are thus empowered to think of how they were able to successfully tackle the problem that faces them.

My intervention is an SFT-informed intervention with a specific emphasis on courage. It starts with an exception question by asking individuals to think of a time when they *faced* a feared situation. As Quick (2013) discusses in her SFT-focused approach to anxiety, when talking about such instances, clients often bring up “the four C’s” – courage, coping, caution, and choice. In this intervention, I hope to follow Quick’s example and emphasize the courage that the individual demonstrates, highlight the effective coping tools the individual used, validate any appropriate caution that was taken due to fear, and emphasize the role of the individual’s choice in *choosing* to act courageously. Therefore, at least in part, this study will demonstrate further empirical support that an SFT approach to anxiety is effective. Furthermore, from this SFT-informed foundation, my intervention expands. It establishes the connection between the exception that the individual describes and the more stable traits, values, and strengths that they possess in order to ground the exception in a broader, more personally meaningful context. It should therefore serve not only to set the stage to help the individual overcome the problem that

is exposure, but also tie that problem to something with inherent value to them and make it more worthwhile and, ultimately, more positive.

Positive psychotherapy (PPT). Finally, as mentioned early in this manuscript, my intervention emphasizes the positive psychological value of courage and is thereby grounded in the principles of positive psychotherapy (PPT). In terms of technique, it most closely resembles the *Positive Introduction* employed in PPT. In the *Positive Introduction*, patients are asked to tell a story about their lives in which they used their strengths to either accomplish something meaningful or to overcome a significant challenge (Rashid & Ostermann, 2009). Fitzpatrick & Stalikas (2008) hypothesize that bringing up these positive experiences early in therapy can promote therapeutic change by asking clients to consider a new perspective and providing them with access to resources to be built upon in therapy. By shifting the narrative to one that specifically asks about facing one's fears, the emphasis would be shifted to the strength that is most critical to exposure therapy – courage. Once more, this study would provide further empirical support to an intervention like the *Positive Introduction*, but in the specific case of courage with the specific application to exposure.

In sum, this courage intervention borrows from some of the newer approaches to therapy (such as third-wave approaches, narrative therapy, solution focused therapy, and positive psychotherapy) to make the transition to exposure more graceful, more positive, more empowering. Instead of directly targeting the individual's feelings of fear, thoughts about the situation, or behaviors, I instead ask them to think about an instance where they faced their fear and examine, for themselves, how they did that and what that means. By shifting how these individuals contextualize their response to fear, I may help them tie it to a more satisfying

narrative and ultimately help push them to engage more with the current problem of exposure in a more confident, self-affirming way.

Existing support for a specific courage intervention

In an earlier proof-of-concept study (Kramer & Zinbarg, 2019), I have already demonstrated promising effects of an intervention of this sort. In that study, participants were asked to spend ten minutes writing about “a time in which [they] successfully faced a situation despite being afraid.” Following that brief intervention, participants were asked to sort a variety of fear-relevant behaviors as actions that they either would or would not do. Those who engaged in the courage intervention (compared to individuals who instead wrote about a time when they avoided a situation because they were afraid) said that they would engage in more of these hypothetical fear-relevant behaviors when asked and were faster to say that they would engage in these behaviors, demonstrating an increase in expectancies of courageous behavior, one measure of behavioral proclivity, at both an implicit and an explicit level. In a subsequent study, participants who were anxious about public speaking were asked to complete a public speaking task and were then asked whether or not they were willing to return to the laboratory and repeat the task at a later time. Compared to individuals in the avoidance condition, participants in the courage condition were more likely to say they would engage in the follow-up speaking task, thus demonstrating an increase in intentions of courageous behavior, another form of behavioral proclivity. These results, though small in effect size, suggested that the brief writing intervention can activate a “courageous mindset” and can promote more courageous behavioral intentions. The early evidence suggests that a courage intervention works at the level of expectancies of courageous behavior, and I believe an expanded intervention (as described above) will reproduce

these effects on a larger scale and help individuals to directly face their fears. In sum, this intervention should activate courage and thereby the “courageous” mindset, increase behavioral proclivity, and increase courageous behavior itself in a way that makes the process of facing one’s fears less aversive and more positive.

The present study

In the present study, I aim to test the effects of the proposed courage intervention in an analogue to exposure therapy. I will deliver my courage intervention and subsequently ask fearful participants to engage in an exposure analogue task modeled after a single-session exposure therapy treatment. In order to make my analogue as clinically relevant as possible, I will test this intervention in individuals with an intense (though not necessarily phobic) fear of spiders. Intense fears of animals are quite common, with the National Comorbidity Survey (NCS) reporting a lifetime prevalence rate of 22.2% (Eaton, Bienvenu, & Milovan, 2018). Animal phobias, in which that fear is accompanied by avoidance or impairment, are among the most common phobias, with the NCS reporting a lifetime prevalence rate of 5.7% (Eaton, Bienvenu, & Miloyan, 2018). Spider phobia may account for the majority of these cases, as one study (Schmitt & Müri, 2009) found a global prevalence rate of 3.5-6.1% for spider phobia. Furthermore, in one survey, Davey (1991) found that 75% of people were at least mildly afraid of spiders, suggesting it is a common fear as well as a comparatively more common phobia. Given the high incidence of fear of spiders, individuals with this particular fear may be easier to identify and recruit for this study.

I expect that my courage intervention will provide a positive frame for the exposure analogue and will therefore make the exposure analogue less aversive to participants.

Furthermore, I expect that my courage intervention will increase behavioral proclivity and, ultimately, courageous behavior in the exposure analogue.

My hypotheses for this work are as follows:

1. Individuals who engage in the courage intervention (compared to a control intervention) will describe greater approach behavior and greater perceived courage in their narratives.
 - a. Participants in the courage condition will obtain greater scores for the level of “approach” of the behaviors they describe in the narrative, as rated by an observer.
 - b. Participants in the courage condition will obtain greater scores for the level of “courage” of the behaviors they describe in the narrative, as rated by an observer.
2. Individuals who engage in the courage intervention (compared to a control intervention) will demonstrate increases in behavioral proclivity at both an a) explicit and b) implicit level.
 - a. Participants in the courage condition will sort more items as behaviors they “would do” in the sorting task.
 - b. Participants in the courage condition will be faster to give “would do” responses and slower to give “would not do” responses in the sorting task.
3. Individuals who engage in the courage intervention (compared to a control intervention) will demonstrate greater approach behavior.
 - a. Participants in the courage condition will progress farther in the exposure analogue following the intervention.

4. The effect of the courage intervention in promoting courageous behavior will be partially mediated by increases in behavioral proclivity.
5. The courage intervention will reduce fear in the exposure analogue.
 - a. Participants in the courage condition will self-report reduced fear during the exposure analogue.
6. The courage intervention will exert effects above and beyond reductions in fear.
 - a. The relationship between the courage intervention and increased courageous behavior will remain after partialing reported fear.
7. The courage intervention will increase self-efficacy.
 - a. Participants in the courage condition will self-report greater self-efficacy (as indicated by 'confidence' in the task) during the exposure analogue.
8. Individuals who engage in the courage intervention (compared to a control intervention) will report more self-reported courage following all behavioral tasks.
 - a. Participants in the courage condition will score higher on a state courage scale - the Courage Measure.
9. Individuals who engage in the courage intervention (compared to a control intervention) will perceive the exposure analogue as less aversive and more positive.
 - a. Participants in the courage condition will rate the exposure analogue less negatively in a self-report follow-up questionnaire.
 - b. Participants in the courage condition will rate the exposure analogue more positively in a self-report follow up questionnaire.

10. Individuals who engage in the courage intervention (compared to a control intervention) will report greater likelihood of engaging in exposure in the future.

Methods

Participants

Ninety-six undergraduate students at a mid-sized Midwestern university were recruited through introductory psychology courses and completed the research for course credit. All students participating in research were required to fill out a packet of questionnaires including an abbreviated version of the Fear of Spiders Questionnaire (FSQ; Szymanski & O'Donahue, 1995), an 18-item measure that assesses an individual's fear of spiders, and the Courage Measure (CM; Norton & Weiss, 2009), a 12-item measure of courage. 10 items from the FSQ were selected for use as a screening measure due to space constraints. For the full length FSQ, a score of 70 or above indicates that an individual scores at or above one standard deviation below the mean for a sample of spider-phobic individuals (Muris & Merckelbach, 1996). For an 18-item measure, this translates to an average item score of 3.9. Therefore, for the shortened screening measure of 10 items, a cut-off score of 39 was used. Any student scoring at or above a 39 on the shortened FSQ was invited to participate in the study. The average shortened FSQ score in the sample was 57.23 (SD=6.99). Once participants were recruited for the full study, they took the full version of the FSQ. The average score of the full-length FSQ for all participants was 85.06 (SD=17.26).

The sample was aged 18-22 years with an average age of 18.9 and was predominantly (69.4%) female. The sample was mixed in terms of ethnic and racial composition. In terms of ethnicity, 18.8% of the sample was Hispanic, and 81.3% was not. In terms of race, 33.7% of the

sample was Caucasian, 11.2% was African American, and 40.8% was Asian, with 9.2% reporting other racial identities.

Procedure

Participants entered the laboratory space and were consented into the study. The experimenter informed participants that they would be asked to engage in a variety of activities related to their fear of spiders but was vague as to what these activities would be. This was done due to concern that if the participants were told that the study would involve direct exposure to a spider, they would leave the study before having the opportunity to engage in the behavioral exposure analogue. Following consent, participants began the session with the intervention.

Intervention

Sessions began with participants speaking to an experimenter who delivered either the courage intervention or a control intervention. In the courage condition, the experimenter opened by asking participants to “think about a time when [they] came into contact with a spider and were able to successfully face that fear – as in [they] didn’t try to escape or get away. Does anything come to mind?” Participants were guided toward a memory of a successful approach, and the experimenter followed up with questions designed to activate the resources the participant used in the event they described, such as, “Did you draw on any of your personality traits?”, “Did you notice any positive emotions related to your choice to act?”, “Why was it important to act the way you did?”, “What were you thinking at the time or just after?”, and “How were you able to do what you did?”. Additionally, participants were asked two questions pulled from narrative therapy techniques - “How were you able to do what you did?” and “What does that say about you as a person?” – in order to highlight narrative themes and enhance

personal relevance/meaning. These questions were asked late in the interview as they are often asked later in therapy (see Dyck, 2000 for an example) in order to pull together themes that have already been drawn out in earlier questioning. These interviews were recorded. The experimenter spoke to each participant for 5-10 minutes (mean=7.16, SD=1.58).

