ABSTRACT

The Development and Initial Validation of the
Baylor Emotional Reasoning Questionnaire (BERQ)

Laurie H. Russell, Psy.D.

Mentor: Thomas Fergus, Ph.D.

Anxiety disorders are a classification of mental disorders characterized by excessive fear or anxiety that is difficult to control and hinders daily functioning. Anxiety disorders are maintained by information-processing biases, one of which is emotional reasoning. Emotional reasoning refers to a reliance on one's emotional state at the expense of objective information when forming conclusions about oneself and the world. There is a critical gap in the literature related to how emotional reasoning is assessed. In response, this dissertation considers the development and preliminary examination of a new self-report measure of emotional reasoning, the Baylor Emotional Reasoning Questionnaire (BERQ). This measure was developed to address noted limitations of existing measures of emotional reasoning, including content linked to only a narrow-band of negative emotions, disorder-specific focus, and lack of standardization across studies.

An initial item pool was developed using a scenario-based approach to assess emotional reasoning. A group of 358 undergraduate students completed that item pool in Study 1. The distribution of item scores was examined and an exploratory factor analysis

was used to identify areas for item pool refinement. A refined item pool was examined in Study 2 to provide initial psychometric properties of the BERQ. A distinct group of 373 undergraduate students completed the BERQ as well as self-report measures assessing convergent and divergent constructs in Study 2A. A measure of trait anxiety was used to examine concurrent validity and incremental validity. A subset of Study 2A participants ($N = 56$) elected to participate in Study 2B, in which they watched a video clip, completed a measure of distress intolerance to further examine concurrent validity and incremental validity, and completed the BERQ to examine test-retest reliability. The BERQ evidenced no convergent, divergent, or concurrent relations. Emotional reasoning did not predict unique variance in distress intolerance, but did predict unique variance in trait anxiety over and above negative emotionality and anxiety-based reasoning. Results from the present study suggest that the BERQ may not be an adequate assessment measure for the construct of emotional reasoning.

The Development and Initial Validation of the
Baylor Emotional Reasoning Questionnaire (BERQ)

by

Laurie H. Russell, B.S., M.S.

A Dissertation

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_____
Charles A. Weaver III, Ph.D. Chairperson

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Approved by the Dissertation Committee

_____
Thomas Fergus, Ph.D, Chairperson

_____
Alisha Wray, Ph.D.

_____
Christine A. Limbers, Ph.D.

_____
Jeremy Uecker, Ph.D.

_____
Vanessa Jacoby, Ph.D.

Accepted by the Graduate School
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J. Larry Lyon, Ph.D., Dean

Page bearing signatures is kept on file in the Graduate School.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENTS

CHAPTER ONE

Introduction

Anxiety Disorders

Anxiety is a universal human emotion that alerts us to potential threats and motivates us to prepare for challenges (Barlow, 2002). However, a large proportion of the population experiences an excess of anxiety that is counterproductive and distressing. This heightened level of anxiety often results in the experience of anxiety disorders. Anxiety disorders are a classification of mental disorders characterized by excessive fear or anxiety that is difficult to control and substantially hinders daily functioning (Craske et al., 2009). Although the term 'mental disorder' has been hotly debated for years, this discussion will use the following definition of mental disorder: a psychological syndrome consisting of biological, psychological, and social factors that occurs in an individual and causes clinically significant distress or disability (Stein et al., 2010). In contrast to typical fears and anxieties that occur when an imminent threat is present and do not persist over time, clinically relevant forms of anxiety are generally more excessive and long-lasting. In addition, these heightened forms of anxiety are associated with substantial distress and impairment to the affected individual (American Psychiatric Association, APA, 2013). In the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*), anxiety disorders include Panic Disorder, Agoraphobia, Generalized Anxiety Disorder, Social Anxiety Disorder, Specific Phobia, Selective Mutism, and Separation Anxiety Disorder (APA, 2013). Although Obsessive-Compulsive Disorder (OCD) and

Post-Traumatic Stress Disorder (PTSD) are no longer classified as anxiety disorders within the *DSM-5*, these disorders functionally parallel the *DSM-5* anxiety disorders. For example, OCD and PTSD share several clinical features with anxiety disorders within the *DSM-5*, such as extensive anxiety, bodily symptoms, and avoidance behavior (Stein, Craske, Friedman, & Phillips, 2011). The overlap among the abovementioned disorders is so great that I will consider them together rather than separate in this document, an approach consistent with prior published research (e.g., Barlow & Kennedy, 2016; Milad, Rosenbaum, & Simon, 2014; Watson, 2005). Therefore, when I refer to anxiety disorders in the document, I am referring to anxiety disorders as well as the related disorders of OCD and PTSD.

Anxiety Disorders in College Students

Anxiety disorders are an important class of disorders to examine, as they are the most prevalent mental disorders in the world and are associated with significant comorbidity and morbidity. Epidemiological research suggests that anxiety disorders have the highest overall prevalence rate among mental disorders, with a lifetime prevalence of nearly 29% (Kessler, Berglund, Demler, Jin, & Walters, 2005). One group of individuals that is particularly affected by anxiety disorders is college students. Over the past 20 years, the prevalence of anxiety among American college students has steadily climbed, more than doubling between 2000 and 2013 (American College Health Association, 2000, 2013). Anxiety and stress are currently the number one cause of counseling center contacts (Hoffman, 2015). College counseling center directors reported that from 2010-2014, there was an 89% increase in students presenting for anxiety disorder treatment (Gallagher, 2014). Potential reasons why anxiety disorders are

increasing among young adults include diminished opportunities to achieve independence and accomplish developmental goals (Arnett, 2001; Arnett, 2014).

In addition to the increasing prevalence of anxiety disorders among college students, heightened levels of anxiety severity have a substantial negative impact on college students' quality of life (Gladis, Gosch, Dishuk, & Cris-Christoph, 1999; Mendlowicz & Stein, 2000). Quality of life refers to aspects of life that make it fulfilling and worthwhile and extends beyond anxiety symptoms themselves to include individuals' subjective well-being and life satisfaction (Angermeyer & Kilian, 1997). Anxiety symptoms may have a negative impact on academic performance, retention, and graduation rates (Novotney, 2014). Studies have demonstrated that students with high levels of anxiety have lower academic self-efficacy, are less effective with time management and use of study resources, and are less likely to persist when faced with distraction or difficulty (Kitzrow, 2003). As stated previously, the high prevalence and negative impact of anxiety disorders make them an essential area of psychopathology to study, particularly among college students. Based on these data, it is important to understand more about anxiety disorders specifically among college students so that (a) prevention efforts can be made prior to individuals beginning college and (b) treatment efforts can be offered to mitigate the impact of these disorders while individuals are enrolled in college.

Anxiety Disorders and Emotional Reasoning

One prominent theory of anxiety disorders was proposed by Beck (1967, 1976), with this theory asserting that anxiety disorders are maintained by information-processing biases. In the context of anxiety disorders, biases in attention, interpretation, memory,

and imagery may lead individuals to see situations as more threatening than they objectively are, and to motivate them to behave in ways that contribute to fear maintenance (e.g., avoidance; Hirsch & Clark, 2004). One such information-processing bias implicated by Beck is emotional reasoning (Beck, Emery, & Greenberg, 1985). Emotional reasoning refers to a reliance on one's emotional state at the expense of objective information when forming conclusions about oneself and the world (Arntz et al., 1995). Beck et al. (1985) identified emotional reasoning as a key cognitive distortion contributing to the development and maintenance of anxiety disorders.

As described more fully below, there is a critical gap in the literature related to how emotional reasoning is assessed; furthermore, this gap in the literature points to a need for the development of a novel measure of emotional reasoning. This dissertation document considers a new self-report measure of emotional reasoning, titled the Baylor Emotional Reasoning Questionnaire (BERQ), that will help fill the aforementioned gap in the literature. Before a discussion of this measure, content areas will be described to help lay the foundation for the importance of this novel measure. First, the relevance of negative emotionality to anxiety disorders will be discussed. I will then introduce emotional reasoning and discuss the current state of the literature regarding emotional reasoning, negative emotionality, and anxiety disorders. Finally, I will describe how emotional reasoning is currently assessed and turn to the importance of creating a new self-report measure. Study design and methodology will then be outlined, followed by a review of the results, discussion of findings, and limitations.

CHAPTER TWO

Literature Review

Negative Emotionality

Etiological models of anxiety disorders emphasize the role of temperamental vulnerability related to the propensity to experience negative emotional states in the pathogenesis of anxiety disorders. This vulnerability has been referred to using a variety of terms, including negative affectivity (Watson & Clark, 1984), negative emotionality (Pluess et al., 2011), and neuroticism (Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2014; Costa & McCrae, 1980; Eysenck, 1967). From a developmental perspective, negative emotionality describes individual differences in one's predisposition to experience negative emotions (Rettew & McKee, 2005). Similarly, negative affectivity represents a general factor of subjective distress subsuming a broad range of negative mood states, including fear, anxiety, sadness, shame, anger, and disgust (Watson & Clark, 1984). Neuroticism is defined as the tendency to experience frequent, intense, negative emotions associated with a sense of uncontrollability in response to stress (Barlow, Sauer-Zavala, et al., 2014). Neuroticism is also characterized by the pervasive perception that the world is a dangerous and threatening place (Barlow, 2002; Barlow, Ellard, Sauer-Zavala, Bullis, & Carl, 2014). Although neuroticism, negative affectivity, and negative emotionality are all distinct terms used in the literature, their definitions are so similar to suggest functional equivalency (Brown & Barlow, 2009); therefore, the term negative emotionality will be used to refer to these separate constructs interchangeably in the discussion that follows.

Although variability in adult temperament is mostly explained by several broad factors, the temperament most associated with anxiety disorders is negative emotionality (Watson & Clark, 1984; Zinbarg & Barlow, 1996). Numerous studies have related measures of negative emotionality to self-report ratings of anxiety symptom severity (Watson & Clark, 1984). One key component of negative emotionality is trait anxiety, defined as relatively stable individual differences in proneness to experience anxiety (Watson, Stanton, & Clark, 2016). Trait anxiety predicts heightened responses to and lower thresholds for detecting threat, which is a central feature of negative emotionality. In addition, trait anxiety is a key risk factor for anxiety disorders (Bados, Gomez-Benito, & Balaguer, 2010).

Individuals who are particularly anxiety-prone have a tendency to react with fearful responses more frequently and with relatively poor objective threat discrimination (Lissek, 2012). This response tendency is likely due to cognitive biases of greater threat-sensitivity and vigilance toward threat, as well as difficulty disengaging attention once a threat is detected (Wilson & MacLeod, 2003). These biases may lead to perceptions of ambiguous stimuli as threatening, leading individuals to respond to both real and imagined threat automatically. As a result, individuals may have fewer resources available for effective cognitive processing. Anxiety narrows cognitive resources resulting in an emphasis on automatic encoding at the expense of higher order processing (Matthews & Mackintosh, 1998). As such, the information-processing biases characteristic of high trait anxiety likely limit resources available for adaptive higher order elaboration of experience, such as in affect differentiation. In conclusion, the propensity to experience negative emotions and its relation to trait anxiety is a risk factor

that cuts across anxiety disorders and makes individuals vulnerable to developing this form of psychopathology. Due to the important role that negative emotionality plays in the development and maintenance of anxiety disorders, it is important to consider different negative emotions that comprise negative emotionality and how those specific emotions intersect with anxiety disorders.

Negative Emotions

Emotions are influential in helping individuals to organize thought processes and behavioral tendencies (Izard, 1993; Johnson-Laird & Oatley, 1992). Some researchers hypothesize that emotions evolved to provide pertinent information about an individual's immediate surroundings and to help people act efficiently to address threats or gain rewards (Baumann & Desteno, 2010). Emotions are theorized to "sensitize organisms to stimuli and give priority to responses of relevance to the particular state" (Wiens & Öhman, 2007, p. 71). That is, emotions provide an evaluative gauge for an individual's surroundings and recruit an individual's resources for appropriate action (Barrett, Mesquita, Ochsner, & Gross, 2007; Clore, Gasper, & Garvin, 2001; Ellsworth & Scherer, 2003; Schwarz & Clore, 2007). The emotional system, therefore, may play an important role in automatic threat detection, acting first as an alarm system and second, preparing the mind and body to deal with what comes next. In short, a central function of emotions is to provide information meant to inform subsequent thought and action to address potential challenges in one's environment (Barrett et al., 2007; Clore et al., 2001; Schwarz & Clore, 2007; Smith & Lazarus, 1990).

Some researchers argue that negative emotionality alone is insufficient for the development of fear and anxiety, and must be coupled with the misappraisal of emotion

to lead to mental disorders (Lonigan & Phillips, 2001). Therefore, the appraisal of the emotion, not just the emotion itself, appears important to the development of psychopathology. If an emotion is deemed aversive and an individual chooses to engage in emotional avoidance, it is likely that the experience of that emotion may increase rather than decrease (Gross & Levenson, 1993). In individuals with anxiety disorders, certain emotional states may be perceived as more aversive than other emotional states. For example, researchers have demonstrated that "fear of fear" is a central characteristic of anxiety disorders (Barlow, 2000). In that case, the emotion of fear is deemed unacceptable and negative evaluations are made. Judgments made by individuals with anxiety disorders regarding their internal states, including emotions, thoughts, and physical sensations, may serve to confirm misinterpretations of standard autonomic arousal, thereby furthering disproportionate attempts at regulation (Barlow, 2000).

Thayer and Lane (2000) asserted that anxiety disorders represent a failure to either choose an adaptive response or to inhibit a maladaptive response in response to a particular situation. As described above, anxiety is a manifestation of negative emotionality, which is a broad construct comprised of multiple negative emotions. Anxiety disorders, while being a diverse set of phenotypes, are alike in that they all involve excessive negative emotions. Some of the most critical of these emotions and their relationship to anxiety disorders will be described below. It is important to note that the bulk of the literature is focused almost exclusively on anxiety and its relationship to anxiety disorders. However, other negative emotions that comprise negative emotionality, such as fear, disgust, shame, sadness, and anger, are also commonly seen in individuals with anxiety disorders. These specific emotions putatively form the basis of negative

emotionality (Watson & Clark, 1984). Some of these emotions, including anxiety and disgust, have also been linked to emotional reasoning in the context of anxiety disorders (e.g., Arntz et al., 1995; Englehard, van den Hout, Artnz, & McNally, 2002). The relationship between anxiety disorders and these negative emotions will be discussed in the sections that follow.

Fear

Fear occurs as a healthy adaptive response to a perceived threat to one's physical safety and security (Öhman & Wiens, 2004), warning individuals of imminent danger and the need for defensive action (Beck & Greenberg, 1988; Craske, 2003). However, fear can be maladaptive when it occurs in a nonthreatening or neutral situation that is misinterpreted as representing a potential danger or threat. Two issues are fundamental to theories of anxiety disorders: (a) how to distinguish fear from anxiety and (b) how to determine what constitutes adaptive versus non-adaptive reactions. Despite the severity and pervasiveness of anxiety disorders, the literature is only beginning to clarify the often poorly delineated relationship between fear and anxiety.

Anxiety

Barlow (2002) stated that fear, an emotion described by heightened arousal and tendency toward action, is a primitive alarm system that occurs in response to danger. In contrast, he characterized anxiety as a future-oriented emotion that is defined by its perceptions of unpredictability and uncontrollability over events considered aversive. Barlow stated that anxiety generally involves a rapid shift in attention toward either these aversive events themselves or individuals' emotional responses to these events. Beck,

Emery, and Greenberg (1985) stated that fear is the appraisal of danger, while anxiety is the unpleasant feeling state evoked when fear is stimulated. Both proposals consider fear a discrete, fundamental construct whereas anxiety is a more general subjective response. Beck et al. emphasize the cognitive nature of fear and Barlow (2002) focuses on the more automatic neurobiological and behavioral features of the construct. In addition, results from existing studies support the aforementioned assertions that fear and anxiety are distinct (Perkins, Kemp, & Corr, 2007). On the basis of these considerations, the following definitions of fear and anxiety will be used in this discussion. Fear is a primitive, automatic state of alarm involving the cognitive appraisal of imminent threat or danger to the safety and security of an individual. In contrast, anxiety is a complex cognitive, affective, physiological, and behavioral response system that is activated when anticipated events or circumstances are deemed to be highly aversive because they are perceived to be unpredictable and uncontrollable (Ohman, 2008).

Disgust

Disgust has been recognized as an influential emotion in the onset, maintenance, and treatment of anxiety and related disorders (Cisler, Olatunji, & Lohr, 2009; Olatunji, Armstrong, & Elwood, 2017; Olatunji & Sawchuk, 2005) and is characterized by a revulsion response towards potential contamination (Olatunji & Cisler, 2008). As observed by Davey (2011), anxiety disorders are characterized by avoidance of disgust-relevant stimuli due to disease concerns. Woody and Teachman (2000) purport that appraisals of a stimulus as potentially threatening or dangerous is associated with a fear response, while disgust appraisals focus more specifically on the threat of contamination.

Physiological systems may also be a viable indicator for distinguishing disgust

and fear. For example, Woody and Teachman suggest that heart rate acceleration

characterizes fear, while heart rate deceleration characterizes disgust. Facial expression

data indicate that, while both fear and disgust have distinct facial expressions, there is

more consistent evidence for a "disgust" facial expression. The dominant action tendency

for both fear and disgust is behavioral avoidance (Izard, 1993), which serves as a

defensive function for the individual. A broad array of existing research supports the

relationship between disgust and anxiety disorders (Mulkens, de Jong & Merckelbach,

1996; Olatunji, Sawchuk, de Jong, & Lohr, 2007; Sawchuk, Lohr, Westendorf, Meunier,

& Tolin, 2002). Research on disgust propensity and disgust sensitivity offer indirect

empirical support for emotional reasoning in the context of disgust. For example,

research has demonstrated that there is a link between individuals' tendency to view

disgust reactions as aversive and greater anxiety symptomology (Olatunji et al., 2007).

Shame

Existing research supports the relationship between shame and anxiety disorders.

First, it is important to define shame and distinguish it from the similar yet distinct

emotion guilt, as this discussion will focus on shame. While both shame and guilt involve

negative emotionality, the focus of the negative emotionality differs, leading to distinct

phenomenological experiences (Tangney, 1992). In guilt, the object of concern is some

specific action (or failure to act) (Lewis, 1971), resulting in remorse or regret over the

"bad thing that was done" and a sense of tension that often leads to reparative behavior.

In shame, Lewis states that the object of concern is the self; furthermore, the "bad thing"

that occurs is experienced as a reflection of a "bad self," leading the entire self to be

painfully scrutinized and negatively evaluated. This negative self-evaluation leads to feelings of worthlessness and powerlessness.

Research suggests that guilt and shame are often differentially associated with psychological outcomes. For example, research has consistently shown that shame-free guilt tends to be associated with prosocial behaviors and good interpersonal functioning (e.g., De Hooge, Zeelenberg, & Breugelmans, 2007; Schoenleber, Chow, & Berenbaum, 2014). In other words, the relationships between guilt and psychological problems become non-significant or negative after taking into account the association between guilt and shame. In contrast, shame is positively associated with a wide variety of psychological problems, even after taking guilt into account (e.g., Tangney, 1992). Furthermore, the differential action tendencies associated with guilt and shame (approach versus avoidance respectively) suggest that shame, but not guilt, might be particularly important to anxiety symptoms (Schoenleber et al., 2014). Therefore, the focus for this discussion will be on shame, not guilt.

The role of shame across anxiety disorders has been demonstrated in the literature. For example, shame-proneness, defined as the propensity to experience shame across many situations, has been linked to higher self-reported anxiety symptoms (Fergus, Valentiner, McGrath, & Jencius, 2010; Schoenleber & Berenbaum, 2010; Schoenleber et al., 2014). Individuals with self-reported anxiety symptoms also tend to experience higher levels of shame aversion (Gosselin et al., 2003). Shame aversion is defined as the tendency to perceive shame as especially painful and undesirable (Schoenleber & Berenbaum, 2010). Research on shame aversion offers indirect empirical support for emotional reasoning in the context of shame. Therefore, individuals who

experience higher levels of shame aversion are likely to engage in emotional reasoning by making decisions based on the painfulness of their shame rather than using objective evidence.

Anger

Anger and hostility may play a role in the etiology and maintenance of anxiety disorders as well (Gould et al., 1996). Anger has been defined as "a syndrome of relatively specific feelings, cognitions, and physiological reactions linked associatively with an urge to injure some target" (Berkowitz & Harmon-Jones, 2004, p. 108). Anger and anxiety have been linked through shared physiological stress reactions (e.g., Cannon, 1929). In particular, anger and anxiety may be related through underlying biological vulnerabilities, such that, when confronted with threat, individuals react with anger or anxiety (i.e., "fight or flight") (Barlow, 2002).

There is evidence to suggest that elevated levels of anger are present in individuals with anxiety disorders. Anger researchers distinguish between anger experience, which is the tendency to feel anger emotions inwardly, and anger expression, which is the tendency to behave outwardly in an angry or hostile manner. In addition to trait and state anger, some dimensions of anger that have been examined include hostility (the cognitive component of anger), aggression (the behavioral component of anger), internalized anger expression (the tendency to suppress angry feelings), externalized anger expression (the tendency to outwardly express angry feelings), and anger control (the ability to regulate anger) (Deschênes, Dugas, Fracalanza, & Koerner, 2012). Moscovitch, McCabe, Antony, Rocca, and Swinson (2008), as well as others, found elevated levels of hostility, trait anger, and internalized anger expression in individuals

with anxiety disorders relative to non-anxious controls (Erwin, Heimberg, Schneier, & Liebowitz, 2003; Olatunji, Ciesielski, & Tolin, 2010). Extant literature on anger experience offers indirect empirical support for emotional reasoning in the context of anger, suggesting that individuals who have higher levels of anger experience are likely to engage in emotional reasoning by making decisions based on the intensity of their anger rather than taking into account a situation's objective facts.

Sadness

Although less directly related to anxiety disorders, sadness still plays a potentially important role in their conceptualization. Sadness is closely related to fear of negative evaluation, a construct that is representative of anxiety disorders (Carleton, Collimore, McCabe, & Antony, 2011). Fear of negative evaluation is defined as the fear that one's self will be judged negatively (Levinson et al., 2013). Individuals with anxiety disorders may tend to interpret social information in an overly negative way (Amir, Beard, Burns, & Bomyea, 2009) and assume that others tend to be highly critical. As a result, individuals with anxiety disorders believe that people are inclined to evaluate them negatively (Haikal & Hong, 2010). Research suggests that individuals high in fear of negative evaluation report more negative mental images of their own appearance and actions in anxiety-provoking social situations (Morrison & Heimberg, 2013) and rate emotional expression of others as being more negative (Winton, Clark, & Edelmann, 1995) than their peers. Individuals with anxiety disorders demonstrated greater endorsement of catastrophic beliefs and subjective reactivity to sad mood inductions than nonanxious controls (Mennin, Heimberg, Turk, & Fresco, 2005). Research on fear of negative evaluation provides indirect empirical support for emotional reasoning in the

context of sadness. Therefore, individuals who are more fearful of negative evaluation may be more likely to engage in emotional reasoning by making decisions based on their desire to avoid negative evaluation rather than using objective evidence.

<div align="center">*Emotional Reasoning and Anxiety Disorders*</div>

As mentioned above, emotions that comprise negative emotionality play a role in the etiology and maintenance of anxiety disorders. In addition, research suggests that it is not only the experience of these negative emotions but also the way they are appraised by individuals that contributes to the development of anxiety disorders. This next content section will consider how the appraisal of these emotions can lead to biased processing of information, which can serve to maintain anxiety and lead to the development of anxiety disorders.

Emotional reasoning refers to an individual's reliance on his/her emotional state at the expense of objective information when forming conclusions about oneself and the world (Arntz et al., 1995). Emotional reasoning is a form of information-processing bias commonly found in anxiety disorders, as anxiety disorders are characterized by a heightened sense of vulnerability that is evident in individuals' biased and exaggerated appraisals of possible personal harm in response to cues that are neutral or innocuous. Individuals with anxiety disorders chronically believe that the probability that harm will occur is high and the perceived severity of the harm is greatly overestimated (Clark & Beck, 2010). Even particular anxiety symptoms may themselves pose a threat. For example, an individual may interpret a racing heart or shortness of breath as signs of danger. Individuals may believe that these anxiety symptoms will impair performance, be interpreted as signs of physical or mental disorders, or make them think that something

bad is going to happen. These effects increase the subjective sense of vulnerability and appraisals of danger. If emotional reasoning contributes to the perpetuation of anxious affect, as cognitive theories of anxiety disorders would assert (Clark & Beck, 2010), then emotional reasoning tendencies would be expected to decrease in concert with reductions in anxiety symptoms during treatment of anxiety disorders. Behaving in accordance with an information-processing bias, such as emotional reasoning, can lead to a narrowed behavioral repertoire, fewer opportunities to access new sources of reinforcement, increased emotional distress, and, if left unchecked, persistent maladaptive behavior (Hirsch & Clark, 2004).

The bulk of the current literature focuses on the relationship between emotional reasoning and anxiety; therefore, this section will focus primarily on that relationship. As mentioned above, negative emotionality encompasses several distinct negative emotions. While some studies have looked at the relationship between emotional reasoning and disgust, the research in this area is limited. In addition, the connections between emotional reasoning and fear, shame, anger, and sadness have not yet been examined.

Emotional reasoning implies a process of thinking whereby emotional states are given disproportionate influence in the formation of an interpretation (Berle & Moulds, 2013). For example, if asked about the danger of a specific situation, individuals may argue that their subjective experience of anxiety is clear evidence for it. This type of emotional reasoning has been described by Beck et al. (1985) as follows: "Many anxious patients use their feelings to validate their thoughts and thus start a vicious circle: I feel anxious when I ask for the date so there must be something to fear" (p. 198). This argument can be formally described as an ex-consequentia reasoning because individuals

do not only conclude that danger implies feeling anxious, but also that feeling anxious implies danger. If danger is inferred on the basis of an anxiety response, and not on the basis of objective danger, it is clear that false alarms will not be recognized as such and irrational fear will tend to persist.

The role of emotions in beliefs about danger has been emphasized by affect-as-information theories. These theories state that affective feelings allow individuals to learn about their own implicit judgments and decisions. These theories state that people misattribute their anxiety to a target of judgment (Curtis & Locke, 2007; Gasper & Clore, 2000). That is, judgment of a situation will be influenced by feelings at the time of judgment. For example, with regard to risk estimates, both cognitive evaluations, including objective information about the probability of the outcome, and internal feelings, including emotions, are considered (Clore & Storbeck, 2006). However, when potential outcomes are highly emotionally undesirable, like exposure to a fear-evoking stimulus, objective information about the probability of the outcome may be ignored (Slovic, Finucane, Peters, & MacGregor, 2002). Affect-as-information theories are closely tied to the aforementioned concept of emotional reasoning. For example, in the context of anxiety disorders, individuals may misinterpret anxious feelings as a sign of impending danger, even if there is objective information present indicating that the emotion is a false alarm. The apparent stability of emotional reasoning tendencies demonstrated in several studies (i.e., Berle & Moulds, 2013; Morren, Muris, Kindt, Schouten, & van den Hout, 2008) suggests that emotional reasoning might serve as a long-standing and potentially premorbid risk factor that increases an individual's risk of developing an anxiety disorder.

Emotional reasoning is best conceptualized as a dimensional rather than categorical variable, much like other information-processing biases related to anxiety disorders. For example, at relatively low levels, emotional reasoning does not appear to be linked to anxiety disorders (Berle & Moulds, 2013). In fact, there may be situations where one's emotional state provides important and helpful information for the situation at hand, and researchers have emphasized the potentially adaptive function of allowing one's emotional and affective state to guide cognitive processing (Forgas, 2008). Therefore, it is important to consider that it may be the degree of emotional reasoning or the extent to which an individual's emotional state information impedes the processing of other important information about the situation, that puts the individual at risk for increased anxiety symptoms.

Emotional reasoning appears to characterize all anxiety disorders. Arntz et al. (1995) compared emotional reasoning tendencies in treatment-seeking individuals experiencing multiple anxiety disorders (each anxiety disorder was represented by a distinct group) with a non-clinical control group. The emotional reasoning task involved participants providing ratings of the dangerousness of scenarios that varied according to whether an anxious response was or was not indicated. Arntz et al. found that, in contrast with the control group, each of the anxiety disorder groups demonstrated elevated emotional reasoning. Emotional reasoning was not confined to situations relevant to one's own disorder. For example, individuals experiencing panic disorder appeared to engage in emotional reasoning when imagining social anxiety-themed scenarios. Results suggest that the effect of anxiety response on information processing was not situation-specific and generalized to a broad anxiety factor.