In the control condition, the participant still spoke to an experimenter in order to account for any therapeutic effects of feeling validation or encouragement from another person. Instead of recalling a time when they faced their fears and the behaviors that they engaged in at that time, participants were asked to “think about the last time [they] came into contact with a spider.” The follow up questions were similar to the courage condition but emphasized the thoughts and feelings of the participants and **not** their behavior. The experimenters were trained to engage in validation and Rogerian empathizing. If the participant described behavior, the experimenter gently redirected them to their feelings. If my assumption is correct and my intervention does not work primarily by reducing fear, but by increasing approach motivation, then this should be an adequate control in that it focuses on the emotion and not the associated behavior. Though participants often still recalled their behaviors, they were likely not processing those behaviors at the same deep level of processing that individuals in the courage condition will be asked to do. Instead, their deep processing was oriented to their emotions. As in the courage condition, the experimenter spoke to the participant for approximately 10 minutes.

Sorting task

Following the manipulation, participants began a sorting task. This task is modeled after the sorting task used in prior tests of a courage manipulation (Kramer & Zinbarg, 2019). In that study, the sorting task was used twice: first in regard to fears of blood, injury, and injection

(Study 1) and the in regard to fears of public speaking (Study 2). This task was also used in a pilot study regarding fears of spiders. In each of these cases and in the current study, the items in the task were modified to reflect the fear being studied. Specifically, in this study, participants were shown 50 items describing behaviors related to spiders in plain text on a computer screen. They determined if they “would do” (approach) or “wouldn’t do” (avoid) the behaviors described. Sorting task items were shown in a random order until all 50 were seen. Both the response chosen (“would do” or “wouldn’t do”) and the response latency of the choice were recorded. This task took approximately 5 minutes per participant.

Exposure analogue

Next, participants engaged in an exposure analogue modeled after a behavioral exposure analogue used in a dissertation study by Vorstenbosch (2009). A second experimenter, who was blind to which condition the participant completed, entered the room and gave the following instructions:

“We are about to start the next part of our session, which will be a behavioral exposure analogue. This task is designed to mimic exposure therapy, in which you would be asked to get progressively closer to the thing you are afraid of – in this case, spiders – in order to reduce your fears over time. I am going to ask you to perform a number of steps. We do not expect that everyone will be able to perform each step; only go as far as you want to go. It makes no difference to me or the research team how far you get – we are just genuinely curious about how far you want to go in this task. Once you are ready to begin, I will bring the spider into the room and give you directions for each step. In order to successfully complete a step, you will be asked to perform the task for 10 consecutive

seconds. The 10 seconds will begin whenever you start, and I will count them aloud. You will have 30 seconds to successfully begin each step. If you have difficulty performing a particular step or don't want to, just let me know and we will stop the task."

There were seven total steps in the exposure analogue: 1) Walk as near to the spider's enclosure as you can, 2) Crouch so you are at eye level with the spider, 3) Pick up the spider's enclosure, 4) Reach into the enclosure with an oven mitt, 5) Reach into the enclosure with a bare hand, 6) Touch the spider with one finger, and 7) Touch the spider with your full hand.

Following each instruction, the experimenter asked each participant whether they were willing to carry out the step and asked them to rate a) their current anxiety and b) their level of confidence that they could complete the step. If the participant indicated that he or she could not attempt one of the steps, then the experimenter repeated the instructions once more for that specific step. The exposure analogue was terminated once the participant failed to perform one of the required steps, or when the participant had completed all seven steps. For steps that were not completed, participants were asked to give a rating of a) how anxious they would be if they were *about* to complete the task and b) how confident they would be that they *could* complete the task.

Questionnaires

Finally, participants completed several short questionnaires, including an assessment of the behavioral exposure analogue and the Courage Measure. Following all experimental procedures, participants provided their demographic information. They were then asked by the experimenter if they would be willing to engage in exposure in the future, and to rate that willingness. Finally, using a funnel debriefing, participants were assessed for their level of

knowledge about the purpose of the study before being fully informed about the nature of the study.

Measures

Fear, approach, and courage in the narratives

Each participant's narrative interview was recorded and rated for three scores: the level of fear the participant experienced, the degree of approach behavior they demonstrated, and the amount of courage they demonstrated in the narrative. Fear was rated on a 1 (alert/awake, concentrating well) to 10 (highest anxiety/distress ever felt) scale, with 0 representing no mention of fear/anxiety. Approach was rated on a 1 (leave situation immediately) to 10 (handle the spider alone, making contact) scale, with 0 representing no mention of approach behavior. Courage was rated as a ratio of (fear times approach)/100. The scales are provided in Appendix A. Ratings were made by an independent observer.

Sorting task responses

The sorting task items were descriptions of various behaviors related to spiders, including items such as "looking at pictures of spiders" or "be in a room with a spider." Participants made a "would do" or "wouldn't do" decision for each item. The number of "would do" responses chosen was counted and used as an indicator of stronger expectancies of (or greater proclivity for) courageous behavior, or the "courageous mindset."

Sorting task latencies

In addition to the "would do" versus "wouldn't do" distinction, the time participants took to respond to each item was also recorded. For this task, shorter latencies for approach responses were taken to indicate greater accessibility of a courageous mindset.

For the latency data, any data point falling beyond three standard deviations of the mean latency for that particular participant was considered an outlier and removed from analysis. As demonstrated by Ratcliff (1993), when variability between subjects is high, standard deviation cutoffs have higher power to detect effects. Furthermore, a cutoff of three standard deviations is highly conservative and avoids significant data loss while maintaining power. Once outliers were eliminated, the average latency for all “would do” responses and the average latency for all “wouldn’t do” responses for each participant was calculated.

Anxiety (before each exposure analogue step)

Before each step of the exposure analogue, participants gave a rating of their fear about the next step. Using a Subjective Units of Distress (SUDs) scale, participants rated their anxiety from 0 (“no distress”) to 100 (“highest anxiety/stress you have ever felt”) and were given anchors for every 10 points (see Appendix B). If a participant would not complete a step, the experimenter asked, “how much anxiety would you feel if you were about to complete the next step?” Participants completed these hypothetical ratings for each step they did not complete.

Self-efficacy (during the exposure analogue)

Before each step of the exposure analogue, participants gave a rating of their perceived self-efficacy. Similarly to Williams and Watson’s (1985) study, among other studies, participants were asked to rate how confident they were that they could complete the next step of the task, on a scale from 0 (“completely uncertain”) to 100 (“completely certain”). If a participant did not complete a step, the experimenter asked, “how confident *would* you be that you could complete the next step?” Participants completed these hypothetical ratings for each step they did not complete.

Behavioral approach

As in the Vorstenbosch dissertation, two approach scores were given for the exposure analogue. The first score measured the number of steps the participant completed, ranging from 0 (if the participant does not walk any closer to the spider) to 7 (participant touches the spider with their full hand). The second score was a finer measurement of the extent to which participants completed each step of the exposure analogue. There was 2 possible points for each step – 0 points if the participant did not attempt the step, 1 point if they attempted the step but did not hold it for 10 consecutive seconds (or walk 10 feet in the first step), and 2 points if they held it for 10 consecutive seconds (or walked all 10 feet in the first step)

Behavioral Task Rating Scale (BTRS; Olatunji, Lohr, Sawchuk, & Tolin, 2007)

In order to assess each participant's emotional experience during the exposure analogue, the BTRS fear items, which assessed participants' subjective appraisals of fear during the exposure analogue, were administered. These four items were slightly modified and read as follows: 1) During this task, I felt afraid, 2) During this task, I felt like running away, 3) During this task, I felt my heart pound, and 4) During this task, I felt like I was in danger. These items were rated on an 11-point scale from 0 (not at all true) to 10 (very true). These items have excellent internal consistency ($\alpha=0.97$; Olatunji & Deacon, 2008). In addition, for the purposes of this study, four additional positively-valenced items were added to assess participants' subjective appraisals of their positive perceptions of the exposure analogue. 1) During this task, I felt confident, 2) During this task, I felt like facing my fears, 3) During this task, I felt energized, and 4) During this task, I felt capable. These items were also rated on an 11-point scale from 0 (not at all true) to 10 (very true).

Courage Measure

The Courage Measure (Norton & Weiss, 2009) is a 12-item scale that assesses an individual's beliefs about their own courage. The scale includes 8 positive items such as "I tend to face my fears" and 4 reverse-coded items such as "If something scares me, I will try to get away from it." Each item is scored on a scale from 1 (never) to 7 (always) and an average score for all 12 items is obtained. Participants were asked to rate the items as they felt right now, in this moment. This measure was given at the end of the study.

Willingness for future exposure

In order to assess participants' willingness to engage in exposure in the future, the experimenter asked the participant to rate how willing they would be to engage in future exposure therapy "on a scale from 0 (no willingness at all) to 100 (you would go right now if you could)."

Results

Because data collection was cut short due to the COVID-19 pandemic, the sample was smaller than intended (96 total) and was divided unevenly between conditions (42 in the control and 54 in the courage condition, respectively). Because the normality of distributions should not be assumed in small samples and because unequal groups are more likely to have unequal variances, tests of the assumptions of normality and equal variances were conducted before running any parametric test to improve validity. In cases where either the assumption of normality or the assumption of equal variances was violated, a non-parametric test was conducted in addition to the more traditional parametric test.

Fear, approach and courage in narratives

Fear

To examine differences in the level of fear described in the narratives between conditions, a comparison of the observer-rated fear scores was conducted. The data from neither the control ($W(38)=0.88$, $p>0.001$) nor the courage ($W(49)=0.85$, $p>0.001$) conditions were normally distributed. In the control condition, 61% of individuals scored 7 or higher, leading to a negatively skewed distribution. Similarly, in the courage condition, 69% of individuals scored 8 or above, leading to a negatively skewed distribution. Because the data were non-normally distributed and were more ordinal in nature, the nonparametric Mann-Whitney U-Test was conducted. The Mann-Whitney U Test indicated no significant difference between the control (mean rank=44.62) and the courage (mean rank=43.52) conditions, $U=907.5$, $n_1 - n_2 = 11$, $p<0.001$, thus failing to provide evidence that there were differences in narrative fear scores between the two groups.

A traditional t-test was also conducted. Levene's test indicated no significant differences in variance between the two conditions ($F=0.05$, $p=0.783$), so equal variances were assumed. There were no significant differences found in the fear scores between the control ($M=6.53$, $SD=1.86$) and the courage ($M=6.49$, $SD=1.92$) conditions, $t(85)=0.09$, $p=0.93$, again failing to provide evidence that there were differences in narrative fear scores between the two groups. Further, Cohen's effect size value ($d=0.02$) suggested low practical significance.

Approach

To examine differences in the approach behavior described in the narratives between conditions (Hypothesis 1a), a comparison of the observer-rated approach scores was conducted. The data from neither the control ($W(38)=0.83$, $p>0.001$) nor the courage ($W(49)=0.81$, $p>0.001$) conditions were normally distributed. In the control condition, 57% of individuals

scored 3 or lower, leading to a positively skewed distribution. In the courage condition, 73% of individuals scored 8 or above, leading to a negatively skewed distribution. Because the data were non-normally distributed and were more ordinal in nature, the nonparametric Mann-Whitney U-Test was conducted. The Mann-Whitney U Test indicated a significant difference between the control (mean rank=29.93) and the courage (mean rank=54.91) conditions, $U=1465.52$, $n_1 - n_2 = 11$, $p<0.001$. Those in the courage condition spoke of events characterized by greater approach behavior than did those in the control condition, indicating that the intervention did elicit narratives of approach behavior.