Similar to patients experiencing the aforementioned anxiety disorders, individuals experiencing fear-based disorders tend to prioritize the processing of threatening information (Engelhard, Macklin, McNally, van den Hout, & Arntz, 2001) and tend to selectively store and recall threatening information (McNally, Metzger, Lasko, Clancy, & Pitman, 1998). Once fear-based symptoms have emerged, the individual's appraisals of them may be critical. Ehlers and Clark (2000) proposed that negative appraisals of initial fear-based symptoms might incite a sense of current threat, thus fostering symptom persistence. The threat may be internal ("I'm going crazy") or external ("The world is dangerous"). Consistent with Arntz et al. (1995), Engelhard et al. (2001) found that, compared to healthy combat veterans, individuals experiencing fear-based psychopathology interpret fear responses themselves as representations of impending threat. A similar pattern occurred for fear-based intrusions, confirming predictions of Ehlers and Clark (2000).

Preliminary research on the relationship between emotional reasoning and disgust suggests that, when experiencing disgust, people may have a tendency to use these emotional responses to infer danger as well as heightened risk of contamination. In addition to earlier questionnaire studies suggesting a prominent role of enhanced disgust proneness in anxiety patients (Ludvik, Boschen, & Neumann, 2015), current findings point to a specific role of disgust responding in strengthening illness concerns through emotional reasoning. For example, contamination concerns are one of the primary symptoms of disgust-based anxiety disorders (McKay et al., 2004). Current cognitive conceptualizations of contamination fear emphasize the importance of illness/contamination-related catastrophic beliefs (Riggs & Foa, 2007). To explain the

persistence of these dysfunctional anxious appraisals, it has been proposed that emotional reasoning may be involved in contamination fear (Arntz et al., 1995). Disgust-based emotional reasoning has been conceptualized as a general overestimation of danger, an enhanced risk of becoming contaminated, and a higher subjective probability of being inflicted by disease.

There is also some evidence that emotional reasoning may be involved in the maintenance of anxiety disorders by promoting avoidance strategies, which preserve irrational beliefs (Verdujn, Vincken, Meesters, & Englehard, 2015). A longitudinal study among survivors of trauma exposure showed that emotional reasoning (based on intrusions) predicted chronic fear-based symptoms (Engelhard et al., 2002). Moreover, data by Arntz (2001) indicates that emotional reasoning after cognitive behavioral therapy for anxiety disorders predicts relapse beyond residual post-treatment symptoms. Therefore, if emotional reasoning contributes to the perpetuation of anxiety, as cognitive theories of anxiety disorders would suggest, emotional reasoning tendencies would be expected to decrease in concert with reductions of anxiety symptoms during treatment of anxiety disorders (Berle et al., 2016).

Emotional Reasoning and Cognitive-Behavioral Therapy

Cognitive-behavioral therapy (CBT) refers to a class of interventions that share the same basic premise. The core premise of this treatment approach, as pioneered by Beck (1970) and Ellis (1962), asserts that maladaptive cognitions contribute to the maintenance of emotional distress and behavioral problems. According to Beck's model, these maladaptive cognitions include general beliefs, or schemas, about the world, the self, and the future, giving rise to specific and automatic thoughts in particular situations.

20

The basic model proposes that therapeutic strategies to change these maladaptive cognitions lead to changes in emotional distress and problematic behaviors. The efficacy of CBT for anxiety disorders in adults has been supported by multiple meta-analyses (e.g., Butler, Chapman, Forman, & Beck, 2006; Hoffman, Asnaani, Vonk, Sawyer, & Fang, 2012).

CBT aims to modify dysfunctional beliefs and information-processing biases. As discussed above, emotional reasoning is one information-processing bias. Therefore, it can be presumed that CBT would reduce emotional reasoning by helping patients learn how to look for evidence that is based on objective facts rather than an emotionally-laden inference. A study by Berle et al. (2016) was the first to investigate whether emotional reasoning tendencies changed during a routine course of individual CBT. Results demonstrated that, aside from emotional reasoning pertaining to one's perceived (in)competence, emotional reasoning tendencies did not change even though anxiety symptoms decreased. The authors propose several reasons why the majority of emotional reasoning tendencies did not significantly change over the course of therapy. For example, participants received cognitive behavioral "treatment as usual" which did not include any prescribed content specifically pertaining to emotional reasoning, so for many of the participants, the concept of emotional reasoning may have never been explicitly discussed or targeted in therapy at all. While there is extensive literature documenting therapy-related changes in other cognitive distortions described by CBT models, such as catastrophizing (Hicks et al., 2005), the Berle et al. (2016) study is the only one to systematically assess emotional reasoning in routine face-to-face therapy.

While emotional reasoning is one cognitive distortion that could contribute to the maintenance of anxiety disorders, it rarely appears to be explicitly targeted in CBT for anxiety disorders. Nevertheless, Beck et al. (1985) discuss the importance of using intervention strategies that help patients detach themselves from overly emotional states to allow them to observe their mental processes more dispassionately. In addition, a technique called affect labeling has been increasingly incorporated into CBT treatment (Kircanski, Lieberman, & Craske, 2012). Affect labeling refers to the verbalization of current emotional experience (i.e., putting feelings into words) (Lieberman, Inagaki, Tabibnia, & Crockett, 2011; Pennebaker, Mayne, & Francis, 1997). Research suggests that, when current emotional experience is verbalized, the intensity of emotional reactions to stimuli is reduced relative to conditions in which no verbalization or verbalization of non-affective material occurs (Kircanski et al., 2012; Niles, Craske, Lieberman, & Hur, 2015). Based on the current research, it appears that affect labeling in some variations of CBT may be helping to challenge emotional reasoning; however, this proposal has never been formally examined.

As discussed, there is evidence that information-processing biases, such as emotional reasoning, may be involved in the development of and maintenance of anxiety disorders. As stated above, CBT for anxiety disorders does not seem to impact emotional reasoning, which could be one reason why treatment responses are not always ideal. Therefore, it is important to potentially target these biases in treatment. Assessing emotional reasoning would allow clinicians to understand if emotional reasoning is present and track its development over the course of treatment. This knowledge would

help clinicians determine if emotional reasoning is changing as a function of treatment. Therefore, assessment is a crucial step in better understanding emotional reasoning.

Existing Assessment of Emotional Reasoning

Multiple studies have assessed emotional reasoning through a scenario-based method developed by Arntz et al. (1995) or a subtle variation of this method (e.g., Englehard & Arntz, 2005; Lommen, Engelhard, van den Hout, & Arntz, 2013; Verwoerd, van Hout, & de Jong, 2016). Depending on the purpose of the study, different types of scenarios have been used by different researchers. Furthermore, researchers have generally adapted the original scenarios created by Arntz et al. to be representative of a specific anxiety disorder. For example, a researcher examining panic disorder may create scenarios that pertain to panic attacks, in which an individual feels a pain in his or her chest on the way to the local shopping center or experiences shortness of breath on a crowded train. In contrast, a researcher studying GAD may create scenarios related to widespread worry, such as an individual receiving a late bill and wondering how to pay it.

Participants are asked to vividly imagine themselves in the situations described by each of the scenarios. Each scenario is typically presented four times during each assessment appointment, with a different ending each time depending on the negative emotion assessed. Here is an example of one scenario used by Arntz et al. (1995): "You are in the elevator in the largest department store in Maastricht, intending on taking it from the fifth to the first floor. Breathing is getting more difficult. The elevator is packed with the maximum number of people allowed." The four endings for this anxiety-based scenario included the following information: (a) objectively neutral ending with a non-

valenced emotional response (i.e., "One of the passengers accidently falls into your arms. You smile. You have been interested in this person for quite some time and this seems to be a good opportunity"); (b) objectively neutral ending with an anxious response (i.e., "Suddenly you become very anxious"); (c) objectively negative ending and a non-valenced emotional response (i.e., "All of a sudden the elevator gets stuck between floors. The ventilator stops and the elevator won't budge. You see two people faint: one falls into your arms. You smile. You've been interested in this person for quite some time and this seems to be a good opportunity"); and (d) objectively negative ending with an anxious response (i.e., "All of a sudden the elevator gets stuck between floors. You have seen two people faint. Suddenly you become very anxious").

Participants are then asked to provide ratings for each of the different types of scenarios. Research suggests that these ratings differ slightly depending on the particular study; however, most studies have included ratings of dangerousness, uncontrollability, anxiety, and positive or negative outcome. Research suggests that emotional reasoning can be calculated by taking the difference of participants' summed response to the no emotion/danger and no emotion/no danger scenarios and summed response to the emotion/danger and emotion/no danger scenarios. This assessment of emotional reasoning suggests that emotional reasoning scores are not so much a reflection of the content of a particular scenario, but rather an index of the extent to which anxiety-related emotions are associated with negatively-valenced interpretations (Artnz et al., 1995; Berle & Moulds, 2013).

Several studies have also assessed emotional reasoning in the context of disgust and contamination fear (Verwoerd, de Jong, Wessel, & van Hout, 2013; Verwoerd et al.,

2016). Verwoerd et al. (2013) and Verwoerd et al. (2016) generated a series of scripts, constructed along the lines of Arntz et al. (1995), that described everyday contamination-relevant scenarios. Half of the scripts consisted of scenarios high in objective threat of contamination and half of the scripts were low in objective threat of contamination. For each type of script, half of the scenarios indicated that the actor experienced a disgust response where, as in the other half, this type of response was omitted. In these studies, the visual analogue scales assessed various domains, including: danger, risk of contamination, and risk of becoming ill.

One alternative approach to measuring emotional reasoning has been developed using a non-vignette-based measure. The Anxiety Based Reasoning scale, a subscale of the second edition of the Anxiety Attitude and Belief Scale, was created to assess emotional reasoning in the context of anxiety (Brown, Hawkes, Cooper, Jonsdottir, & Tata, 2014). Participants are asked to read a statement and determine how much they believe the statement on a 0-100 scale (0 = I don't believe this at all; 100 = I believe this completely). Out of the 33 items on this measure only four of those items comprise the Anxiety Based Reasoning subscale. Like other extant measures of emotional reasoning, the subscale has an exclusive focus on anxiety.

Limitations with the current assessment measures for emotional-reasoning are three-fold: (a) exclusive focus on a single negative emotion, (b) generally correspond to a particular anxiety disorder, and (c) are not standardized across studies. Emotional reasoning has been found to be non-disorder specific, meaning that it is a transdiagnostic tendency for anxiety disorders (Arntz et al., 1995). In addition, the lack of a standardized instrument assessing emotional reasoning makes it difficult to meaningfully compare an

individual's score on this measure to other individuals or groups of individuals. Therefore, the development of a new measure of emotional reasoning would fill several important gaps in the literature.

As stated previously, a broad range of negative emotions are linked to anxiety disorders. Therefore, a standardized measure of emotional reasoning that assesses individuals' propensity to engage in emotional reasoning when they experience a full range of negative emotions implicated in relation to anxiety disorders would offer a more comprehensive assessment of emotional reasoning than current assessment methods that focus exclusively on a single negative emotion (to date, anxiety or disgust). This measure would broadly assess emotions that comprise negative emotionality, including anxiety, fear, sadness, disgust, shame, and anger without including symptoms that comprise specific anxiety disorders. Psychometric data on the current assessment measures for emotional reasoning are generally lacking. For example, no known published studies have examined the factor structure, internal consistency, convergent validity, discriminant validity, or incremental validity of the scenario-based measures. The only reported finding regarding reliability is from Arntz et al.'s (1995) scenario-based approach that demonstrated good two to six-week test-retest reliability (rank-order stability > .75).

Purpose of the Present Study

The present study aimed to develop and provide initial validation of the Baylor Emotional Reasoning Questionnaire (BERQ). The BERQ was developed to address noted limitations of existing measures of emotional reasoning, including content linked to only a narrow-band of negative emotions, disorder-specific focus, and lack of standardization

across studies. The development of the BERQ aimed to be useful for both researchers and clinicians alike. For example, it was hypothesized that researchers could use the BERQ to gain greater insight into the nature of emotional reasoning and its relation to anxiety disorders, while clinicians could use the BERQ to help determine whether emotional reasoning is an information-processing bias held by their clients. The BERQ was conceptualized as a measure that could be useful for outcome monitoring.

Study 1 examined the distribution of item scores and an exploratory factor analysis (EFA) was used to identify areas for item pool refinement. Following from Study 1 findings, a refined item pool was examined in Study 2 to provide initial psychometric properties of the BERQ. Examined psychometric properties included factorial validity, internal consistency, test-retest reliability, convergent validity, discriminant validity, concurrent validity, and incremental concurrent validity. Those analyses are described in fuller detail below within the respective data analytic strategy section.

The present study utilized college students for the examination and initial validation of the BERQ. As stated previously, college students are particularly affected by anxiety disorders. In addition to the increasing prevalence of anxiety disorders in college students, heightened levels of anxiety severity have a substantial negative impact on college students' quality of life. Based on this information, it was important to understand more about anxiety disorders specifically in college students in order to assist prevention efforts that can be made prior to individuals beginning college and improve treatment efforts to mitigate the impact of these disorders while individuals are in college. As the phenomenology of anxiety appears similar across college students and community

members (e.g., Roemer, Molina, & Borkovec, 1997), the use of a college student sample in the proposed study was expected to result in a self-report measure that broadly generalizes to the emotional reasoning experienced by other individuals.

Item Pool Development

To address limitations surrounding extant assessment measures, the BERQ item pool consisted of four scenarios for each of six negative emotions (fear, anxiety, disgust, shame, anger, and sadness). For each of the six negative emotions included in the BERQ, sixteen vignettes were presented (following Artnz et al., 1995). Therefore, participants completed a total of 96 vignettes as part of the initial BERQ.

The vignettes were created using two sources. The first source was the scenario-based approach popularized by Arntz et al. (1995) and subsequently used by several researchers examining emotional reasoning in the context of anxiety disorders (e.g., Lommen et al., 2013; Verwoerd et al., 2013; Verwoerd et al., 2016). Each vignette describes everyday events with a negative outcome and has four alternate endings similar to the alternate endings described above. The endings used in the present study are portrayed here: (a) low objective cost, no emotional response; (b) low objective cost, emotional response; (c) high objective cost, no emotional response; (d) high objective cost, emotional response.

After reading each vignette, participants were asked to rate the perceived cost of the negative outcome on a 0-100 scale (0 = not costly at all; 100 = extremely costly). While previous studies have used dangerousness as a response option (e.g., Arntz et al., 1995; Lommen et al., 2013), perceived cost of negative outcome is more broadly related to negative emotionality, while dangerousness is more specific to the emotions of fear

and anxiety. In addition, perceived cost of negative outcome is frequently referred to in the anxiety disorders literature, as these disorders are linked to greater cost estimates associated with potential negative outcomes (Butler & Mathews, 1983). Item scores were calculated as the difference between participants' summed responses to the emotional response/high objective cost negative outcome and emotional response/low objective cost negative outcome scenarios and summed responses to the no emotional response/high objective cost negative outcome and no emotional response/low objective cost negative outcome scenarios, following participants' scores for each scenario on the abovementioned 0-100 scale [e.g., Emotional Reasoning = (High Cost Disgust + Low Cost Disgust) – (High Cost No Disgust + Low Cost No Disgust)]. Higher scores indicated greater levels of emotional reasoning while lower and/or negative scores indicated lower levels of emotional reasoning. There were four emotional reasoning scores for each emotion, resulting in a total of 24 BERQ scores.

The second source for item pool development was Linehan's (2015) "Emotion Regulation Worksheets," taken from her DBT Skills Training Manual, Second Edition. In these worksheets, Linehan includes a portrayal of several negative emotions, including examples for how to describe these emotions, prompting events for feeling these emotions, and biological changes and experiences of these emotions (Linehan, 2015). For each vignette, an everyday event was generated that featured either a low or high objective cost accompanied by either a non-emotional or an emotional response. Linehan's Emotion Regulation Worksheets were used to provide cognitions associated with each emotion as well as specific actions tied to each emotion for the emotional

29

response scenarios. The BERQ vignettes for the original BERQ in Study 1 are presented

in Appendix C.

CHAPTER THREE

Study 1

Method

Participants

A total of 358 eligible undergraduate students from Baylor University participated in the current study. Of the 358 students who completed the consent form, 18 students did not complete additional items and were removed from analyses. The mean age was 19.2 years ($SD = 1.37$) and participants identified as white (55.3%), Asian (17.4%), Hispanic/Latino (10.9%), black (10.3%), bi-racial/multi-racial (4.4%) or other (0.9%). Participants identified as female (74.8%) or male (25.2%).

Procedure

Participants were recruited from undergraduate psychology courses at Baylor University. In exchange for partial course credit toward a research participation requirement, participants completed several demographic questions and the Baylor Emotional Reasoning Questionnaire (BERQ) through a study generator program (Qualtrics). The study was accessible from any device with Internet access. All participants provided informed consent prior to completing the BERQ.

Data Analytic Strategy

All data were analyzed using IBM SPSS Statistics for Mac, Version 25.0. Eighteen participants (5% of total sample) with no responses were removed from

analysis. Little's Missing Completely at Random (MCAR) test was performed on the remainder of the data ($N = 340$) to determine if the pattern of missing values were at random. Little's MCAR Test was nonsignificant ($\chi^2_{(5,428)} = 5495.29$, $p = .258$), suggesting that the pattern of missing values did not depend on the data values. Expectation Maximization (EM) was then used to replace missing values. Cost scores were imputed at the component level (e.g., at the Fear 1 component level, which was computed by subtracting the sum of the Fear 1 no emotional response ratings [low objective cost rating + high objective cost rating]) from the sum of the Fear 1 emotional response ratings [low objective cost rating + high objective cost rating], rather than each item rating level.

Results

The goal was to obtain one set of vignettes per emotion to shorten the length of time required to complete the BERQ. The goal was to shorten the BERQ to between 10 and 15 minutes in length. On average, each vignette took approximately 30 seconds to complete. Given this completion time and the aim to have one set of vignettes (four vignettes in a set) for each of the six emotions, that version of the BERQ would be expected to take around 12 minutes to complete. Descriptive statistics were calculated for each item of the BERQ. These values are presented in Table A.1 and Table A.2. Cost score distributions (at the component level) were initially examined using skew and kurtosis values. No items were found to have skew and kurtosis values outside of acceptable guidelines, which was defined in this study as $> |2|$ (Bandalos, 2018), with skew values ranging from -0.66 to 1.19 and kurtosis values ranging from -0.89 to -0.50. All vignettes were retained at this initial step of examination, as each set of vignettes resulted in scores that reasonably approximated a normal distribution. Inter-item

correlations among cost scores (at the component level) from groupings of vignettes were considered next, with acceptable ranges defined as falling between .15 and .50 (Clark & Watson, 1995). Considering inter-item correlations led to discarding multiple pairings of vignettes. Those vignettes pairings are presented in Table A.3. These pairings were discarded because the range of inter-item correlations either fell below .15 or above .50.

After discarding items due to unacceptable inter-item correlations, a common approach to exploratory factor analysis (EFA) was undertaken using principal factor extraction (Bandalos, 2018; Fabrigar et al., 1999) with different groupings of items (one set of vignettes per emotion). The goal of this set of analyses was to examine patterns of factor loadings among pairings of vignettes. Vignette pairings with at least one item score evidencing a below acceptable factor loading $\leq |.35|$ (e.g., Bandalos, 2018) were removed from subsequent consideration. Parallel analysis (Horn, 1965), using O'Connor's (2000) syntax, indicated that one factor should be retained for each of the examined pairings of vignettes. Discarded vignette pairings due to low factor loadings are presented in Table A.4.

As part of the EFA, goodness-of-fit was evaluated in addition to the magnitude of factor loadings. Maximum Likelihood was the estimator that was used. One combination of items (i.e., Disgust 2, Fear 2, Anxiety 2, Shame 2, Anger 2, and Sadness 2) revealed a significant difference between observed and expected value ($\chi^2_{(9)} = 27.427\ p < .001$) and did not provide a good fit to the data in terms of factor analytic findings; therefore, it was eliminated from consideration.

Internal consistency was another criterion that was considered. In this study, acceptable internal consistency was defined as $\alpha \geq .70$ (McMillan & Schumacher, 2001).

Vignette pairings with an internal consistency rating below .70 were removed from consideration. Discarded vignette pairings due to low internal consistency are presented in Table A.5.

While realism scores were assessed and examined during Study 1, they were not a major factor in determining retention of BERQ items. Most of the realism scores hovered in the moderate range (i.e., scores ranged from 25.42-70.10, with the majority of scores hovering between 35 and 50). Moreover, all of the vignettes selected were within one *SD* of the average realism score. The average realism score was 43.18 and the average standard deviation was 14.93. Correlations between BERQ items and corresponding realism scores in Study 1 ranged from -.34 to .62, with the average correlation being .07. An average correlation of .07 suggests that realism scores are largely unrelated to BERQ scores. Among those items selected as the final BERQ items, realism was positively correlated with BERQ scores except for Anger. The average correlation between realism and the final BERQ items was .06, with the range spanning from -.17 to .43. Table A.6 represents a subset of acceptable item pairs that were tested (i.e., they did not meet any of the discard criteria outlined above).

Considering the above information, the following items performed the best relative to other considered pairings (presented in Table A.6) and were retained as the vignettes comprising the BERQ: Disgust 3, Fear 3, Anxiety 3, Shame 1, Anger 4, Sadness 4. Descriptive statistics for retained BERQ items are presented in Tables A.7 and A.8. Factor loadings for these items are presented in Table A.9 and inter-item correlations are presented in Table A.10. Reliability and goodness-of-fit analyses were run on the retained BERQ items, which revealed acceptable internal consistency ($\alpha = .74$) and no

significant difference between observed and expected value ($\chi^2(9) = 8.99$, $p = .44$) from the EFA.

Discussion

The purpose of Study 1 was to develop a final set of BERQ items for further examination. To determine a final set of items to further investigate, the following considerations were examined: items with factor loadings $\geq |.35|$ (e.g., Bandalos, 2018), inter-item correlations within acceptable ranges (generally defined as between .15-.50; Clark & Watson, 1995), acceptable internal consistency ($\alpha \geq .70$; McMillan & Schumacher, 2001), and acceptable goodness-of-fit from the EFA (i.e., no significant difference between observed and expected value). Based upon those considerations, the six vignette scores retained were: Disgust 3, Fear 3, Anxiety 3, Shame 1, Anger 4, Sadness 4. That pairing of scores led to factor loadings ranging from .49-.61 and comprising a single factor solution, inter-item correlations ranging from .24-.42, acceptable internal consistency ($\alpha = .74$), and no significant difference between observed and expected value ($\chi^2(9) = 8.99$, $p = .44$) from the EFA.

Given that Study 1 supported a preliminary set of items, the purpose of Study 2 was to further evaluate the retained set of items in order to provide initial psychometric properties of the BERQ. Examined psychometric properties for Study 2 include internal consistency, test-retest reliability, convergent validity, discriminant validity, concurrent validity, and incremental concurrent validity. Based on the results of Study 1, it was predicted that internal consistency would fall in the acceptable range ($\alpha \geq .70$; McMillan & Schumacher, 2001). Following from Arntz et al.'s (1995) findings, it was predicted that test-retest reliability would be adequate with a correlation coefficient of near .75 at

between around 2 weeks. While the exact time frame varied, the average length of time between completion of Study 2A and Study 2B was approximately 13 days. With respect to convergent validity, it was predicted that the BERQ would be positively and significantly correlated with anxiety-based reasoning, negative emotionality, and anxiety sensitivity. With respect to discriminant validity, it was predicted that the BERQ would not be significantly correlated with open-mindedness. With respect to concurrent validity, it was predicted that the BERQ would be positively and significantly correlated with cognitive and somatic symptoms of anxiety and distress intolerance. As a means of displaying incremental concurrent validity, it was predicted that the total BERQ score would account for unique variance in distress intolerance and cognitive and somatic symptoms of anxiety beyond anxiety-based reasoning and negative emotionality. As described more fully below, an experimental approach was used to examine associations with distress tolerance. In that approach, distress tolerance was operationalized as the desire to no longer experience negative emotions following an emotionally evocative or neutral video clip.

These examined analyses would offer support for scores on the BERQ in several ways, including supporting: (a) the BERQ items reflecting the same underlying construct (i.e., emotional reasoning); (b) the stability of BERQ scores across time points; (c) the BERQ scores correlating more strongly with similar than dissimilar measures; and (d) the BERQ scores relating to criterion variables of interest (i.e., trait anxiety, distress intolerance). Finding support for those aspects of the BERQ scores will provide initial validation of this measure as a potentially promising tool for assessing individual differences in emotional reasoning.

CHAPTER FOUR

Study 2

Study 2A: Method

Participants

A total of 373 eligible undergraduate students from Baylor University participated

in the current study. Participants who had previously participated in Study 1 were not

eligible to participate in Study 2A because they had already completed the initial BERQ.

Specifically, their re-completion of the measure would have potentially contaminated

responses to the final item pool. Of the 373 students who completed the consent form,

five students did not complete additional items and were removed from analyses. The

mean age was 19.1 years ($SD = 1.48$) and participants identified as white (57.9%), Asian

(15.8%), Hispanic/Latino (12.8%), black (6.3%), bi-racial/multi-racial (6.0%), or other

(0.8%). Participants identified as female (74.1%) or male (25.9%).

Self-Report Measures

Baylor Emotional Reasoning Questionnaire (BERQ). Participants completed a

revised version of the BERQ. While the original BERQ stated that cost was defined as

the severity of the negative outcome, the revised BERQ stated that cost was defined as

the severity of the negative outcome or potential negative outcome associated with the

situation. This change was made to reduce confusion and enhance participant

understanding of the measure. Participants read the BERQ vignettes and used the same 0-

100 scale to assess the perceived cost of negative outcome for each scenario-based

vignette. BERQ item scores were calculated using an identical approach to that described in Study 1.

The Big Five Inventory-2 Short Form, Second Edition (BFI-2-S; Soto & John, 2017). The BFI-2-S is a 30-item measure of the Big 5 personality domains (labeled extraversion, agreeableness, conscientiousness, negative emotionality, and open-mindedness) and each item is rated on a 5-point scale ranging from 1 (disagree strongly) to 5 (agree strongly). Of interest in the present study are the negative emotionality and open-mindedness scales of the BFI-2, which both consist of six items. Soto and John (2017) found that the negative emotionality scale of the BFI-2-S correlated strongly with other measures of negative emotionality (rs ranging from .84-.93), while the open-mindedness scale of the BFI-2-S correlated strongly with other measures of open-mindedness (rs ranging from .73-.89).

State-Trait Inventory of Cognitive and Somatic Anxiety (STICSA; Ree, French, MacLeod, & Locke, 2008). The STICSA is a 21-item measure of anxiety severity separated into two parallel forms: a state version and a trait version. The two versions only differ in their temporal instructions. The trait version was of interest in this study and asks participants to rate "how often, in general, the statement is true of you" on a 4-point scale ranging from 1 (not at all) to 4 (very much so). The trait version of the STICSA correlates strongly (rs of .66 and .68) with other measures of anxiety symptom severity (Grös, Antony, Simms, & McCabe, 2007).

Anxiety Attitude and Belief Scale, Second Edition (AABS-2; Brown et al., 2014). The AABS-2 is a 33-item measure developed to address beliefs associated with anxiety

disorders. Items are rated using a 7-point scale ranging from 0 ("I don't believe this at all") to 100 ("I believe this completely"), with anchor points at 20%, 40%, 50%, 60%, and 80%. Of interest in this study was the Anxiety-Based Reasoning subscale of the AABS-2, which assesses the inference of danger based on the occurrence of anxiety. The AABS-2 scale has been found to share small-to-moderate correlations (rs = 0.27 and 0.30) with anxiety symptom severity measures (Brown et al., 2015).

The Short Scale Anxiety Sensitivity Index (SSASI; Zvolensky et al., 2018). The SSASI is a five-item measure of anxiety sensitivity. Items are rated using a 5-point scale ranging from very little to very much. The SSASI has been found to share moderate-to large correlations (rs = 0.59 and .96) with measures of negative affect and anxiety sensitivity respectively (Zvolensky et al., 2018).

Procedure

Participants were recruited from undergraduate psychology courses at Baylor University. In exchange for partial course credit toward a research participation requirement, participants completed several demographic questions and an online battery of the self-report measures described above. The study was accessible from any device with Internet access. Participants who completed this study were eligible to participate in a follow-up study (i.e., Study 2B) that was also completed online. All participants provided informed consent prior to completing the online session.