A traditional t-test was also conducted. Levene's test indicated significant differences in variance between the two conditions ($F=30.88$, $p<0.001$), so equal variances were not assumed. Approach scores were significantly higher in the courage ($M=8.20$, $SD=2.05$) than in the control ($M=4.47$, $SD=3.47$) conditions, $t(56.57)=-5.88$, $p<0.001$. As in the Mann-Whitney U Test, the t-test showed that those in the courage condition spoke of events characterized by greater approach behavior than did those in the control condition, indicating that the intervention did elicit narratives of approach behavior. Further, Cohen's effect size value ($d=-1.35$) suggested large practical significance. These results can be seen in Figure 1.

Courage

To examine differences in the amount of courage described in the narratives between conditions (Hypothesis 1b), a comparison of the observer-rated courage scores was conducted. The data from neither the control ($W(38)=0.84$, $p>0.001$) nor the courage ($W(49)=0.96$, $p>0.001$) conditions were normally distributed. In the control condition, 55% of individuals scored 2.0 or lower, leading to a positively skewed distribution. In the courage condition, 67% of

individuals scored 5.0 or above, leading to a negatively skewed distribution. Because the data were non-normally distributed, the nonparametric Mann-Whitney U-Test was conducted. The Mann-Whitney U Test indicated a significant difference between the control (mean rank=29.25) and the courage (mean rank=55.44) conditions, $U=1491.50$, $n_1 - n_2 = 11$, $p<0.001$. Those in the courage condition spoke of events characterized by greater courage than did those in the control condition, indicating that the intervention did elicit narratives of courage.

A traditional t-test was also conducted. Levene's test indicated no significant differences in variance between the two conditions ($F=0.40$, $p=0.53$), so equal variances were assumed. Courage scores were significantly higher in the courage ($M=5.23$, $SD=2.05$) than in the control ($M=2.71$, $SD=2.25$) conditions, $t(85)=-5.52$, $p<0.001$. As in the Mann-Whitney U Test, the t-test showed that those in the courage condition spoke of events characterized by greater approach behavior than did those in the control condition, indicating that the intervention did elicit narratives of approach behavior. Further, Cohen's effect size value ($d=-1.19$) suggested large practical significance. These results can be seen in Figure 2.

Behavioral proclivity

Explicit behavioral proclivity

To examine differences in behavioral proclivity between conditions (Hypothesis 2a), a comparison of the number of "would do" responses on the sorting task between the conditions was conducted. The data from both the control ($W(40)=0.96$, $p=0.18$) and the courage ($W(52)=0.97$, $p=0.13$) conditions were normally distributed. Levene's test indicated no significant differences in variance between the two conditions ($F=0.07$, $p=0.80$). Therefore, a t-test was conducted. There were no significant differences in the number of "would do" responses

between the control ($M=24.00$, $SD=8.87$) and the courage ($M=23.46$, $SD=9.13$) conditions, $t(90)=0.28$, $p=0.78$, thus failing to provide evidence that the courage intervention increased the number of “would do” responses on the sorting task. Further, Cohen’s effect size value ($d=0.06$) suggested low practical significance.

Implicit behavioral proclivity

To examine differences in implicit behavioral proclivity between conditions (Hypothesis 2b), a 2 (response: yes versus no) x 2 (condition: control versus courage) ANOVA with response latency as the dependent variable was conducted. The main effect of response type was significant, $F(1,90)=27.40$, $p<0.001$. Across both conditions, participants were significantly faster to say “no” ($M=1888.90$, $SD=497.82$) than they were to say “yes” ($M=2093.18$, $SD=531.78$). There was no significant main effect of condition between the control ($M=1950.05$) and the courage ($M=2022.59$) conditions, $F(1,90)=0.51$, $p=0.48$, thus failing to find differences based on condition alone. The response by condition interaction was also not significant, $F(1,90)=0.81$, $p=0.37$. There was no evidence that the degree of discrepancy in response latency between “yes” and “no” varied depending on condition. Participants were faster to say “no” than “yes” in both the control ($M=2032.82$, $SD=426.87$ and $M=1867.28$, $SD=483.00$, respectively) and the courage ($M=2139.61$, $SD=600.15$ and $M=1905.57$, $SD=512.97$, respectively) conditions with no significant differences found in the magnitude of this difference between conditions. The interaction results can be seen in Figure 3.

Approach behavior

To examine differences in approach behavior (or courageous action) between the two conditions (Hypothesis 3), comparisons of each of the two behavioral approach scores between the conditions were conducted.

Number of steps completed

For the number of steps completed, the data from neither the control ($W(42)=0.85$, $p>0.001$) nor the courage ($W(54)=0.85$, $p>0.001$) conditions were normally distributed. Most participants (76% of the control condition and 85% of the courage condition, respectively) completed 5 or more steps of the exposure analogue, leading to a negatively skewed distribution in each condition. Because the data were non-normally distributed and were ordinal in nature, the nonparametric Mann-Whitney U-Test was conducted. The Mann-Whitney U Test indicated no significant differences between the control (mean rank=45.36) and the courage (mean rank=50.94) conditions, $U=1002$, $n_1 - n_2 = 12$, $p=0.30$, thus failing to provide evidence that those in the courage condition completed more steps in the exposure analogue.

A traditional t-test was also conducted. Levene's test indicated no significant differences in variance between the two conditions ($F=0.17$, $p=0.68$), so equal variances were assumed. There were no significant differences found in the number of steps completed between the control ($M=5.02$, $SD=1.33$) and the courage ($M=5.41$, $SD=1.70$) conditions, $t(94)=-1.24$, $p=0.22$, again failing to provide evidence that those in the courage condition completed more steps in the exposure analogue. However, Cohen's effect size value ($d=-0.26$) suggested a small to moderate practical significance of the difference.

Completion score

For total completion score, the data from neither the control ($W(42)=0.85$, $p>0.001$) nor the courage ($W(54)=0.87$, $p>0.001$) conditions were normally distributed. Similar to the results for steps completed, most participants (69% of the control condition and 80% of the courage condition, respectively), scored 10 or above on their completion score, leading to a negatively skewed distribution in each condition. Because the data were non-normally distributed and were ordinal in nature, the nonparametric Mann-Whitney U-Test was conducted. The Mann-Whitney U Test indicated no significant differences between the control (mean rank=44.93) and the courage (mean rank=51.28) conditions, $U=984$, $n_1 - n_2 = 12$, $p=0.249$, thus failing to provide evidence that those in the courage condition scored higher in the exposure analogue than did those in the control condition.

A traditional t-test was also conducted. Levene's test indicated no significant differences in variance between the two conditions ($F=0.11$, $p=0.74$), so equal variances were assumed. There were no significant differences found in the completion score between the control ($M=9.81$, $SD=3.52$) and the courage ($M=10.65$, $SD=2.82$) conditions, $t(94)=-1.30$, $p=0.20$, again failing to provide evidence that those in the courage condition scored higher in the exposure analogue. However, Cohen's effect size value ($d=-0.27$) suggested a small to moderate practical significance of the difference.

Mediation of behavioral proclivity on the relationship between the intervention and approach behavior

To examine whether or not the effect of the courage intervention in promoting approach behavior (or courageous action) was partially mediated by increases in behavioral proclivity, a mediation analysis was conducted using MPlus (Muthén & Muthén, 2017). Following the

product of coefficients method proposed by MacKinnon et al. (2002), the direct paths between the condition and behavioral proclivity, between behavioral proclivity and approach behavior, and between condition and approach behavior were calculated as well as the indirect path between condition and approach behavior. There was no evidence to support the hypotheses that the relationship between condition and approach behavior was mediated by behavioral proclivity. As Figure 4 illustrates, the standardized regression coefficient between condition and behavioral proclivity was not statistically significant, nor was the standardized regression coefficient between condition and approach behavior. However, the standardized regression coefficient between behavioral proclivity and approach behavior was statistically significant, suggesting that increases in behavioral proclivity were associated with increases in approach behavior. The standardized indirect effect was $(-0.04)(0.36) = 0.01$. The significance of this indirect effect was tested using bootstrapping procedures. Unstandardized indirect effects were computed for each of 10,000 bootstrapped samples and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. The bootstrapped unstandardized indirect effect was -0.08, and the 95% confidence interval ranged from -0.53 to 0.44 (including a value of zero), indicating that the indirect effect was not statistically significant.

Feelings of fear, self-efficacy, and courage

Feelings of fear

To examine the effects of the intervention on experienced fear (Hypothesis 5), a comparison of the self-reported fear ratings between groups was conducted. Fear scores reported across all steps of the exposure analogue, including steps that were not completed and received hypothetical ratings, were averaged to compute a summary score. The data from the control

condition was not normally distributed, $W(42)=0.94$, $p=0.03$, but the data from the courage condition was normally distributed, $W(54)=0.85$, $p=0.13$. Levene's test indicated no significant differences in variance between the two conditions ($F=0.18$, $p=0.67$). Because one group was normally distributed and there were no significant differences, a t-test was conducted first and a Mann-Whitney U Test was conducted as a follow up. The t-test indicated no significant no significant differences in the average fear rating between the control ($M=46.76$, $SD=20.68$) and the courage ($M=47.99$, $SD=20.21$) conditions, $t(94)=-0.29$, $p=0.77$, thus failing to provide evidence that experienced fear was different between the two groups. Further, Cohen's effect size value ($d=-0.06$) suggested low practical significance.

Similarly, the Mann-Whitney U Test indicated no significant differences between the control (mean rank=47.02) and the courage (mean rank=49.65) conditions, $U=1072$, $n_1 - n_2 = 12$, $p=0.65$. Both tests failed to reveal a significant effect of condition on reported fear scores.

Mediation of fear on the relationship between the intervention and approach behavior

Hypothesis 6 was that the relationship between the intervention and approach behavior would *remain* after partialing the reported fear scores to demonstrate that the intervention has effects on behavior above and beyond any effects (or, in this case, lack thereof) on fear. However, because there was no evidence found for a relationship between the intervention and approach behavior, a mediation analysis was instead conducted to examine whether a relationship between the intervention and approach behavior *existed* after partialing the reported fear scores. Since the intervention was proposed to have effects on behavior rather than fear, the relationship between these variables with fear partialled out was examined.

Following the product of coefficients method proposed by MacKinnon et al. (2002), the direct paths between the condition and reported fear, between reported fear and approach behavior, and between condition and approach behavior were calculated as well as the indirect path between condition and approach behavior. Consistent with the results above, there was no evidence to support the relationship between condition and reported fear and no evidence of mediation. As Figure 5 illustrates, the standardized regression coefficient between condition and reported fear was not statistically significant, and the standardized indirect effect was only $(0.03)(-0.66) = 0.02$. The significance of this indirect effect was tested using bootstrapping procedures. Unstandardized indirect effects were computed for each of 10,000 bootstrapped samples and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. The bootstrapped unstandardized indirect effect was -0.13, and the 95% confidence interval ranged from -0.95 to 0.74 (including a value of zero), indicating that the indirect effect was not statistically significant.

The standardized regression coefficient between reported fear and approach behavior was statistically significant, suggesting (perhaps unsurprisingly) that decreases in reported fear were associated with increases in approach behavior. Furthermore, when partialing reported fear, the standardized regression coefficient between condition and approach behavior was significant ($p=0.04$). When fear levels were statistically equated, the two conditions differed in their approach behavior, with those in the courage condition scoring significantly higher in the exposure analogue than those in the control condition. When partialing the amount of fear that participants experienced during the exposure analogue, the intervention did have a significant impact on approach behavior.

Self-efficacy

To examine the effects of the intervention on experienced self-efficacy (Hypothesis 7), a comparison of self-rated confidence between the two conditions was conducted. Confidence scores reported across all steps of the exposure analogue, including steps that were not completed and received hypothetical ratings, were averaged to compute a summary score. The data from neither the control ($W(42)=0.94$, $p=0.03$) nor the courage ($W(54)=0.94$, $p=0.01$) conditions were normally distributed. Because the data were non-normally distributed, the nonparametric Mann-Whitney U-Test was conducted. The Mann-Whitney U Test indicated no significant differences between the control (mean rank=48.79) and the courage (mean rank=48.28) conditions, $U=1122$, $n_1 - n_2 = 12$, $p=0.93$, thus failing to provide evidence that those in the courage condition experienced greater self-efficacy during the task.

A traditional t-test was also conducted. Levene's test indicated no significant differences in variance between the two conditions ($F=0.01$, $p=0.94$), so equal variances were assumed. There were no significant differences found in experienced self-efficacy between the control ($M=67.29$, $SD=22.88$) and the courage ($M=67.64$, $SD=20.75$) conditions, $t(94)=-0.08$, $p=0.93$, again failing to provide evidence that those in the courage condition experienced greater self-efficacy. Further, Cohen's effect size value ($d=-0.02$) suggested low practical significance.

Courage

In order to test whether individuals who engaged in the courage intervention reported more courage following all behavioral tasks (Hypothesis 8), a comparison of the courage scores between conditions was conducted. The data from both the control ($W(42)=0.99$, $p=0.84$) and the courage ($W(54)=0.97$, $p=0.15$) conditions were normally distributed. Levene's test indicated no

significant differences in variance between the two conditions ($F=0.10$, $p=0.75$). Therefore, a t-test was conducted. There were no significant differences in the number of “would do” responses between the control ($M=3.83$, $SD=0.77$) and the courage ($M=4.04$, $SD=0.75$) conditions, $t(94)=-1.33$, $p=0.18$, thus failing to provide evidence that the courage intervention increased self-reported courage. However, Cohen’s effect size value ($d=-0.27$) suggested a small to moderate practical significance.

Perception of exposure analogue

To examine whether the courage intervention leads to changes in how the exposure analogue is perceived (Hypothesis 9), a comparison of the ratings of each of the BTRS items between the two conditions was conducted. The data for each of the 8 items, with the exception of item 6, were normally distributed. Similarly, Levene’s test indicated no significant differences in variance between the two conditions for any of the items. Therefore, a t-test was conducted for each of the items. There were no significant differences found between the conditions for any of the 8 items (see Table 1), thus failing to provide evidence that those in the courage condition perceived the task as less negative or more positive.

Willingness for future exposure

To examine whether the courage intervention leads to willingness to engage in future exposure (Hypothesis 10), a comparison of the willingness scores between the two conditions was conducted. The data from the control condition was normally distributed, $W(42)=0.97$, $p=0.24$, but the data from the courage condition was not normally distributed, $W(54)=0.94$, $p=0.02$. Levene’s test indicated no significant differences in variance between the two conditions ($F=3.31$, $p=0.07$), but the p-value approached conventional levels of significance. Because one

group was normally distributed and the differences in variance approached significance, a t-test was conducted first and a Mann-Whitney U Test was conducted as a follow up. The t-test indicated no significant differences between the control ($M=63.74$, $SD=23.02$) and the courage ($M=69.76$, $SD=18.23$) conditions, $t=-1.43$, $p=0.16$. Similarly, the Mann-Whitney U test indicated no significant difference between the two conditions, $U=964$, $n_1 = n_2 = 12$, $p=0.21$. There was no evidence to support the hypothesis that those in the courage condition were more willing to engage in exposure in the future. However, Cohen's effect size value ($d=-0.29$) suggested a small to moderate practical significance.

Discussion

This study was designed to test the ability of a brief courage intervention to increase engagement in an exposure task at the level of perception, behavioral proclivity, approach behavior, and intentions of future behavior. Participants were asked to recall a time when they faced their fear of spiders and thereby tell a narrative of courageous action. I found that the courage intervention was indeed effective in producing narratives characterized by greater approach behavior and greater courage. My hope was to increase their belief that they could behave courageously *and* their actual behavior. In the past, I have demonstrated the effects of a courage intervention on participants' mindset, or their belief that they *could* behave courageously. In this study, for the first time, I demonstrated the effects of the intervention on courageous behavior itself. When including reported fear as a covariate, individuals in the courage condition scored significantly higher in the exposure analogue than those in the control condition, indicating that the intervention led to increases in approach behavior when adjusting for the degree of fear experienced during the exposure analogue. Participants in the courage

condition truly embodied our definition of courage, “perseverance despite fear” (Rachman, 1978, pg. 234). When statistically equating all participants on their levels of fear, my “courage” participants were able to progress significantly farther toward facing their fears.

This finding, combined with the small to moderate effect sizes found for several outcomes (including the unadjusted number of steps completed in the exposure analogue, the unadjusted completion score on the exposure analogue, the courage measure, and the willingness for future exposure therapy), suggests a promising start to this line of research. However, the effect on approach behavior when partialing fear was small, and the other outcomes with small-to-moderate effect sizes were not significant. The experiment also did not find significant differences in participant’s responses to the sorting task, on their feelings of self-efficacy, or on their perceptions of the exposure task. Though the results encourage optimism, the research could benefit from further strengthening the design and the intervention itself to produce more robust results in the future.

Limitations

The impact of COVID-19

There was, of course, one major limitation that was beyond my control. Given that this study was conducted in 2020, the interference of the global COVID-19 pandemic meant that data collection was halted in early March rather than in June. Therefore, the final participant count fell short of the desired sample size. With the recruiting methods I used, I expected a sample size of at least 200 individuals – in the end, the study recruited only 96 participants. The nonsignificant small-to-moderate effects fell in the range of $d=0.26-0.29$. According to power estimates conducted using the pwr package (Champely, 2018) in R (R Core Team, 2017), a

sample size of at least 375 individuals would have been needed to reach statistical significance for these effects. This is consistent with the fact that a prior proof-of-concept study (Kramer & Zinbarg, 2019) had a sample size of 365 and was able to detect effects on participant's responses to the sorting task and intentions of future behavior. While the experiment likely would have been underpowered regardless of the COVID-19 pandemic, the sample would not have been nearly one fourth of the needed size if not for the abrupt stop to data collection due to the pandemic. Future studies of this intervention will benefit from far larger samples.

Considerations in study design

While an increased sample size would be advantageous, it is important to acknowledge that the effects I found in this study, significant and nonsignificant, were small. To bolster the findings of future studies in this line of research, it would be beneficial to consider ways to increase the strength of the study design and, thereby, the strength of the findings.

Considering the role of fear. In looking at our definition of courage as “perseverance despite fear” (Rachman, 1978, pg. 234), fear is central to courageous behavior. However, in my design, I only directly measured fear in one section of the study to test one hypothesis. Therefore, I could only account for the impact of fear in that single test. Given the success of that test and how the presence of fear is necessary for courageous action, it was a limitation of this study to not include fear as a covariate in my primary analyses. In future studies, I will prioritize the measurement of fear in order to include fear as a covariate for all study outcomes. This should strengthen the results, and, more importantly, better represent our definition of courage in my findings.

Increasing emphasis on courage. I was very careful in this intervention to not use the word “courage.” Though the interviewers did thoroughly probe for memories of courage as we define it, at no point was the participant told that these instances were considered “courageous.” This was done to avoid potential demand characteristics and having participants try harder to be “courageous” because the experimenter suggested it. I certainly found no effect of demand effects, but potentially at the cost of finding stronger effects overall. When we have used this intervention in our clinical work, we often (if not always) refer to these actions and the individuals performing them as courageous. Anecdotally, we find this to be a positive experience. It may be that highlighting the courage demonstrated by the participants and plainly referring to it as courage may have provided more of a positive boost. It would have clearly identified these actions as acts of courage and prompted participants to identify them as such (and perhaps themselves as courageous). This clear link between the past courage demonstrated in facing one’s fears and the current courage need to face one’s fears may have had a more significant impact.

Further distinguishing intervention and control. I may have also made my control and my intervention conditions too similar. In order to establish the “active ingredient” of this intervention, the emphasis on courage, I created a control that included all elements of good therapeutic practice *besides* the emphasis on courage. This may have been a misstep. Research has demonstrated time and time again that the “common elements” of therapy, such as therapeutic alliance, empathy, collaboration, positive regard and affirmation, and genuineness (see Frank & Frank, 1991), have a large impact on therapy effectiveness (Messer & Wampold, 2002). Both the intervention and the control provided participants with these “common

elements” – in both conditions, participants were met with empathy for their thoughts, feelings, and behaviors, collaborated with the interviewer to find and elaborate on a memory, and received positive regard and affirmation for their experiences. Therefore, it may be that simply talking about these experiences and receiving these common therapeutic elements had an impact in both groups and thus overwhelmed the additional effect the active elements of the courage intervention may have had. In the future, comparing the courage intervention against a more neutral control (such as treatment-as-usual) could demonstrate a greater advantage of using the courage intervention.

Intervention strength

In addition to strengthening the study design, it would also be beneficial to consider ways to increase the strength of the intervention itself. My results were promising, but small – increasing the power of the intervention could strengthen these findings in future studies.

Increasing dosage. Increasing the strength of the intervention may be a simple issue of increasing the dosage, either in terms of duration or in number of administrations. In terms of duration, the sessions could be longer. While most conversations did reach a natural end by 10 minutes, further elaboration on points within the interview, especially about participant’s strengths and resources, may have prolonged the discussion and led to a stronger initial “dose” of the intervention. In a standard therapy session, a therapist would have up to 50 minutes to deliver a single intervention – this intervention might benefit from a similarly large administration time.