Data Analytic Strategy

Five participants (1.34% of total sample) with no responses were removed from analysis. One participant was removed because they provided no demographic information. Two participants were removed from analysis because they were missing nearly all of the data from several questionnaires. Little's Missing Completely at Random (MCAR) test was performed on the remainder of the data (N = 365) to determine if the pattern of missing values were at random. Little's MCAR Test was significant ($\chi^2_{(1080)}$ = 964.54, p = .04), suggesting that the pattern of missing values does depend on the data values. This outcome indicated that Expectation Maximization (EM) could not be used to replace missing values; therefore, listwise deletion was used to remove participants with missing values.

<center>

Study 2B: Method

</center>

Participants

A subset of 56 undergraduate students from Baylor University who participated in Study 2A participated in Study 2B. This subset of participants was representative of the broader group of Study 2A participants in terms of age ($t_{(418)}$ = -1.05, p = .29), sex ($\chi^2_{(1)}$ = .84, p = .36), and race ($\chi^2_{(6)}$ = 2.87, p = .83). One student chose not to disclose their age, sex, or race; therefore, this student is not included in the descriptive statistics. The mean age of the remaining participants was 19.3 years (SD = 1.17). Participants identified as white (60.7%), Asian (19.6%), Hispanic/Latino (8.9%), black (3.6%), bi-racial or multi-racial (3.6%), or other (1.8%). Participants identified as female (78.6%) or male (19.6%).

Self-Report Measures

   Baylor Emotional Reasoning Questionnaire (BERQ). Participants completed the

final version of the BERQ, which was the same version completed in study 2A.

Participants read the BERQ vignettes and used the same 0-100 scale to assess the

perceived cost of negative outcome for each scenario-based vignette. BERQ item scores

were calculated using an identical approach to that described in Study 1 and used in

Study 2A.

Video Clips

   Three video clips (i.e., one "disgust" video clip, one "sadness" video clip, one

"neutral" video clip) were selected for use in the current study. Disgust and sadness were

chosen as the target emotions because previous studies have primarily examined

emotional reasoning in response to fear and/or anxiety, therefore, the present study

sought to examine distinct negative emotions. Moreover, disgust and sadness produce

higher levels of emotional discreteness compared to anger and shame (Gross &

Levenson, 1995). These video clips were selected from a large database of emotion-

eliciting video clips developed by Schaefer, Nils, Sanchez, and Philippot (2010). In

Schaefer et al.'s study, undergraduate students were asked to rate their level of emotional

arousal and completed a measure assessing emotional discreteness while watching a

series of film clips. Results showed a significant interaction between film category and

emotional discreteness, indicating that participants' self-reported emotional state post

video watching differed based on the specific video clip they watched. These results also

suggest that the film clips selected in this study were shown to be discrete from one

another (e.g., video clip producing high levels of sadness did not also produce high levels

of anger). Video clips used in the present study had the highest level of emotional

discreteness in their categories when compared to other film clips watched. The mean

disgust score following the disgust video clip was larger than the mean disgust score

following the sadness and neutral video clips ($d = 2.86$ and $d = 3.76$), respectively.

Similarly, the mean sadness score following the sadness video clip was larger than the

mean sadness score following the disgust and neutral video clips ($d = 2.48$ and $d = 2.28$),

respectively.

Behavioral Tasks

   Willingness to Pay-Distress Intolerance (WTP-DI; McHugh, Hearon, Halperin, &

Otto, 2011). The WTP-DI assesses how much a respondent would be willing to pay to

avoid distress following the induction of that distressing state. Participants are asked to

write down the highest percentage of their monthly income they would be willing to pay

to be guaranteed to be free of this level of distress each month. The WTP-DI has been

found to show moderate-to-large correlations (rs $= .34$ and $.59$) with both behavioral and

self-report measures of distress intolerance (McHugh et al., 2011).

Procedure

   All students who participated in Study 2A were eligible to complete Study 2B, as

one of the aims of this study was to measure test-retest reliability of the BERQ. The study

was accessible from any device with Internet access. In exchange for partial course

credit toward a research participation requirement, participants were randomized to one

of three video conditions (i.e., disgust video condition ($n = 18$), sadness video condition

($n = 19$), or neutral video condition ($n = 19$). Immediately before and after watching their

assigned video clip, participants were asked to rate how much they are currently experiencing the following emotions and feelings: pride, relaxation, sadness, and disgust. After rating these emotions and feelings post video clip, participants were asked to complete the WTP-DI and subsequently rate their degree of confidence by answering the question, "How sure are you that you would pay this amount if we asked you to do so right now?" Finally, participants were asked to complete the BERQ. All participants provided informed consent prior to completing the online session. See Figure B.1 for more information about the procedure for Study 2B.

Data Analytic Strategy

One participant (1.75% of total sample) with no responses was removed from analysis. Three participants' responses for the "Willingness to Pay" item could not be interpreted, as their answers did not specify what percentage of their monthly income they would pay to be free of this level of distress each month. Due to the fact that participants were asked to write in their own response to this item, missing values could not be replaced. Thus, data from these three participants in response to the "Willingness to Pay Item" were not included in the relevant analyses (i.e., hierarchical multiple regressions including distress intolerance). No other data were missing. Data were analyzed using chi-square and correlations to examine associations, hierarchical multiple regression to examine predictive power, t-tests to look at between group differences, and ANOVAs to look at between and within group differences over time. Results will be presented in the next section.

Study 2A

The factorial validity of the revised BERQ item scores used in Study 2A was examined using a CFA approach. Models were tested using Mplus 7.4 (Muthen & Muthen, 1998-2015). While maximum likelihood (ML) assumes that the observed indicators follow a multivariate normal distribution, robust maximum likelihood (MLR) estimation is used in CFA models when this normality assumption is slightly or moderately violated (Li, 2016). Regarding the BERQ component scores, no scores were found to be skewed but two scores were found to be kurtotic (i.e., BERQ Anxiety; $K = 4.65$ and BERQ Sadness; $K = 2.09$). Based on these results, MLR was chosen as an estimator. The model was specified as a one-factor CFA model with one group, 362 observations, six dependent variables, and one continuous latent variable. Four of the most recommended (Brown, 2015; Hu and Bentler, 1999) fit indices were used to evaluate the models: the comparative fit index (CFI), the non-normed fit index (NNFI), the root mean square error of approximation (RMSEA), and the standard root mean square residual (SRMR). I used the guidelines of Hu and Bentler (1999) which state that the CFI and NNFI should be close to .95, the RMSEA should be close to .06, and the SRMR should be close to .08 to indicate an adequate fit. Data from my model indicate that the comparative fit index (CFI) is 0.98, the root mean square error of approximation (RMSEA) is 0.03, the non-normed fit index (NNFI) is 0.97, and the standard root mean square residual (SRMR) is 0.03. These values indicate a good fit between the model and the observed data. The chi-square value associated with this model was not significant ($\chi^2_{(9)} = 11.96$, $p = .22$), which adds support for a good fit between the model and observed

data. Factor loadings from this model were found to be acceptable (e.g., $\geq \lvert 0.35 \rvert$;

Bandalos, 2018) and are presented in Table A.11.

Descriptive statistics for all measures in Study 2A are presented in Table A.12.

Reliability analyses were run on the item scores making up the BERQ total scale, which

revealed internal consistency below expected levels ($\alpha = .67$). Inter-item correlations

among BERQ items (at the component level) fell predominantly in the acceptable range

(between .15 and .50, Clark & Watson, 1995), with one exception: Disgust and Anxiety

(.10). Inter-item correlations for BERQ items are presented in Table A.13.

The BERQ total score did not reveal any significant positive or negative

correlations with previously established measures of negative emotionality, anxiety-based

reasoning, open-mindedness, anxiety sensitivity, or cognitive and somatic symptoms of

anxiety. These correlations are presented in Table A.14. These findings were inconsistent

with study predictions, which stated that the BERQ total score would be positively

correlated with previously established measures of negative emotionality, anxiety-based

reasoning, anxiety sensitivity, and cognitive and somatic symptoms of anxiety, and would

not be significantly correlated with a previously established measure of open-

mindedness.

A hierarchical multiple regression was run to determine if the addition of

emotional reasoning (i.e., BERQ total score) to the regression model improved the

prediction of cognitive and somatic symptoms of anxiety over and above the variables

negative emotionality (i.e., BFI-2-S Negative Emotionality subscale) and anxiety-based

reasoning (i.e., Anxiety-Based Reasoning subscale of AABS-2) alone. See Table A.15 for

full details on this regression model. In Model 1, negative emotionality and anxiety-based

reasoning were both significantly associated with STICSA score. The addition of emotional reasoning to the prediction of cognitive and somatic symptoms of anxiety in Model 2 led to a statistically significant increase in R^2. The full model of negative emotionality, anxiety-based reasoning, and emotional reasoning (portrayed as Model 2) to predict cognitive and somatic symptoms of anxiety was statistically significant. In Model 2, negative emotionality, anxiety-based reasoning, and emotional reasoning were significantly associated with STICSA score. These results can best be explained by a suppression effect, which is defined as a predictor that has a zero correlation with the dependent variable while still, paradoxically, contributing to the predictive validity of the measure. In this example, while there is not a significant correlation between the BERQ and the STICSA, the BERQ's addition to the model is significant and suggests that higher BERQ scores are associated with lower levels of cognitive/somatic symptoms of anxiety. Two supplemental regression analyses were run to identify the specific variable that was contributing to the suppression effect. Both included the BERQ in Block 1, with the first analysis including the negative emotionality score in Block 2 while the other analysis included the anxiety-based reasoning score in Block 2. Results from these analyses suggested that negative emotionality is the specific variable contributing to the suppression effect.

Study 2B

There were no statistically significant differences in age ($F_{(2,52)} = .19$, $p = .83$), sex ($\chi^2_{(2)} = 5.08$, $p = .08$), or race ($\chi^2_{(10)} = 8.49$, $p = .58$) between participants in the three video conditions. Descriptive statistics for age, sex, and race for each video condition are presented in Table A.16, Table A.17, and Table A.18.

A one-way ANOVA was conducted to determine if study participants rated their current experience of four distinct emotions (i.e., pride, relaxation, sadness, and disgust) differently prior to watching their assigned video clip. There were no significant differences between experiencing current emotions of pride, $F_{(2,53)} = 2.703$, $p = .08$, relaxation, $F_{(2,53)} = 1.061$, $p = .35$, sadness, $F_{(2,53)} = 1.907$, $p = .16$, and disgust, $F_{(2,52)} = 2.616$, $p = .08$, among the three groups prior to participants' watching their assigned video clip.

As a manipulation check, sadness was expected to increase at a higher rate post video clip for individuals in the sadness condition compared to participants in the neutral and disgust conditions. A repeated-measures ANOVA was run to assess the aforementioned assertion. Results supported this hypothesis and revealed a statistically significant group x time interaction between video condition and time on sadness intensity ($F_{(2,53)} = 15.38$, $p < .001$, $d = 1.53$). This interaction indicates that the impact that time has on sadness intensity depends on video condition. More specifically, sadness scores for the sadness group significantly increased from pre to post video clip watching (*Mean* Pre = 25.69; *SD* = 28.66; *Mean* Post = 55.53; *SD* = 31.43); ($F_{(1,18)} = 15.59$, $p = .001$). These results represented a large increase in sadness from pre- to post- film clip (*d* = 0.99). Sadness scores for the disgust group significantly decreased from pre to post video clip watching (*Mean* Pre = 30.5; *SD* = 23.66; *Mean* Post = 10.22; *SD* = 19.52); ($F_{(1,17)} = 7.57$, $p = .014$). These results represented a large decrease in sadness from pre- to post- film clip (*d* = 0.94). In contrast, there was no significant change in sadness scores for the neutral group ($F_{(1,18)} = 4.34$, $p = .052$).

As a second manipulation check, disgust was expected to increase at a higher rate post video clip for individuals in the disgust condition compared to participants in the sadness and neutral conditions. A repeated-measures ANOVA was run to assess the aforementioned assertion. Results supported this hypothesis and revealed a statistically significant group x time interaction between video condition and time on disgust intensity ($F_{(2,52)} = 32.88$, $p < .001$, $d = 2.26$). This interaction indicates that the impact that time has on disgust intensity depends on video condition. More specifically, disgust scores for the disgust group significantly increased from pre to post video clip watching (*Mean* Pre = 13.06; *Mean* Post = 80.56; *SD* = 30.01); ($F(1,17) = 66.19$, $p < .001$). These results represented a large increase in disgust from pre- to post- film clip ($d = 2.59$). While disgust scores for the sadness group (*Mean* Pre = 4.06; *Mean* Post = 13.53; *SD* = 19.52) and the neutral group (*Mean* Pre = 18.94; *Mean* Post = 29.00; *SD* = 33.90) significantly increased ($F_{(1,18)} = 5.81$, $p = .027$ and $F_{(1,18)} = 6.56$, $p = .020$ respectively) from pre- to post- film clip watching, the increase in disgust in the disgust condition was greater than the increase in disgust in the sadness or neutral conditions. This result is supported by an examination of effect sizes. While the increase in disgust from pre to post video clip in the disgust condition represented a large increase ($d = 2.59$), the increases in the sadness and neutral conditions were medium and small respectively ($d = 0.61$; $d = 0.33$). Overall, these results suggest that the video clips selected for the "sadness" and "disgust" conditions performed effectively, as they significantly increased participants' experience of the target emotion from pre to post video clip.

While no video clip in the study was specifically designed to alter participants' experience of pride and relaxation, it is important to examine how these emotions

changed in the sadness and disgust conditions relative to the neutral condition. A repeated-measures ANOVA was run to assess whether participants' experience of pride changed differently over time across the three video conditions. Results revealed a statistically significant group x time interaction between video condition and time on pride intensity ($F_{(2,53)}$ = 7.09, p = .002, d = 1.03). This interaction indicates that the impact that time has on pride intensity depends on video condition. Pride scores for the disgust group (*Mean* Pre = 46.55; *Mean* Post = 7.61; *SD* = 11.94); ($F_{(1,17)}$ = 27.85, p < .001) and the sadness group (*Mean* Pre = 29.21; *Mean* Post = 16.00; *SD* = 23.07); ($F_{(1,18)}$ = 10.03, p = .005) significantly decreased from pre to post video clip watching. These results represented a large and medium decrease in pride from pre- to post- film clip (d = 1.63 and d = 0.52 respectively). Pride scores for the neutral group (*Mean* Pre = 49.95; *Mean* Post = 37.32; *SD* = 32.04); ($F_{(1,18)}$ = 6.56, p = .020) also significantly decreased from pre to post video clip watching. These results represented a small decrease in pride from pre- to post- film clip (d = 0.41). Post hoc analysis was performed with a Tukey HSD test. Decrease in pride was not statistically significantly greater in the disgust condition (*Mean* = 27.08, *SE* = 5.65) compared to the neutral condition (*Mean* = 43.63, *SE* = 5.50), p = .12, but was statistically significantly greater in the sadness condition (*Mean* = 22.61, *SE* = 5.50) compared to the neutral condition (*Mean* = 43.63, *SE* = 5.50), p = .03.