The intervention could also be delivered in multiple doses rather than just one. In the model of courage provided by Hannah, Sweeney, & Lester (2007), the promotion of courage is posed as an iterative process. People start with igniting courage and engaging in one courageous

action, which then becomes fuel for igniting future courage and courageous actions. Though one brief administration of the courage intervention produced small effects, repeating an intervention like this over time (and building on the first courageous exposure session) could lead to increased engagement in a full course of exposure sessions and in exposure therapy overall. Either by increasing the duration of the intervention or administering it several times over the course of therapy, the courage intervention could benefit from a stronger dose to produce stronger results.

Writing versus speaking in the intervention. My prior proof-of-concept study found a significant effect of a writing-based courage intervention on behavioral proclivity (at both an implicit and an explicit level) and on intentions of courageous behavior. Those effects were not found in this study, despite past replications. Therefore, there is a possibility that the writing intervention was stronger than the speaking intervention, despite my contrary hypothesis. At the time of the initial studies, I justified the choice of a writing intervention primarily because writing may possess unique benefits in boosting certain aspects of psychological well-being when recalling positive memories. Lyubomirsky, Sousa, and Dickerhoof (2006) found that mentally replaying a positive memory while writing it down (as opposed to talking about it) resulted in significantly higher ratings of environmental mastery, or the sense that one is able to influence the events in their own lives. This feeling of mastery is associated with self-efficacy. Considering the explicit aim in this study to increase self-efficacy to convince individuals that they are capable of facing their fears, the potential boost provided by writing (versus speaking) may have been significant. There may be a fundamental benefit to writing about courageous events that I missed out on in this speaking version of the intervention.

Testing in a non-clinical sample

This intervention might also pack a stronger punch if it were tested in a treatment-seeking clinical sample. My sample was made up of students seeking college credit for their psychology class, not individuals seeking treatment of their fear of spiders. Therefore, the motivation in the study was not to reduce one's fears – it was to get the credit. If participants had been treatment-seeking and knew that facing their fears was their ultimate goal, then the introduction of the courage intervention may have made a bigger impact. It may have given additional strength to the participant to allow them to behave courageously, given that they *already* wanted to do so. However, my participants were less enthusiastic about facing their fears. From a motivational interviewing perspective, Miller & Rollnick (2013) might describe this as skipping stages – I tried to help participants in the action of facing their fears when they had not progressed through contemplating (or even pre-contemplating) if they *wanted* to face those fears. Therefore, I might see a stronger impact of this interaction for individuals who are already ready to face their fears and need a boost to do so, such as in a treatment-seeking sample.

Future Directions

Research in treatment-seeking samples

There are several avenues this research could take from here. First and foremost, I want to more fully examine a stronger version of this intervention in a treatment-seeking clinical sample. I want to work with patients who are fully motivated to treat their anxiety and avoidance to give this intervention the biggest opportunity for impact. Ideally, I would like to compare the addition of this intervention as a longer introduction to exposure therapy and/or as an additional written homework component to treatment-as-usual to see if it adds to the success of exposure

therapy. Then, I could examine if a longer intervention (such a half or full session session of therapy) has a bigger impact, or if repeating the intervention across multiple sessions (such as a part of therapy homework) has a bigger impact. I want to see if patients not only *do* better in exposure (such as by completing more of their hierarchy or terminating faster), but if they *feel* better while doing it as well. If patients feel better, they should be more likely to engage and see benefit. And if patients feel better, I imagine their therapists will feel better as well.

Focus on therapist experience

That said, this research could be expanded to focus on the experience of the therapists as well. Though there is some evidence that patients avoid and/or drop out of exposure treatment (i.e. Issakidis & Andrews, 2004; Kehle-Forbes et al., 2016; Wolitzky-Taylor et al., 2015), there is far more evidence to suggest that *therapists* don't use (i.e. Becker et al., 2004; Chu et al., 2015; Whiteside et al. 2016; Wolitzky-Taylor et al., 2015) and don't like exposure therapy (i.e. Becker et al., 2004; Becker-Haimes et al., 2017; Feeny et al., 2003; Richard & Gloster, 2007). Therefore, the biggest barrier in getting highly effective exposure therapy to individuals that need may lie in therapists' perceptions of exposure therapy, not the patients'. If introducing exposure in this positive, empowering way makes *therapists* perceive exposure less aversively and deliver it more readily, then that would be a great success.

Therefore, perhaps most promising (and most personally exciting) future direction for this research is the idea to examine the effect of this intervention on therapists' perceptions of and delivery of exposure therapy. Though I have no quantitative data on it, my experience delivering this intervention was overwhelmingly positive. Participants endorsed a wide variety of their own positive personality traits, with some of the most popular descriptors being

“determined,” “proactive,” “independent,” and “protective.” They also came to lovely conclusions about themselves: some of my favorites include the idea that “I can confront what I am scared of,” “I’m a strong person,” “I won’t let fear...interfere with my life,” and “I choose to find the beauty in things, even when challenging.” They also described a lot of positive emotions resulting from their actions: 51% of the participants reported feeling “relief,” and 41% reported feeling “pride” or “accomplishment.” The courage intervention *felt* more rewarding from the interviewer perspective: therefore, I am very curious to gather data on whether or not using this intervention changes how *therapists* feel about starting exposure therapy. I hope that this intervention would make it easier for therapists to start exposure therapy, knowing that it is gentle and empowering rather than aversive or harmful, and make it more likely that they adopt exposure-based treatments with their patients. In a future study, I would love to examine the effects of this intervention on enhancing therapist’s perception of exposure and, ultimately, their rates of delivering exposure therapy to their anxious clients.

Conclusions

Ultimately, this study did find support for my courage intervention increasing courageous behavior by our definition – “perseverance despite fear” (Rachman, 1978, pg. 234). After partialing reported fear, individuals who underwent the courage intervention demonstrated greater approach behavior on their in-session exposure analogue, indicating that the intervention had a significant impact when fear levels were statistically equated. Furthermore, several of my results produced promising small-to-moderate effects, despite being statistically nonsignificant. However, the effect I did find was small, and my other results were not significant. While these results are not quite the overwhelming support I had hoped to find, they are still exciting.

Because behavior, especially in the face of fear, is difficult to influence, even this small effect might be considered “impressive” (Prentice & Miller, 1992). Ultimately, these results suggest promise for this line of research. By strengthening the intervention and the study design, I am optimistic that future studies will be more fruitful and produce stronger support for a courage intervention. Furthermore, there might be a future to this research not only for anxious clients, but also for the clinicians that treat them. I have every confidence that courage is critical when it comes to exposure therapy, and I look forward to demonstrating that.

Tables and Figures

Figure 1: T-test results for approach scores in the narratives between conditions

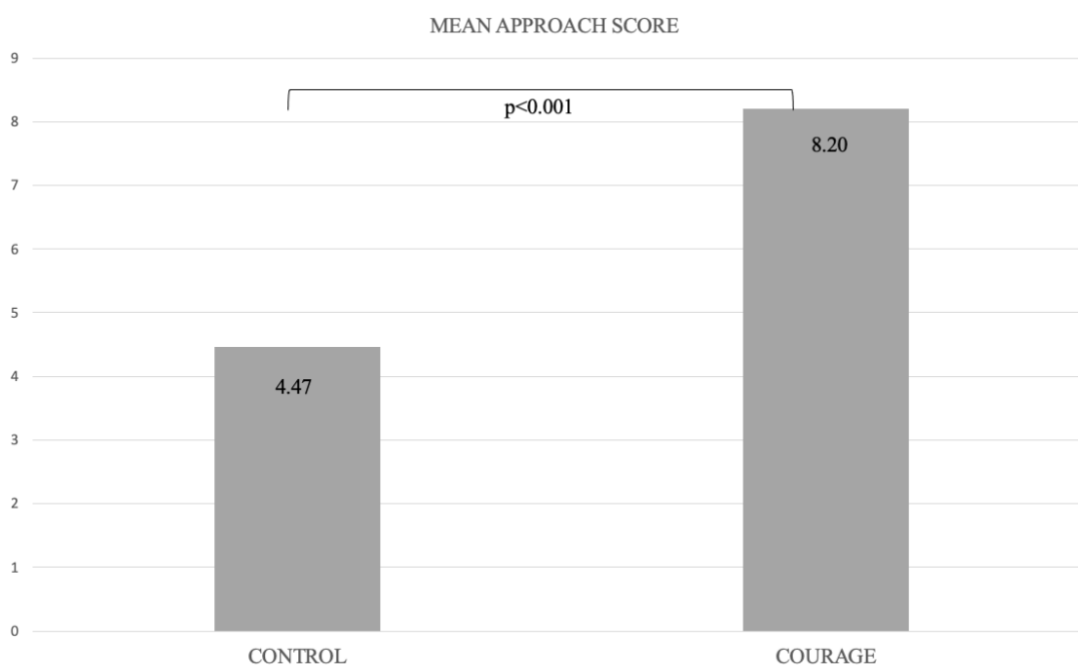


Figure 2: T test results for courage scores in the narratives between conditions

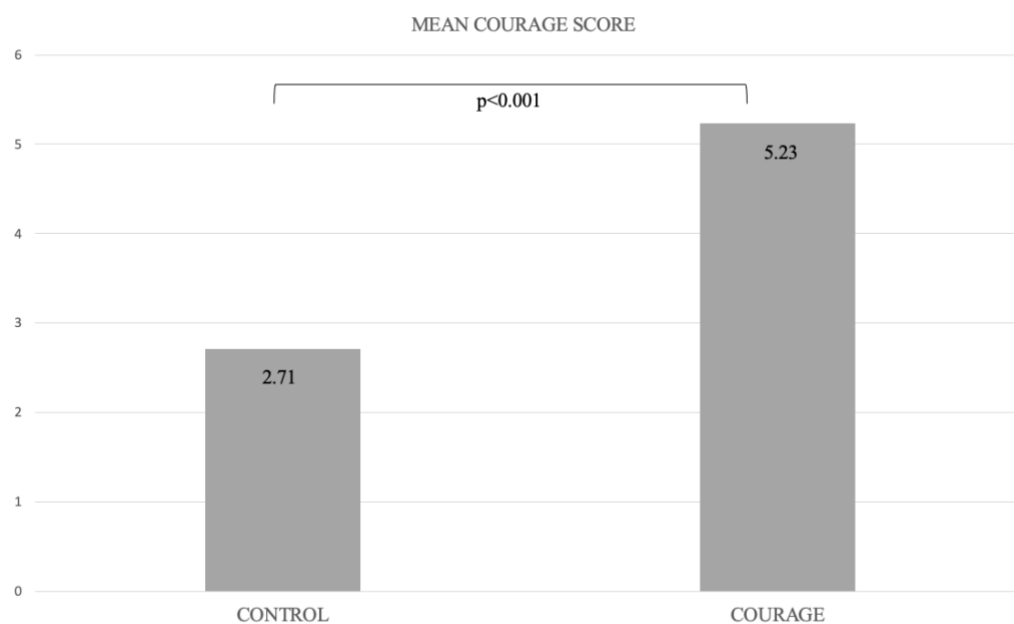


Figure 3: Results of the 2-way ANOVA (condition x response type on response latency)

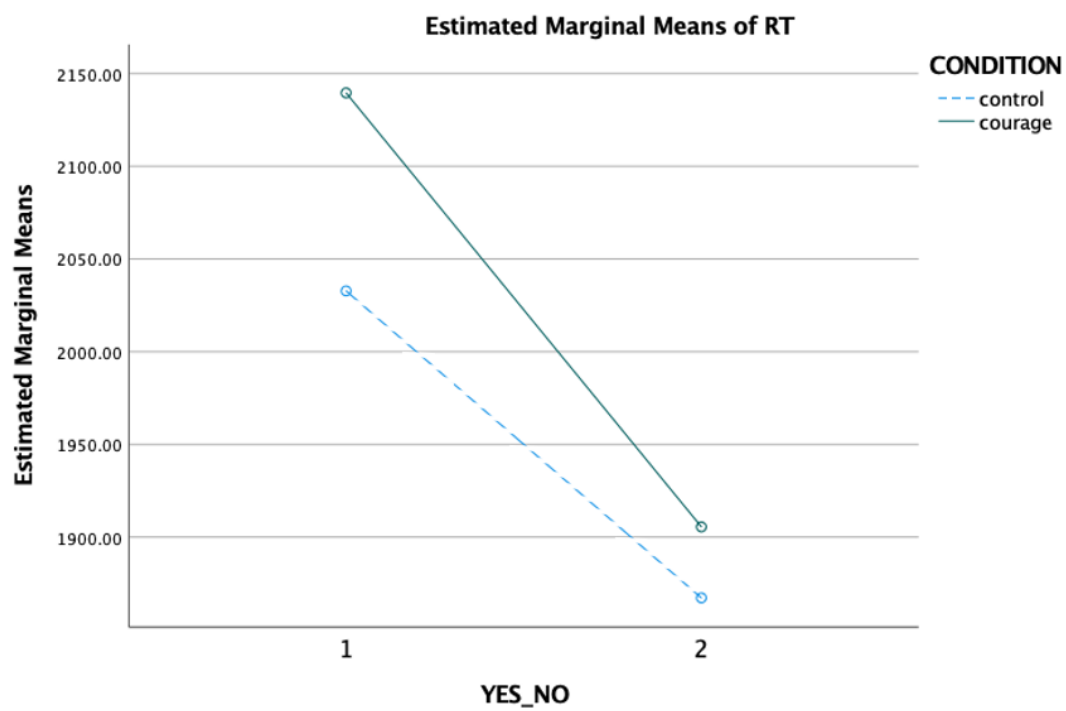


Figure 4: Mediation of behavioral proclivity on the relationship between condition and approach behavior

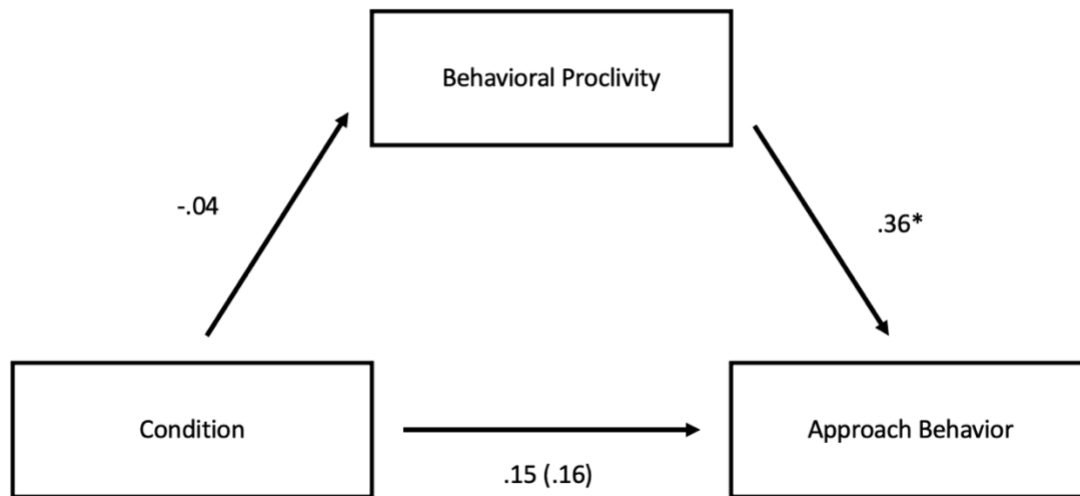


Figure 5: Mediation of reported fear on the relationship between condition and approach behavior

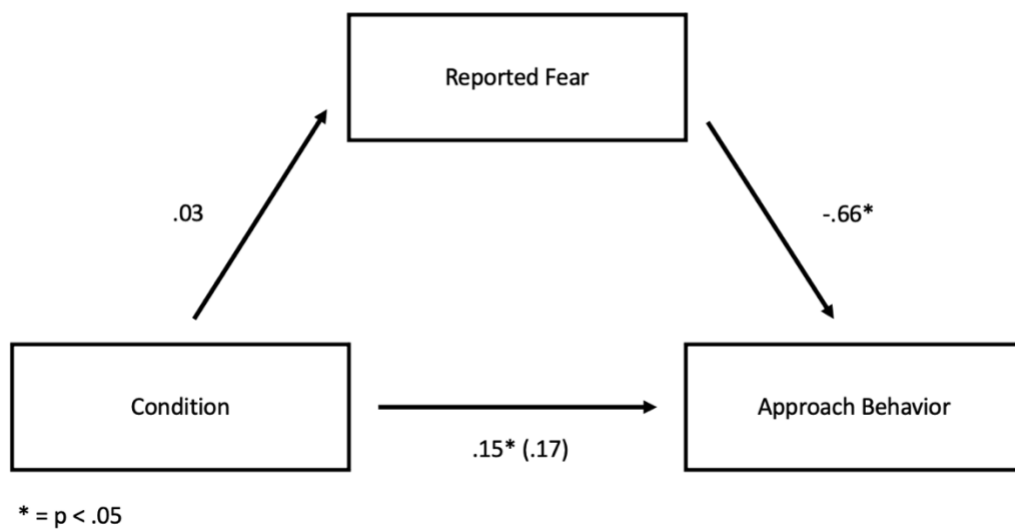


Table 1: Results of BTRS item t-tests

BTRS Item	Mean (control)	Mean (courage)	t	p	d
1 (afraid)	7.64	7.91	0.47	0.64	-0.10
2 (run away)	4.83	5.30	0.70	0.49	-0.14
3 (heart pound)	7.00	7.46	0.70	0.48	-0.15
4 (in danger)	4.02	4.91	1.50	0.14	-0.31
5 (confident)	5.48	4.85	-1.17	0.25	0.24
6 (facing fears)	6.10	6.24	0.28	0.78	-0.06
7 (energized)	5.40	5.61	0.36	0.72	-0.07
8 (capable)	5.64	5.74	0.19	0.85	-0.04

References

- Abramowitz, J. S. (1996). Variants of exposure and response prevention in the treatment of obsessive-compulsive disorder: A meta-analysis. *Behavior Therapy*, 27(4), 583-600.
- Adams, T. G., Brady, R. E., Lohr, J. M., & Jacobs, W. J. (2015). A meta-analysis of CBT components for anxiety disorders. *The Behavior Therapist*.
- American Psychiatric Association (2004). *Practice guidelines for the treatment of patients with acute stress disorder and posttraumatic stress disorder*. Washington, DC: Author.
- American Psychiatric Association (2007). *Practice guideline for the treatment of patients with obsessive-compulsive disorder* (2nd ed.). Washington, DC: Author.
- American Psychiatric Association (2009). *Practice guideline for the treatment of patients with panic disorder* (2nd ed.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.
- Asgharipoor, N., Farid, A. A., Arshadi, H., & Sahebi, A. (2012). A comparative study on the effectiveness of positive psychotherapy and group cognitive-behavioral therapy for the patients suffering from major depressive disorder. *Iranian Journal of Psychiatry and Behavioral Sciences*, 6(2), 33.
- Bados, A., Balaguer, G., & Saldaña, C. (2007). The efficacy of cognitive-behavioral therapy and the problem of drop-out. *Journal of Clinical Psychology*, 63(6), 585-592.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

- Bandura, A., & Adams, N. E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive Therapy and Research*, 1(4), 287-310.
- Bandura, A., Adams, N. E., Hardy, A. B., & Howells, G. N. (1980). Tests of the generality of self-efficacy theory. *Cognitive therapy and research*, 4(1), 39-66.
- Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of applied psychology*, 88(1), 87.
- Barlow, D. H. (2004). Psychological treatments. *American Psychologist*, 59(9), 869.
- Barlow, D. H., Gorman, J. M., Shear, M. K., & Woods, S. W. (2000). Cognitive-behavioral therapy, imipramine, or their combination for panic disorder: A randomized controlled trial. *Journal of the American Medical Association*, 283(19), 2529-2536.
- Becker, C. B., Zayfert, C., & Anderson, E. (2004). A survey of psychologists' attitudes towards and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy*, 42(3), 277-292.
- Becker-Haimes, E. M., Okamura, K. H., Wolk, C. B., Rubin, R., Evans, A. C., & Beidas, R. S. (2017). Predictors of clinician use of exposure therapy in community mental health settings. *Journal of Anxiety Disorders*, 49, 88-94.
- Berking, M., Grosse Holtforth, M., & Jacobi, C. (2003). Reduction of incongruence in inpatient psychotherapy. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, 10(2), 86-92.
- Bouchard, S., Gauthier, J., Nouwen, A., Ivers, H., Vallières, A., Simard, S., & Fournier, T. (2007). Temporal relationship between dysfunctional beliefs, self-efficacy and panic

- apprehension in the treatment of panic disorder with agoraphobia. *Journal of Behavior Therapy and Experimental Psychiatry*, 38(3), 275-292.
- Carey, T. A. (2011). Exposure and reorganization: The what and how of effective psychotherapy. *Clinical Psychology Review*, 31(2), 236-248.
- Stephane Champely (2018). *pwr: Basic Functions for Power Analysis*. R package version 1.2-2. <https://CRAN.R-project.org/package=pwr>
- Chu, B. C., Talbott Crocco, S., Arnold, C. C., Brown, R., Southam-Gerow, M. A., & Weisz, J. R. (2015). Sustained implementation of cognitive-behavioral therapy for youth anxiety and depression: Long-term effects of structured training and consultation on therapist practice in the field. *Professional Psychology: Research and Practice*, 46(1), 70.
- Conoley, C. W., Padula, M. A., Payton, D. S., & Daniels, J. A. (1994). Predictors of client implementation of counselor recommendations: Match with problem, difficulty level, and building on client strengths. *Journal of Counseling Psychology*, 41(1), 3.
- Corcoran, J., & Pillai, V. (2009). A review of the research on solution-focused therapy. *British Journal of Social Work*, 39(2), 234-242.
- Corr, P. J. (2001). Testing problems in J. A. Gray's personality theory: a commentary on Matthews and Gilliland (1999). *Personality and Individual Differences*, 30, 333-352.
- Corr, P. J. (2002). JA Gray's reinforcement sensitivity theory: Tests of the joint subsystems hypothesis of anxiety and impulsivity. *Personality and Individual Differences*, 33(4), 511-532.
- Corr, P. J. (2008). Reinforcement Sensitivity Theory (RST): Introduction. In P. J. Corr (Ed.), *The reinforcement sensitivity theory of personality* (p. 1-43). Cambridge University Press.