Rate of change in relaxation did not differ from pre to post video clip watching based on group ($F_{(2,53)}$ = 2.88, p = .07). However, there were significant differences in participants' experience of relaxation across the three groups after watching the assigned video clip ($F_{(2,53)}$ = 8.358, p = .001, d = 1.12). Participants in the neutral group exhibited

the highest level of relaxation (*Mean* = 41.63; *SD* = 32.43), followed by participants in the sadness group (*Mean* = 26.84; *SD* = 24.00), followed by participants in the disgust group (*Mean* = 8.89; *SD* = 11.30).

BERQ scores did not differ from pre (i.e., approximately two weeks prior to video clip watching) to post video clip watching based on group ($F_{(2,53)}$ = .26, p = .77) and were pooled for certain analyses such as test-retest reliability. Results are presented in Table A.19. The BERQ displayed adequate test-retest reliability (r = .73; p < .001) between completion of Study 2A and 2B (i.e., approximately two weeks).

A hierarchical multiple regression analysis was run to assess the statistical significance of the interaction terms between video condition (i.e., disgust video condition, sadness video condition) and BERQ total score. Dummy coding was used to turn the moderator variable (video condition) into a series of dichotomous variables (variables that can have a value of zero or one only), with the neutral video condition acting as the control group. This analysis sought to determine whether introducing these moderating variables changed the direction or magnitude of the relationship between BERQ total score and emotional intensity post video clip. The first multiple regression analysis specifically examined disgust intensity post video clip. The hierarchical multiple regression analysis included two blocks, with Block 1 featuring the covariates and main effects, and Block 2 featuring the covariates, main effects, and interaction terms. While the interaction terms (i.e., disgust video condition x BERQ total and sadness video condition x BERQ total), collectively, evidenced a statistically significant increase in total variation explained of 5.7%, ($F_{(2,50)}$ = 3.38, p = .04), neither of the interaction terms by themselves were significantly associated with the criterion. Because the interaction

terms were not significant, block 1 was interpreted at the main effect level. In that block, the disgust video condition was significantly associated with greater disgust intensity post video clip when compared to the neutral video condition. Results are presented in Table A.20.

A second hierarchical multiple regression analysis was also run to assess the statistical significance of the interaction terms between video condition (i.e., disgust video condition, sadness video condition) and BERQ total score. As stated previously, dummy coding was used to turn the moderator variable (video condition) into a series of dichotomous variables (variables that can have a value of zero or one only). This analysis sought to determine whether introducing these moderating variables changed the direction or magnitude of the relationship between BERQ total score and sadness intensity post video clip. As with the previous analysis, this analysis included two blocks, with Block 1 featuring the covariates and main effects, and Block 2 featuring the covariates, main effects, and interaction terms. Disgust video condition and sadness video condition did not moderate the effect of emotional reasoning on sadness intensity post video clip, as evidenced by an increase in total variation explained of 5.0%, which was not statistically significant. Because the interaction terms were not significant, block 1 was interpreted at the main effect level. Block 1, which incorporated sadness, disgust, and BERQ score to predict sadness intensity post video clip, was statistically significant ($F_{(3,52)} = 8.82$, $p < .001$). In this block, both video conditions (but not emotional reasoning) were significantly associated with sadness intensity post video clip. These results suggest that the disgust video condition, but not level of emotional reasoning, predicted lower scores on sadness intensity post video clip compared to the neutral video

condition. In addition, these results suggest that the sadness video condition, but not level of emotional reasoning, predicted higher scores on sadness intensity post video clip compared to the neutral video condition. Results are presented in Table A.21.

A hierarchical regression model, used to examine incremental concurrent validity, was run to determine if the addition of emotional reasoning (i.e., BERQ total score) to the regression model improved the prediction of distress intolerance over and above the variables negative emotionality (i.e., BFI-2-S Negative Emotionality subscale) and anxiety-based reasoning (i.e., Anxiety-Based Reasoning subscale of AABS-2) alone. As stated previously, dummy coding was used to turn the moderator variable (video condition) into a series of dichotomous variables (variables that can have a value of zero or one only). Model 1 included negative emotionality and anxiety-based reasoning as predictors of distress tolerance and Model 2 added emotional reasoning, disgust video condition, sadness video condition, and the two interaction terms between video conditions and BERQ total score. It is important to account for the influence of group, as distress intolerance was not expected to be particularly relevant in the neutral video condition. The full model of negative emotionality, anxiety-based reasoning, emotional reasoning, disgust video condition, sadness video condition, and interaction terms to predict distress intolerance was not statistically significant. In Model 1, anxiety-based reasoning was significantly associated with distress intolerance. This main effect was no longer present in Model 2. The addition of emotional reasoning and video condition to the prediction of distress intolerance did not lead to a statistically significant increase in R^2. Results are presented in Table A.22.

Discussion

The purpose of Study 2 was to provide initial psychometric properties for the BERQ. Examined psychometric properties included factorial validity, internal consistency, test-retest reliability, convergent validity, discriminant validity, concurrent validity, and incremental concurrent validity. Regarding factorial validity, results indicated a good fit between the model and the observed data. Study 2 suggested that the factorial structure of the BERQ was well accounted for by a single factor model of emotional reasoning.

Internal consistency was determined to be below expected levels ($\alpha = .67$), suggesting that the BERQ items were not correlating well with each other. These results were in contrast to Study 1, which revealed acceptable internal consistency ($\alpha = .74$). Inter-item correlations in Study 1 for the retained BERQ indicators ranged from .24-.42, while inter-item correlations in Study 2 for the same BERQ indicators ranged from .10-.40. One example of a weakly correlated item pair from Study 2 was Anxiety and Disgust ($r = .10$). Test-retest reliability was found to be in the adequate range ($r = .73; p < .001$), indicating students' responses on the BERQ were similar across two distinct time points that occurred approximately two weeks apart.

The BERQ evidenced no convergent or concurrent validity with previously established measures of negative emotionality, anxiety-based reasoning, anxiety sensitivity, or cognitive and somatic symptoms of anxiety. In addition, the BERQ did not display divergent validity with a previously established measure of open-mindedness. These findings were inconsistent with study predictions. With regards to incremental concurrent validity, the BERQ did account for unique variance in cognitive and somatic

symptoms of anxiety; however, as mentioned previously, the direction of the effect was opposite from that which was hypothesized. The BERQ did not account for unique variance in distress intolerance beyond anxiety-based reasoning and negative emotionality.

CHAPTER FIVE

General Discussion

The purpose of the present studies was to develop and provide initial validation of the Baylor Emotional Reasoning Questionnaire (BERQ). The BERQ was developed to address noted limitations of existing measures of emotional reasoning, including content linked to only a narrow-band of negative emotions, disorder-specific focus, and lack of standardization across studies. An item pool was developed that consisted of four scenarios for each of six negative emotions (fear, anxiety, disgust, shame, anger, and sadness). For each of the six negative emotions included in the BERQ, sixteen vignettes were generated (following Artnz et al., 1995). Therefore, participants completed a total of 96 vignettes as part of the original BERQ. The vignettes were created using two sources: (a) scenario-based approach popularized by Arntz et al. (1995) and subsequently used by several researchers examining emotional reasoning in the context of anxiety disorders (e.g., Lommen et al., 2013; Verwoerd et al., 2013; Verwoerd et al., 2016); and (b) Linehan's (2015) "Emotion Regulation Worksheets," taken from her DBT Skills Training Manual, Second Edition. Study 1 ($N = 340$) examined the distribution of item scores and an exploratory factor analysis (EFA) was used to identify areas for item pool reduction. The number of BERQ items in Study 1 (96 items) was reduced prior to Study 2 (24 items) to shorten the amount of time needed to complete the BERQ to 10-15 minutes.

Study 2 used a final version of the BERQ (following Study 1 findings) to provide initial psychometric properties of the BERQ, including factorial validity, internal

consistency, test-retest reliability, convergent validity, discriminant validity, concurrent validity, and incremental concurrent validity. Aside from a reduction in the overall number of BERQ items, the final BERQ also included minor instructional changes. In both the original BERQ used in Study 1 and the final BERQ used in Studies 2A and 2B, participants were asked to evaluate the cost of negative outcome. Participants in Study 1 were told that cost was defined as the severity of the negative outcome. In contrast, participants in Study 2A and 2B were told that cost was defined as the severity of the negative outcome or potential negative outcome associated with the situation. This change was made to reduce confusion and enhance participant understanding of the measure. Study 2 participants ($N = 368$) completed measures assessing emotional reasoning, negative emotionality, open-mindedness, cognitive and somatic symptoms of anxiety, anxiety-based reasoning, and anxiety sensitivity. A subset of Study 2 participants ($N = 56$) chose to participate in an additional study session where they completed the BERQ a second time (to assess test-retest reliability), watched a short video clip, and completed a measure of distress intolerance (to determine if emotional reasoning accounts for unique variance in this construct).

Factorial Validity

Results from the exploratory factor analysis in Study 1 suggested that one factor should be retained for each of the examined pairings of vignettes. Vignette pairings with poor inter-item correlations (e.g., $< .15$ or $> .50$; Clark & Watson, 1995), low factor loadings (e.g., $\leq |.35|$; Bandalos, 2018), poor data fit, and low internal consistency (e.g., $\alpha < .70$; McMillan & Schumacher, 2001) were discarded. Items that performed best compared to other considered pairings were retained as the vignettes comprising the

BERQ. Results from the confirmatory factor analysis in Study 2 indicated support for the hypothesized one-factor model of emotional reasoning among the final item pool and revealed that the data were represented appropriately by this model. The factorial validity analyses suggest that the item scores of the final BERQ are a representative measure of the same construct (i.e., emotional reasoning). Factor loadings from this model were found to be acceptable ($\leq |.35|$; e.g., Bandalos, 2018), which suggests that each BERQ indicator had at least an adequate association to the underlying latent variable. While emotional reasoning is a construct that has been looked at most often in conjunction with anxiety (as well as disgust and sadness to a lesser degree), factorial validity results from this study indicate that emotional reasoning in relation to other emotions (i.e., shame, anger, fear) may be part of the same overall trait rather than representing separate dimensions of this construct.

Skewness and Kurtosis

The BERQ total score was found to be kurtotic, which suggests that the data has a larger number of outliers than would be assumed by a normal distribution. This result suggests that, if used in practice, the BERQ may return extreme scores (both high and low) which exceed those expected in a normal distribution. The outlying scores may be due in part to the measure design. Participants were asked to select their answers on a 0-100 scale, which affords the opportunity for more variability in responses (compared to forced-choice measures). For example, one participant may interpret a "60/100" as costly, while another may interpret an "80/100" as costly. These subjective differences make varied interpretations, and therefore outliers, common. In addition, the questions may have been too difficult to answer due to their wording. While Studies 2A and 2B tried to

57

reduce confusion by altering word choice in the BERQ instructions, it is possible that the phrasing "severity of the negative outcome or potential negative outcome" was ambiguous.

Internal Consistency

Internal consistency measures whether several items (or indicators) that propose to measure the same general construct produce similar scores. Internal consistency for the BERQ differed between Study 1 and Study 2, with Study 1 revealing acceptable internal consistency between BERQ items ($\alpha = .74$) and Study 2 revealing internal consistency below expected levels ($\alpha = .67$) between BERQ items. The measure administered across the two studies differed, with the original BERQ in Study 1 comprising 96 vignettes and the revised BERQ in Study 2 comprising 24 vignettes. It is important to note that, despite the difference in the number of vignettes across studies, the internal consistency estimates from Study 1 were from the same subset of items used in Study 2. Inter-item correlations among BERQ items (at the component level) fell predominantly in the acceptable range in both Study 1 and Study 2 (between .15 and .50, Clark & Watson, 1995), with one exception for Study 2: Disgust and Anxiety (.10). Item pairs appeared to function differently across studies, which may suggest that participants in Study 1 and Study 2 differed in their interpretation of BERQ items. However, examining the confidence intervals for Cronbach's alphas for Study 1 (95% CI, $.69 < \alpha < .78$) and Study 2 (95% CI, $.61 < \alpha < .72$) suggests that the differences in internal consistency between studies may not be particularly robust.

Test-Retest Reliability

The BERQ displayed acceptable test-retest reliability ($r = .73$; $p < .001$) between completion of Study 2A and 2B (i.e., approximately two weeks). This result suggests that, when given the revised BERQ on two distinct occasions approximately two weeks apart, participants obtained similar scores. Adequate test-retest reliability indicates that the measurement of emotional reasoning is representative and stable over time with the potential for slight fluctuation. Findings from the present study were similar to Arntz et al.'s (1995) findings, which displayed good test-retest reliability ($r > .75$) over a two-week period.

Consistent with suggestions by other researchers that emotional reasoning may be a trait-like tendency (Arntz et al., 1995; Berle & Moulds, 2013), it is likely that this construct has strong rank-order stability across time. Rank-order stability refers to the stability of the relative positions of individuals on a characteristic (e.g., emotional reasoning) over time. Rank-order stability is high if people in a group maintain their position on a trait relative to each other over time, even if the group as a whole increases or decreases on that trait over time. The notion that emotional reasoning may have high rank-order stability has potentially important clinical implications. For example, it is likely that individuals with high levels of emotional reasoning will continue to score highly on this trait relative to other individuals. Therefore, researchers may use measures of emotional reasoning as a tool to help raise awareness about where an individual's placement is on this trait rather than capture significant change over time.

What is important to note is that BERQ scores did not differ from pre to post video clip watching based on video condition. It was important to examine BERQ scores

in the context of video condition because, if emotional reasoning differed based on group, there would be a potential threat to test-retest reliability and other analyses (e.g., incremental concurrent validity).

<p align="center">*Convergent, Divergent, and Incremental Validity*</p>

The BERQ total score did not reveal any significant positive or negative correlations with previously established measures of negative emotionality, anxiety-based reasoning, open-mindedness, anxiety sensitivity, or cognitive and somatic symptoms of anxiety. These findings were inconsistent with study predictions, which stated that the BERQ total score would be positively correlated with previously established measures of negative emotionality, anxiety-based reasoning, anxiety sensitivity, and cognitive and somatic symptoms of anxiety, and would not be significantly correlated with a previously established measure of open-mindedness. Supplemental analyses indicated that examining only the low cost item scores of the BERQ produced an identical pattern of results. Emotional reasoning did predict unique variance in cognitive and somatic symptoms of anxiety over and above negative emotionality and anxiety-based reasoning. As stated previously, these results can best be explained by a suppression effect, which is defined as a predictor that has a zero correlation with the dependent variable while still, paradoxically, contributing to the predictive validity of the measure. Specifically, when removing shared variance with negative emotionality and anxiety-based reasoning, the BERQ scores appear to be capturing something unique. Results from supplemental analyses suggest that negative emotionality is the specific variable contributing to the suppression effect. Once accounting for the propensity to experience negative emotion, the tendency to view emotions as costly seems to relate to less anxiety. Perhaps scoring

<p align="center">60</p>

high on emotional reasoning across a host of other negative emotions (i.e., sadness, anger, shame) reduces an individual's level of trait anxiety because it increases cognitive and emotional awareness of several negative emotions rather than focusing all cognitive and emotional awareness on anxiety and fear. Emotional awareness alludes to an individual's ability to identify the emotions they are experiencing at any given time (Smith et al., 2018). It is adaptive because it enables individuals to better understand the feelings they are having and how those feelings may be influencing their behaviors, which leads to less emotional reactivity and avoidance (Hill & Updegraff, 2012). It would make sense that individuals are more aware of their emotions if they are using them frequently to assess cost. Therefore, the higher the emotional awareness, the less anxiety overall.

It is important to mention that, in analyses run for Study 2B, attention was devoted to exploring the relation between video condition and the BERQ on post-video clip emotional intensity. As stated previously, while the interaction terms (i.e., disgust video condition x BERQ total and sadness video condition x BERQ total) collectively did moderate the effect of emotional reasoning on disgust intensity, the individual interaction terms did not significantly differ from zero. In addition, emotional reasoning, video condition, and the interaction term did not predict unique variance in distress intolerance over and above the variables negative emotionality and anxiety-based reasoning. Specifically, only anxiety-based reasoning (in Model 1) accounted for unique variance in distress intolerance. The incremental concurrent validity of the BERQ was not supported.

Results from the present study suggest that the BERQ may not be an adequate assessment measure for the construct of emotional reasoning. When compared to the

Anxiety-Based Reasoning Subscale of the AABS-2, which assesses the inference of

danger based on the occurrence of anxiety, the BERQ displayed no correlation. While

this finding did not support the hypothesis that the BERQ would correlate with the

AABS-2 scale, it is important to consider that the BERQ was developed to measure

emotional reasoning across a spectrum of emotions rather than solely examining anxiety-

based reasoning. Similarly, the BERQ did not correlate with anxiety sensitivity or

cognitive/somatic symptoms of anxiety, as the AABS-2 scale had. This study did not

compare the BERQ to other vignette-based measures of emotional reasoning (Arntz et al.,

1995; Berle & Moulds, 2013; Verwoerd et al., 2013; Verwoerd et al., 2016). It is

important to point out that the scenario-based measures put forth by the aforementioned

authors may be measuring a different construct than that assessed by the AABS-2

subscale. For example, the scenario-based measures appear to be assessing participants'

perception of dangerousness, uncontrollability, anxiety, and positive or negative outcome

in a variety of personalized situations, while the AABS-2 subscale asks participants to

rate their belief in four broad statements. In addition, the AABS-2 subscale directly

measures individuals' perception of what it means to experience anxiety (i.e., it means

something is wrong), while the scenario-based measures assess negative outcomes with

and without emotion information rather than ask about the meaning of emotions directly.

Future studies should directly compare the BERQ to the scenario-based approach utilized

in successful previous studies (e.g., Arntz, 1995; Berle & Moulds, 2013; Verwoerd et al.,

2013; Verwoerd et al., 2016).

Limitations

The above discussion should be considered with study limitations in mind. First, this study included a college student sample. College students were selected because they are a group of individuals particularly affected by anxiety disorders; however, this study did not assess whether participants were currently or had previously been diagnosed with an anxiety disorder. While this study focused on college students due to them being a particularly vulnerable group of individuals, it is important to understand that they are not a population representative of the general public because of their limited age range and high level of education. This study sample influenced the development of the BERQ because the vignettes were written using situations that are likely to be particularly salient to young adults (i.e., "You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends…") but not as salient to other populations (i.e., adolescent samples, geriatric samples). In addition, this study did not formally assess saliency (i.e., ease of imagining). Future studies should assess this construct as it is distinct from realism and would provide important information regarding how effectively participants can envision themselves in the BERQ scenarios.

The final BERQ had several limitations that are important to discuss. First, there was a high degree of variability in participants' responses. Response options on the BERQ ranged from 1 to 100, with participants having the opportunity to select any number between these anchors as an item response. While initially this variability was conceptualized as a strength of the measure (to provide participants with more response choices), it contributed to a larger number of data outliers than would be assumed by a

normal distribution. It may be beneficial for a future version of the BERQ to include a forced-choice response, in which each answer choice had a clear label that helped to better explain the ranking scale (e.g., 60/100 = "very costly;" 80/100 = "extremely costly"). In addition, while Studies 2A and 2B tried to reduce confusion by altering word choice in the BERQ instructions, it is possible that the phrasing "severity of the negative outcome or potential negative outcome" was ambiguous. Part of this ambiguity may have resulted from the fact that some BERQ scenarios presented situations in which there was already a negative outcome, while others described situations where there was a potential negative outcome. In a future version of the BERQ, vignettes should be adapted to fit either the "negative outcome" situations or the "potential negative outcome" situations. This change would likely result in clarified wording for the dependent variable (i.e., "What is the likelihood that there will be a negative outcome?" or "How bad is this negative outcome?"), which would streamline item responses and result in fewer outliers. Another important limitation to discuss relates to the self-report measures the BERQ was compared to. While the BERQ is broadly applicable in nature, the previously validated self-report measures compared to the BERQ in this study are primarily focused on anxiety (i.e., STICSA, SSASI, AABS-2). The decision to compare the BERQ to these anxiety-specific measures may have impacted the association by focusing on one emotion examined in the BERQ rather than comparing it to broader measures of negative emotionality. In addition, Study 2B did not include an anxiety manipulation. Future studies should include both a video clip that induces anxiety, as well as broader measures of negative emotionality, in order to better speak to the construct validity of the BERQ.

Other important limitations to consider are the sample compositions in regard to gender, race, and sample size. Women and white individuals were overrepresented in all three studies while men and people of color (in particular, black, bi-racial, and multi-racial) were underrepresented. These limitations have important implications, as men and people of color assign different meaning to their emotions when compared to women and white individuals respectively (Chaplin, 2015; Grosland & Matias, 2017). Therefore, it is possible that study outcomes could have looked largely different if conducted with a more diverse sample. In addition, while Study 1 and Study 2A had large sample sizes, the sample size for Study 2B was much smaller. This is particularly important to note as participants for Study 2B were split into three distinct video conditions, leaving each group with only 17-19 individuals. Small sample sizes decrease statistical power and generalizability of results.

With these study limitations in mind, the present results suggest that the BERQ warrants further examination with modifications. As previously stated, the BERQ had several significant limitations that, if remedied, may produce different results in regard to convergent, divergent, and concurrent validity. After making the previously mentioned changes to the BERQ, future studies comparing a revised BERQ to other vignette-based measures of emotional reasoning (Arntz et al., 1995; Berle & Moulds, 2013; Verwoerd et al., 2013; Verwoerd et al., 2016) would help clarify whether the BERQ is, in fact, measuring emotional reasoning.

APPENDICES

APPENDIX A

Tables

Table A.1

Descriptive Statistics for All BERQ Items: Cost

BERQ Item	*M (SD)*	S	K
Low objective cost/ no disgust (Vig. 1)	19.88 (22.24)	1.12	.41
Low objective cost/disgust (Vig. 1)	32.29 (23.47)	.54	-.52
High objective cost/ no disgust (Vig. 1)	34.56 (23.72)	.51	-.24
High objective cost/ disgust (Vig. 1)	42.98 (24.28)	.17	-.74
Low objective cost/ no disgust (Vig. 2)	24.93 (22.90)	.97	.23
Low objective cost/disgust (Vig. 2)	44.44 (21.71)	.17	-.69
High objective cost/ no disgust (Vig. 2)	33.03 (22.70)	.60	-.24
High objective cost/ disgust (Vig. 2)	47.20 (21.08)	.26	-.45
Low objective cost/ no disgust (Vig. 3)	26.43 (23.44)	.86	.01
Low objective cost/disgust (Vig. 3)	42.99 (24.61)	.15	-.75
High objective cost/ no disgust (Vig. 3)	48.73 (26.40)	.10	-.88
High objective cost/ disgust (Vig. 3)	55.93 (22.41)	-.23	-.52
Low objective cost/ no disgust (Vig. 4)	41.66 (24.62)	.38	-.45
Low objective cost/disgust (Vig. 4)	51.74 (23.17)	.07	-.66
High objective cost/ no disgust (Vig. 4)	44.89 (23.93)	.22	-.64
High objective cost/ disgust (Vig. 4)	51.79 (23.43)	.08	-.58
Low objective cost/no fear (Vig. 1)	33.26 (23.31)	.71	.04

(Continued)

67

BERQ Item	M (SD)	S	K
Low objective cost/fear(Vig. 1)	51.34 (23.52)	-.02	-.62
High objective cost/ no fear (Vig. 1)	48.92 (25.79)	.07	-.73
High objective cost/fear (Vig. 1)	61.69 (23.76)	-.32	-.56
Low objective cost/no fear (Vig. 2)	30.90 (25.02)	.76	-.22
Low objective cost/fear (Vig. 2)	51.37 (23.50)	-.04	-.51
High objective cost/no fear (Vig. 2)	41.44 (25.86)	.30	-.61
High objective cost/fear (Vig. 2)	61.97 (22.29)	-.34	-.47
Low objective cost/ no fear (Vig. 3)	26.47 (24.01)	.84	-.08
Low objective cost/fear (Vig. 3)	52.25 (23.97)	-.09	-.73
High objective cost/ no fear(Vig. 3)	53.62 (25.76)	-.12	-.73
High objective cost/ fear (Vig. 3)	66.75 (23.87)	-.54	-.49
Low objective cost/ no fear (Vig. 4)	30.76 (25.05)	.72	-.38
Low objective cost/fear(Vig. 4)	48.81 (25.23)	-.13	-.77
High objective cost/ no fear (Vig. 4)	45.19 (24.59)	.15	-.64
High objective cost/ fear (Vig. 4)	59.83 (23.29)	-.41	-.33
Low objective cost/ no anxiety (Vig. 1)	20.85 (23.54)	1.17	.50
Low objective cost/anxiety (Vig. 1)	40.92 (26.11)	.15	-.89
High objective cost/ no anxiety (Vig. 1)	48.47 (25.00)	-.08	-.70
High objective cost/ anxiety (Vig. 1)	59.29 (22.83)	-.45	-.35
Low objective cost/ no anxiety (Vig. 2)	30.56 (22.05)	.49	-.45
Low objective cost/anxiety (Vig. 2)	45.40 (21.09)	.07	-.47
High objective cost/no anxiety (Vig. 2)	48.29 (24.40)	.01	-.66
High objective cost/anxiety (Vig. 2)	59.69 (21.60)	-.42	-.39
Low objective cost/ no anxiety(Vig. 3)	28.78 (22.37)	.65	-.30
Low objective cost/anxiety(Vig. 3)	43.80 (22.91)	.22	-.63
High objective cost/ no anxiety(Vig. 3)	37.36 (24.22)	.38	-.59

BERQ Item	*M (SD)*	S	K
High objective cost/ anxiety (Vig. 3)	50.45 (22.83)	.04	-.74
Low objective cost/ no anxiety (Vig. 4)	20.50 (24.71)	1.19	.54
Low objective cost/anxiety (Vig. 4)	39.20 (21.34)	.33	-.47
High objective cost/ no anxiety(Vig. 4)	37.70 (22.67)	.34	-.37
High objective cost/ anxiety (Vig. 4)	51.22 (21.71)	-.15	-.46
Low objective cost/ no shame (Vig. 1)	31.96 (24.06)	.67	-.08
Low objective cost/shame (Vig. 1)	53.33 (22.10)	.05	-.44
High objective cost/ no shame (Vig. 1)	45.49 (22.53)	.03	-.46
High objective cost/ shame (Vig. 1)	58.27 (22.76)	-.21	-.64
Low objective cost/ no shame (Vig. 2)	25.29 (23.86)	.89	.04
Low objective cost/shame (Vig. 2)	43.11 (23.36)	.16	-.57
High objective cost/no shame (Vig. 2)	47.43 (23.52)	-.02	-.67
High objective cost/shame (Vig. 2)	59.07 (23.00)	-.27	-.61
Low objective cost/ no shame (Vig. 3)	33.35 (22.20)	.35	-.75
Low objective cost/shame (Vig. 3)	48.68 (22.20)	.07	-.47
High objective cost/ no shame (Vig. 3)	51.68 (24.90)	-.04	-.83
High objective cost/ shame (Vig. 3)	60.37 (24.33)	-.39	-.59
Low objective cost/ no shame (Vig. 4)	28.38 (22.40)	.64	-.31
Low objective cost/shame (Vig. 4)	37.48 (23.39)	.47	-.43
High objective cost/ no shame (Vig. 4)	50.94 (23.78)	.02	-.66
Low objective cost/ no anger (Vig. 1)	41.43 (22.32)	.27	-.58
Low objective cost/anger (Vig. 1)	55.21 (22.44)	-.11	-.70
High objective cost/ no anger (Vig. 1)	48.60 (22.40)	.04	-.52
High objective cost/ anger (Vig. 1)	57.96 (20.91)	-.30	-.42
Low objective cost/ no anger (Vig. 2)	36.19 (22.57)	.49	-.42
Low objective cost/anger (Vig. 2)	48.73 (23.05)	-.01	-.59

(Continued)

BERQ Item	M (SD)	S	K
High objective cost/no anger (Vig. 2)	58.05 (24.32)	-.31	-.61
High objective cost/anger (Vig. 2)	64.55 (21.14)	-.40	-.42
Low objective cost/anger (Vig. 3)	45.06 (22.02)	.05	-.38
High objective cost/ no anger(Vig. 3)	57.48 (24.55)	-.33	-.67
High objective cost/ anger (Vig. 3)	61.00 (22.69)	-.39	-.62
Low objective cost/ no anger (Vig. 4)	44.18 (24.40)	.21	-.68
Low objective cost/anger (Vig. 4)	51.46 (22.77)	.02	-.54
High objective cost/ no anger (Vig. 4)		-.18	-.56
High objective cost/ anger (Vig. 4)	60.06 (23.23)	-.42	-.35
Low objective cost/ no sadness (Vig. 1)	38.20 (23.76)	.33	-.63
Low objective cost/sadness (Vig. 1)	49.21 (22.72)	.14	-.52
High objective cost/ no sadness (Vig. 1)	55.59 (23.30)	-.24	-.62
High objective cost/ sadness (Vig. 1)	61.46 (23.76)	-.44	-.50
Low objective cost/ no sadness (Vig. 2)	46.80 (25.92)	.26	-.65
Low objective cost/sadness (Vig. 2)	57.41 (23.47)	-.20	-.54
High objective cost/no sadness (Vig. 2)	60.85 (24.65)	-.37	-.54
High objective cost/sadness (Vig. 2)	67.62 (23.24)	-.66	-.18
Low objective cost/ no sadness (Vig. 3)	48.62 (27.30)	.01	-.89
Low objective cost/sadness(Vig. 3)	60.52 (24.84)	-.40	-.59
High objective cost/ no sadness (Vig. 3)	53.75 (27.26)	-.12	-.84
High objective cost/ sadness (Vig. 3)	67.26 (25.14)	-.60	-.39
Low objective cost/ no sadness (Vig. 4)	31.79 (22.94)	.71	-.11
Low objective cost/sadness (Vig. 4)	41.80 (22.68)	.22	-.58
High objective cost/ no sadness(Vig. 4)	43.11 (23.30)	.18	-.51
High objective cost/ sadness (Vig. 4)	53.49 (24.46)	-.16	-.76

Note. N = 340.