- Davey, G. C. (1991). Characteristics of individuals with fear of spiders. *Anxiety Research*, 4(4), 299-314.
- De Jong, P., & Kim Berg, I. (2002). *Interviewing for solutions*. (2nd ed). Pacific Grove, CA: Wadsworth.
- De Shazer, S. (1994). *Words were originally magic*. WW Norton & Co.
- Deacon, B. J., & Abramowitz, J. S. (2004). Cognitive and behavioral treatments for anxiety disorders: A review of meta-analytic findings. *Journal of Clinical Psychology*, 60(4), 429-441.
- Delsignore, A., Carraro, G., Mathier, F., Znoj, H., & Schnyder, U. (2008). Perceived responsibility for change as an outcome predictor in cognitive-behavioural group therapy. *British Journal of Clinical Psychology*, 47(3), 281-293.
- Dyck, T. (2000). Narrative therapy with individual adults.
- Eaton, W. W., Bienvenu, O. J., & Miloyan, B. (2018). Specific phobias. *The Lancet Psychiatry*, 5(8), 678-686.
- Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology*, 82(5), 804.
- Etchison, M., & Kleist, D. M. (2000). Review of narrative therapy: Research and utility. *The Family Journal*, 8(1), 61-66.
- Feeny, N. C., Hembree, E. A., & Zoellner, L. A. (2003). Myths regarding exposure therapy for PTSD. *Cognitive and Behavioral Practice*, 10(1), 85-90.

- Finkel, E. J. (2014). The I3 model: Metatheory, theory, and evidence. In *Advances in experimental social psychology* (Vol. 49, pp. 1-104). Academic Press.
- Fitzpatrick, M. R., & Stalikas, A. (2008). Positive emotions as generators of therapeutic change. *Journal of Psychotherapy Integration, 18*(2), 137.
- Flückiger, C., & Grosse Holtforth, M. (2008). Focusing the therapist's attention on the patient's strengths: A preliminary study to foster a mechanism of change in outpatient psychotherapy. *Journal of Clinical Psychology, 64*(7), 876-890.
- Foa, E. B., Rothbaum, B. O., Riggs, D. S., & Murdock, T. B. (1991). Treatment of posttraumatic stress disorder in rape victims: a comparison between cognitive-behavioral procedures and counseling. *Journal of Consulting and Clinical Psychology, 59*(5), 715.
- Franklin, M. E., Abramowitz, J. S., Kozak, M. J., Levitt, J. T., & Foa, E. B. (2000). Effectiveness of exposure and ritual prevention for obsessive-compulsive disorder: randomized compared with nonrandomized samples. *Journal of Consulting and Clinical Psychology, 68*(4), 594.
- Gaudiano, B. A., & Herbert, J. D. (2007). Self-efficacy for social situations in adolescents with generalized social anxiety disorder. *Behavioural and Cognitive Psychotherapy, 35*(2), 209-223.
- Goud, N. H. (2005). Courage: Its Nature and Development. *Journal of Humanistic Counseling, Education & Development, 44*(1), 102-116.
- Gould, R. A., Ott, M. W., & Pollack, M. H. (1995). A meta-analysis of treatment outcome for panic disorder. *Clinical Psychology Review, 15*(8), 819-844.

- Gray, J. A. (1990). Brain systems that mediate both emotion and cognition. *Cognition & Emotion*, 4(3), 269-288.
- Gray, J. A., & McNaughton, N. (2000). Fundamentals of the septo-hippocampal system. *The Neuropsychology of Anxiety: An Enquiry into the Functions of Septo-hippocampal System*, 2nd ed. Oxford University Press, Oxford, 204-232.
- Habermas, T., & Bluck, S. (2000). Getting a life: the emergence of the life story in adolescence. *Psychological Bulletin*, 126(5), 748.
- Hannah, S.T., Sweeney, P.J., & Lester, P.B. (2010). The courageous mind-set: A dynamic personality system approach to courage.
- Harmon-Jones, E., Amodio, D. M., & Harmon-Jones, C. (2009). Action-based model of dissonance: A review, integration, and expansion of conceptions of cognitive conflict. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology*, Vol. 41, (pp. 119–166). Burlington, MA: Academic Press.
- Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior therapy*, 35(4), 639-665.
- Hayes, S. C., & Hofmann, S. G. (2017). The third wave of cognitive behavioral therapy and the rise of process-based care. *World Psychiatry*, 16(3), 245.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. Guilford Press..
- Hernandez-Tejada, M. A., Acierno, R., & Sanchez-Carracedo, D. (2017). Addressing dropout from prolonged exposure: feasibility of involving peers during exposure trials. *Military Psychology*, 29(2), 157-163.

- Hipol, L. J., & Deacon, B. J. (2013). Dissemination of evidence-based practices for anxiety disorders in Wyoming: A survey of practicing psychotherapists. *Behavior Modification*, 37(2), 170-188.
- Hyde, J., Ryan, K. M., & Waters, A. M. (2019). Psychophysiological Markers of Fear and Anxiety. *Current Psychiatry Reports*, 21(7), 56.
- Issakidis, C., & Andrews, G. (2004). Pretreatment attrition and dropout in an outpatient clinic for anxiety disorders. *Acta Psychiatrica Scandinavica*, 109(6), 426-433.
- Izadpanah, S., Schumacher, M., Bähr, A., Stopsack, M., Grabe, H. J., & Barnow, S. (2016). A 5-year longitudinal study of the adolescent reinforcement sensitivity as a risk factor for anxiety symptoms in adulthood: Investigating the indirect effect of cognitive emotion regulation. *Personality and Individual Differences*, 95, 68-73.
- Jackson, D. C., Mueller, C. J., Dolski, I., Dalton, K. M., Nitschke, J. B., Urry, H. L., et al. (2003). Now you feel it, now you don't: Frontal brain electrical asymmetry and individual differences in emotion regulation. *Psychological Science*, 14(6), 612-617.
- Johnson, S. L., Turner, R. J., & Iwata, N. (2003). BIS/BAS levels and psychiatric disorder: An epidemiological study. *Journal of psychopathology and behavioral assessment*, 25(1), 25-36.
- Kanfer, F. H. (1992). Motivating clients in therapy: From the perspective of a self-regulation model. In Kuhl, J. & Heckhausen, H. *Motivation, volition and action: Encyclopedia of Psychology*, vol C/IV/4 (in German Translation). Reprinted (shortened version) in: *Verhaltensmodifikation und Verhaltensmedizin*, 13, 137-152.

- Kehle-Forbes, S. M., Meis, L. A., Spoont, M. R., & Polusny, M. A. (2016). Treatment initiation and dropout from prolonged exposure and cognitive processing therapy in a VA outpatient clinic. *Psychological Trauma: Theory, Research, Practice, and Policy*, 8(1), 107.
- Knyazev, G. G., & Wilson, G. D. (2004). The role of personality in the co-occurrence of emotional and conduct problems in adolescents: a confirmation of Corr's "joint subsystems" hypothesis. *Personality and Individual Differences*, 37(1), 43-63.
- Kramer, A., & Zinbarg, R. (2019). Recalling courage: An initial test of a brief writing intervention to activate a 'courageous mindset' and courageous behavior. *The Journal of Positive Psychology*, 14(4), 528-537.
- Kramer, A. & Zinbarg, R. Defining courage: "Competing" constructs of courage in the general population. Manuscript under review at *Journal of Positive Psychology*.
- Lee, C. (1984). Efficacy expectations and outcome expectations as predictors of performance in a snake-handling task. *Cognitive Therapy and Research*.
- Linehan, M. M. (2018). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Publications.
- Lopez, S. J., O'Byrne, K. K., & Petersen, S. (2003). Profiling courage. In S. J. Lopez & C. R. Snyder (Eds.), *Positive Psychological Assessment: A Handbook of Models and Measures* (pp. 185-197). Washington, DC, US: American Psychological Association.
- Lucas, R. E., Diener, E., Grob, A., Suh, E. M., & Shao, L. (2000). Cross-cultural evidence for the fundamental features of extraversion. *Journal of Personality and Social Psychology*, 79, 452-468.

- Lyubomirsky, S., Sousa, L., & Dickerhoof, R. (2006). The costs and benefits of writing, talking, and thinking about life's triumphs and defeats. *Journal of Personality and Social Psychology*, 90(4), 692.
- MacKinnon, D.P., Lockwood, C.M., Hoffman, J.M., West, S.G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7, 83-104.
- McGregor, I., Nash, K., Mann, N., & Phills, C. E. (2010). Anxious uncertainty and reactive approach-motivation (RAM). *Journal of Personality and Social Psychology*, 99(1), 133–147.
- Messer, S. B., & Wampold, B. E. (2002). Let's face facts: Common factors are more potent than specific therapy ingredients. *Clinical psychology: Science and Practice*, 9(1), 21-25.
- Meyer, A. (2016). Developing psychiatric biomarkers: A review focusing on the error-related negativity as a biomarker for anxiety. *Current Treatment Options in Psychiatry*, 3(4), 356-364.
- Mowrer, O. (1960). *Learning Theory and Behavior*. New York: Wiley.
- Muris, P., & Merckelbach, H. (1996). A comparison of two spider fear questionnaires. *Journal of Behavior Therapy and Experimental Psychiatry*, 27(3), 241-244.
- Muthén, B., & Muthén, L. (2017). *Mplus* (pp. 507-518). Chapman and Hall/CRC.
- Nash, K., Inzlicht, M., & McGregor, I. (2012). Approach-related left prefrontal EEG asymmetry predicts muted error-related negativity. *Biological Psychology*, 91(1), 96–102.

- Norton, P. J., & Weiss, B. J. (2009). The role of courage on behavioral approach in a fear-eliciting situation: A proof-of-concept pilot study. *Journal of Anxiety Disorders*, 23(2), 212-217.
- Olatunji, B. O., & Deacon, B. (2008). Specificity of disgust sensitivity in the prediction of fear and disgust responding to a brief spider exposure. *Journal of Anxiety Disorders*, 22(2), 328-336.
- Olatunji, B. O., Deacon, B. J., & Abramowitz, J. S. (2009). The cruelest cure? Ethical issues in the implementation of exposure-based treatments. *Cognitive and Behavioral Practice*, 16(2), 172-180.
- Olatunji, B. O., Lohr, J. M., Sawchuk, C. N., & Tolin, D. F. (2007). Multimodal assessment of disgust in contamination-related obsessive-compulsive disorder. *Behaviour Research and Therapy*, 45(2), 263-276.
- Öst, L.-G. (1996). Long-term effects of behavior therapy for specific phobia. In M. R. Mavissakalian & R. F. Prien (Eds.), *Long-term treatments of anxiety disorders* (pp. 121-170). Arlington, VA, US: American Psychiatric Association.
- Padesky, C. A., & Mooney, K. A. (2012). Strengths-based cognitive-behavioural therapy: A four-step model to build resilience. *Clinical Psychology & Psychotherapy*, 19(4), 283-290.
- Papachristou, H., Theodorou, M., Neophytou, K., & Panayiotou, G. (2018). Community sample evidence on the relations among behavioural inhibition system, anxiety sensitivity, experiential avoidance, and social anxiety in adolescents. *Journal of Contextual Behavioral Science*, 8, 36-43.

- Peterson, C., & Seligman, M. E. (2004). *Character strengths and virtues: A handbook and classification* (Vol. 1). Oxford University Press.
- Prentice, D. A., & Miller, D. T. (1992). When small effects are impressive. *Psychological Bulletin*, 112(1), 160.
- Pury, C. (2019, March). Courage comes in many forms: Applying courage typologies to therapy for anxiety and depression. Talk presented at the annual meeting of the Anxiety and Depression Association of American, Chicago, IL.
- Pury, C. L., Kowalski, R. M., & Spearman, J. (2007). Distinctions between general and personal courage. *The Journal of Positive Psychology*, 2(2), 99-114.
- Quick, E. K. (2013). *Solution focused anxiety management: A treatment and training manual*. Academic Press.
- R Core Team (2017). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.
- Rachman, S. J. (1978). *Fear and courage*. W. H. Freeman.
- Rapee, R. M., Gaston, J. E., & Abbott, M. J. (2009). Testing the efficacy of theoretically derived improvements in the treatment of social phobia. *Journal of Consulting and Clinical Psychology*, 77(2), 317.
- Rashid, T. (2015). Positive psychotherapy: A strength-based approach. *The Journal of Positive Psychology*, 10(1), 25-40.
- Rashid, T., & Ostermann, R. F. (2009). Strength-based assessment in clinical practice. *Journal of Clinical Psychology*, 65(5), 488-498.

- Ratcliff, R. (1993). Methods for dealing with reaction time outliers. *Psychological Bulletin*, 114(3), 510.
- Rate, Christopher & Clarke, Jennifer & Lindsay, Douglas & Sternberg, Robert. (2007). Implicit theories of courage. *The Journal of Positive Psychology*, 2, 80-98.
- Richard, D. C., & Gloster, A. T. (2007). Exposure therapy has a public relations problem: A dearth of litigation amid a wealth of concern. In *Handbook of Exposure Therapies* (pp. 409-425). Academic Press.
- Schmitt, W. J., & Müri, R. M. (2009). Neurobiologie der spinnenphobie. *Schweizer Archiv für Neurologie und Psychiatrie*, 160(8), 352-355.
- Scott, S. R. (2018). *The Perceived Benefits of Positive Psychology Interventions on Well-Being in Older Adults at a Continuing Care Residential Community*. Southern Connecticut State University.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. T. (2001). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse*. New York: The Guilford Press.
- Seligman, M. E., Rashid, T., & Parks, A. C. (2006). Positive psychotherapy. *American Psychologist*, 61(8), 774.
- Smillie, L. D., Cooper, A. J., Wilt, J., & Revelle, W. (2012). Do extraverts get more bang for the buck? Refining the affective-reactivity hypothesis of extraversion. *Journal of Personality and Social Psychology*, 103(2), 306.
- Smith, M. L., & Glass, G. V. (1977). Meta-analysis of psychotherapy outcome studies. *American Psychologist*, 32(9), 752.

- Stewart, R. E., & Chambless, D. L. (2009). Cognitive-behavioral therapy for adult anxiety disorders in clinical practice: A meta-analysis of effectiveness studies. *Journal of Consulting and Clinical Psychology*, 77(4), 595.
- Struijs, S. Y., Lamers, F., Rinck, M., Roelofs, K., Spinhoven, P., & Penninx, B. W. (2018). The predictive value of Approach and Avoidance tendencies on the onset and course of depression and anxiety disorders. *Depression and Anxiety*, 35(6), 551-559.
- Szymanski, J., & O'Donohue, W. (1995). Fear of spiders questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry*, 26(1), 31-34.
- Taylor, S., Thordarson, D. S., Maxfield, L., Fedoroff, I. C., Lovell, K., & Ogrodniczuk, J. (2003). Comparative efficacy, speed, and adverse effects of three PTSD treatments: exposure therapy, EMDR, and relaxation training. *Journal of Consulting and Clinical Psychology*, 71(2), 330.
- Telch, M. J., Agras, W. S., Taylor, C. B., Roth, W. T., & Gallen, C. C. (1983). Behavioral and pharmacological approaches to the treatment of agoraphobia: A controlled trial. *Manuscript submitted for publication*.
- Turner, S. M., Beidel, D. C., & Wolff, P. L. (1996). Is behavioral inhibition related to the anxiety disorders? *Clinical Psychology Review*, 16(2), 157-172.
- Vorstenbosch, V. (2009). The role of disgust and fear of contamination in responses to pictorial versus live stimuli. Unpublished doctoral dissertation. Ryerson University, Toronto, Ontario, Canada.
- Wells, A. (2000). *Emotional Disorders and Metacognition: Innovative Cognitive Therapy*. Chichester. United Kingdom: Wiley.

- Williams, S. L., Doseman, G., & Kleifield, E. (1984). Comparative effectiveness of guided mastery and exposure treatments for intractable phobias. *Journal of Consulting and Clinical Psychology*, 52(4), 505.
- Williams, S. L., & Telch, M. J. (1984). Self-appraisal determinants of defensive behavior and emotional arousal. Unpublished manuscript, Lehigh University.
- Williams, S. L., & Watson, N. (1985). Perceived danger and perceived self-efficacy as cognitive determinants of acrophobic behavior. *Behavior Therapy*, 16(2), 136–146.
- White, M., Wijaya, M., White, M. K., & Epston, D. (1990). *Narrative means to therapeutic ends*. WW Norton & Company.
- Whiteside, S. P., Deacon, B. J., Benito, K., & Stewart, E. (2016). Factors associated with practitioners' use of exposure therapy for childhood anxiety disorders. *Journal of Anxiety Disorders*, 40, 29-36.
- Wolitzky-Taylor, K., Zimmermann, M., Arch, J. J., De Guzman, E., & Lagomasino, I. (2015). Has evidence-based psychosocial treatment for anxiety disorders permeated usual care in community mental health settings? *Behaviour Research and Therapy*, 72, 9-17.
- Wolitzky-Taylor, K., Fenwick, K., Lengnick-Hall, R., Grossman, J., Bearman, S. K., Arch, J., ... & Chung, B. (2018). A preliminary exploration of the barriers to delivering (and receiving) exposure-based cognitive behavioral therapy for anxiety disorders in adult community mental health settings. *Community Mental Health Journal*, 54(7), 899-911.
- Wollburg, E., & Braukhaus, C. (2010). Goal setting in psychotherapy: The relevance of approach and avoidance goals for treatment outcome. *Psychotherapy Research*, 20(4), 488-494.

- Zinbarg, R. E., Lee, J. E., & Yoon, K. L. (2007). Dyadic predictors of outcome in a cognitive-behavioral program for patients with generalized anxiety disorder in committed relationships: A “spoonful of sugar” and a dose of non-hostile criticism may help. *Behaviour Research and Therapy*, 45(4), 699-713.
- Zinbarg, R. E., Mineka, S., Bobova, L., Craske, M. G., Vrshek-Schallhorn, S., Griffith, J. W., ... & Anand, D. (2016). Testing a hierarchical model of neuroticism and its cognitive facets: latent structure and prospective prediction of first onsets of anxiety and unipolar mood disorders during 3 years in late adolescence. *Clinical Psychological Science*, 4(5), 805-824.

Appendices

Appendix A: Rating scales for ratings of approach, fear, and courage in interviews

Approach behavior – rated at the end (1 rating total)

Anchors:

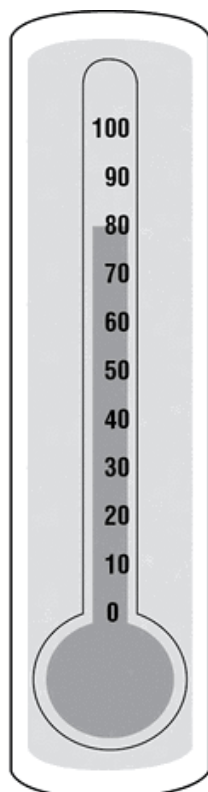
- 10** = Handle up close and finish the task
- 9** = Handle up close, then leave it
- 8** = Handle from a distance
- 7** = Stay in the room, take no action (>5 minutes)
- 6** = Stay in the room, take no action (<5 minutes)
- 5** = Consider taking action, but leave
- 4** = Get help from a friend, assist
- 3** = Get help from a friend, stay in the room/nearby
- 2** = Get help from a friend, don't re-enter
- 1** = Leave situation immediately, run away/flee
- 0** = No mention of approach behavior

Fear while acting – rated at the end (1 rating total)

- 10** = Highest anxiety/distress that you have ever felt
- 9** = Extremely anxious/distressed
- 8** = Very anxious/stressed; can't concentrate. Physiological signs present.
- 7** = Quite anxious/distressed; interfering with functioning. Physiological signs may be present.
- 6** = Moderate-to-strong anxiety or distress
- 5** = Moderate anxiety/distress; uncomfortable, but can continue to function
- 4** = Mild-to-moderate anxiety or distress
- 3** = Mild anxiety/distress; no interference with functioning
- 2** = Minimal distress/anxiety
- 1** = Alert and awake; concentrating well
- 0** = No distress, totally relaxed

*Personal courage – a ratio (fear*courage)*

Appendix B: Subjective Units of Distress (SUDS) Scale



- 100** – Highest anxiety/distress that you have ever felt
- 90** – Extremely anxious/distressed
- 80** – Very anxious/distressed; can't concentrate. Physiological signs present.
- 70** – Quite anxious/distressed; interfering with functioning. Physiological signs may be present.
- 60** – Moderate-to-strong anxiety or distress
- 50** – Moderate anxiety/distress; uncomfortable, but can continue to function
- 40** – Mild-to-moderate anxiety or distress
- 30** – Mild anxiety/distress; no interference with functioning
- 20** – Minimal anxiety/distress
- 10** – Alert and awake; concentrating well
- 0** – No distress; totally relaxed

Note: "SUDS" stands for "**Subjective Units of Distress Scale.**" Physiological signs may include, for example, sweating, shaking, increased heart rate or respiration, gastrointestinal distress.