Table A.2

Descriptive Statistics for All BERQ Items: Realism

BERQ Item	*M (SD)*	S	K
Low objective cost/ no disgust (Vig. 1)	26.55(24.47)	.88	.11
Low objective cost/disgust (Vig. 1)	52.63 (26.24)	-.03	-.66
High objective cost/ no disgust (Vig. 1)	43.85 (23.10)	.04	-.39
High objective cost/ disgust (Vig. 1)	45.89 (23.36)	.13	-.39
Low objective cost/ no disgust (Vig. 2)	30.91 (21.30)	.49	-.06
Low objective cost/disgust (Vig. 2)	41.54 (22.20)	.33	-.29
High objective cost/ no disgust (Vig. 2)	42.18 (22.51)	.34	-.21
High objective cost/ disgust (Vig. 2)	41.80 (21.20)	.43	.07
Low objective cost/ no disgust (Vig. 3)	38.92 (24.93)	.39	-.33
Low objective cost/disgust (Vig. 3)	55.10 (23.62)	-.20	-.35
High objective cost/ no disgust (Vig. 3)	51.01 (22.87)	-.02	-.50
High objective cost/ disgust (Vig. 3)	47.88 (22.60)	.01	-.35
Low objective cost/ no disgust (Vig. 4)	46.52 (22.21)	.16	-.10
Low objective cost/disgust (Vig. 4)	45.26 (21.39)	.06	.07
High objective cost/ no disgust (Vig. 4)	46.65 (21.82)	.04	-.18
High objective cost/ disgust (Vig. 4)	43.89 (20.16)	.03	-.07
Low objective cost/ no fear (Vig. 1)	34.43 (21.32)	.44	-.08
Low objective cost/fear(Vig. 1)	45.94 (19.77)	.09	.05
High objective cost/ no fear (Vig. 1)	44.74 (21.31)	.28	.09
High objective cost/ fear (Vig. 1)	44.69 (20.75)	.10	.18
Low objective cost/ no fear (Vig. 2)	68.76 (25.23)	-.76	-.15
Low objective cost/fear (Vig. 2)	47.31 (22.00)	.22	-.16
High objective cost/no fear (Vig. 2)	70.10 (27.01)	-.74	-.33

(Continued)

BERQ Item	*M (SD)*	S	K
High objective cost/fear (Vig. 2)	48.37 (22.12)	.04	-.43
Low objective cost/ no fear (Vig. 3)	32.85 (21.67)	.42	.05
Low objective cost/fear (Vig. 3)	44.73 (21.98)	.21	-.14
High objective cost/ no fear(Vig. 3)	43.89 (22.30)	.03	-.21
High objective cost/ fear (Vig. 3)	38.63 (21.09)	.27	-.15
Low objective cost/ no fear (Vig. 4)	39.43 (22.07)	.34	-.23
Low objective cost/fear(Vig. 4)	53.26 (24.18)	-.17	-.40
High objective cost/ no fear (Vig. 4)	36.33 (22.22)	.31	-.46
High objective cost/ fear (Vig. 4)	40.79 (22.28)	.24	-.27
Low objective cost/ no anxiety (Vig. 1)	25.42 (22.04)	.74	.00
Low objective cost/anxiety (Vig. 1)	49.20 (26.94)	.12	-.82
High objective cost/ no anxiety (Vig. 1)	43.44 (23.47)	.12	-.44
High objective cost/ anxiety (Vig. 1)	37.00 (20.63)	.57	.52
Low objective cost/ no anxiety (Vig. 2)	38.02 (21.45)	.60	.31
Low objective cost/anxiety (Vig. 2)	42.07 (21.01)	.23	-.23
High objective cost/no anxiety (Vig. 2)	43.20 (16.67)	.14	-.01
High objective cost/anxiety (Vig. 2)	37.56 (19.48)	.48	.80
Low objective cost/ no anxiety(Vig. 3)	43.72 (23.01)	.14	-.36
Low objective cost/anxiety(Vig. 3)	39.41 (21.31)	.25	-.13
High objective cost/ no anxiety(Vig. 3)	48.69 (22.74)	.05	-.39
High objective cost/ anxiety (Vig. 3)	45.10 (21.51)	.04	-.39
Low objective cost/ no anxiety (Vig. 4)	30.16 (22.39)	.73	.32
Low objective cost/anxiety(Vig. 4)	37.60 (22.09)	.51	.09
High objective cost/ no anxiety(Vig. 4)	45.13 (21.86)	.15	-.23
High objective cost/ anxiety (Vig. 4)	39.20 (20.58)	.34	.08

(Continued)

BERQ Item	M (SD)	S	K
Low objective cost/ no shame (Vig. 1)	40.20 (23.65)	.43	-.20
Low objective cost/shame (Vig. 1)	46.69 (22.66)	.16	-.15
High objective cost/ no shame (Vig. 1)	49.44 (23.10)	.11	-.24
High objective cost/ shame (Vig. 1)	46.16 (22.81)	.21	-.18
Low objective cost/ no shame (Vig. 2)	36.07 (22.14)	.28	-.39
Low objective cost/shame (Vig. 2)	51.78 (22.95)	-.10	-.34
High objective cost/no shame (Vig. 2)	57.26 (22.70)	-.15	-.51
High objective cost/shame (Vig. 2)	41.88 (21.94)	.23	-.32
Low objective cost/ no shame (Vig. 3)	42.62 (22.04)	.15	-.27
Low objective cost/shame (Vig. 3)	43.16 (21.27)	.22	-.07
High objective cost/ no shame (Vig. 3)	53.48 (21.77)	-.09	-.19
High objective cost/ shame (Vig. 3)	42.87 (22.11)	.29	-.29
Low objective cost/ no shame (Vig. 4)	39.45 (21.51)	.16	-.26
Low objective cost/shame (Vig. 4)	54.88 (22.75)	-.14	-.30
High objective cost/ no shame (Vig. 4)	46.66 (20.06)	.10	.40
High objective cost/ shame (Vig. 4)	48.86 (22.17)	-.01	-.22
Low objective cost/ no anger (Vig. 1)	42.68 (20.69)	.28	.10
Low objective cost/anger (Vig. 1)	42.75 (21.94)	.19	-.28
High objective cost/ no anger (Vig. 1)	44.34 (21.48)	.28	-.16
High objective cost/ anger (Vig. 1)	41.51 (21.19)	.16	-.05
Low objective cost/ no anger (Vig. 2)	44.80 (20.69)	.21	-.05
Low objective cost/anger (Vig. 2)	50.17 (23.53)	.02	-.42
High objective cost/no anger (Vig. 2)	50.22 (25.04)	.23	-.58
High objective cost/anger (Vig. 2)	37.69 (21.13)	.28	-.26

(Continued)

BERQ Item	M (SD)	S	K
Low objective cost/ no anger (Vig. 3)	40.71 (21.81)	.33	.12
Low objective cost/anger (Vig. 3)	53.36 (23.89)	-.05	-.44
High objective cost/ no anger(Vig. 3)	39.90 (22.34)	.27	-.10
High objective cost/ anger (Vig. 3)	44.32 (22.46)	.20	-.34
Low objective cost/ no anger (Vig. 4)	42.70 (22.07)	.23	-.36
Low objective cost/anger (Vig. 4)	46.16 (23.45)	.09	-.51
High objective cost/ no anger (Vig. 4)	44.29 (23.15)	.19	-.26
High objective cost/ anger (Vig. 4)	41.68 (23.18)	.26	-.40
Low objective cost/ no sadness (Vig. 1)	33.57 (22.88)	.60	-.03
Low objective cost/sadness (Vig. 1)	36.90 (21.19)	.48	-.17
High objective cost/ no sadness (Vig. 1)	43.43 (25.53)	.13	-.76
High objective cost/ sadness (Vig. 1)	37.43 (22.85)	.49	.02
Low objective cost/ no sadness (Vig. 2)	42.88 (21.78)	.29	-.01
Low objective cost/sadness (Vig. 2)	43.27 (21.53)	.16	-.11
High objective cost/no sadness (Vig. 2)	42.29 (22.19)	.28	-.26
High objective cost/sadness (Vig. 2)	36.09 (20.74)	.46	.10
Low objective cost/ no sadness (Vig. 3)	31.47 (21.09)	.67	.28
Low objective cost/sadness(Vig. 3)	33.67 (22.52)	.55	.01
High objective cost/ no sadness (Vig. 3)	34.99 (22.12)	.53	-.10
High objective cost/ sadness (Vig. 3)	30.43 (22.10)	.67	-.01
Low objective cost/ no sadness (Vig. 4)	37.91 (22.32)	.51	.07
Low objective cost/sadness (Vig. 4)	50.80 (24.19)	.05	-.47
High objective cost/ no sadness(Vig. 4)	41.62 (22.59)	.24	-.02
High objective cost/ sadness (Vig. 4)	40.16 (22.13)	.32	-.11

Note. N = 340.

Table A.3

Item Combinations Discarded Due to Inter-Item Correlations <.15 or >.50

Item Combinations
Disgust 2, Fear 3, Anxiety 3, Shame 3, Anger 3, Sadness 3
Disgust 1, Fear 2, Anxiety 3, Shame 3, Anger 3, Sadness 3
Disgust 1, Fear 3, Anxiety 3, Shame 3, Anger 3, Sadness 3
Disgust 2, Fear 1, Anxiety 1, Shame 1, Anger 1, Sadness 1
Disgust 1, Fear 2, Anxiety 2, Shame 2, Anger 1, Sadness 2
Disgust 1, Fear 2, Anxiety 2, Shame 2, Anger 1, Sadness 1
Disgust 1, Fear 2, Anxiety 2, Shame 1, Anger 1, Sadness 1
Disgust 1, Fear 2, Anxiety 1, Shame 1, Anger 1, Sadness 1
Disgust 4, Fear 4, Anxiety 4, Shame 4, Anger 4, Sadness 4
Disgust 3, Fear 3, Anxiety 3, Shame 3, Anger 3, Sadness 3
Disgust 1, Fear 1, Anxiety 1, Shame 1, Anger 1, Sadness 1
Disgust 4, Fear 4, Anxiety 3, Shame 3, Anger 1, Sadness 1
Disgust 4, Fear 3, Anxiety 2, Shame 1, Anger 4, Sadness 3
Disgust 4, Fear 4, Anxiety 4, Shame 4, Anger 4, Sadness 3
Disgust 4, Fear 4, Anxiety 4, Shame 4, Anger 3, Sadness 3
Disgust 4, Fear 4, Anxiety 4, Shame 3, Anger 3, Sadness 3
Disgust 4, Fear 4, Anxiety 3, Shame 3, Anger 3, Sadness 3
Disgust 4, Fear 3, Anxiety 3, Shame 3, Anger 3, Sadness 3
Disgust 3, Fear 2, Anxiety 2, Shame 2, Anger 2, Sadness 2
Disgust 2, Fear 1, Anxiety 3, Shame 2, Anger 4, Sadness 2

Note. $N = 340$.

Table A.4

Item Combinations Discarded Due to Factor Loadings < |.35|

Item Combinations
Disgust 1, Fear 1, Anxiety 1, Shame 1, Anger 1, Sadness 1
Disgust 4, Fear 4, Anxiety 3, Shame 3, Anger 3, Sadness 3

Note. N = 340.

Table A.5

Item Combinations Discarded Due to Due *to Internal Consistency ≤ .70*

Item Combinations
Disgust 2, Fear 3, Anxiety 1, Shame 1, Anger 1, Sadness 1
Disgust 2, Fear 3, Anxiety 4, Shame 4, Anger 4, Sadness 4
Disgust 4, Fear 4, Anxiety 3, Shame 3, Anger 2, Sadness 2
Disgust 3, Fear 3, Anxiety 2, Shame 2, Anger 2, Sadness 2
Disgust 3, Fear 3, Anxiety 3, Shame 3, Anger 2, Sadness 2
Disgust 1, Fear 3, Anxiety 4, Shame 3, Anger 1, Sadness 3

Note. N = 340.

Table A.6

Subset of Examined Item Combinations from BERQ

Item Numbers	Range of Inter-Item Correlations	Range of Factor Loadings	Internal Consistency
Disgust 2, Fear 2, Anxiety 3, Shame 2, Anger 4, Sadness 2	.15 - .41	.45 - .74	.70
Disgust 2, Fear 3, Anxiety 3, Shame 2, Anger 4, Sadness 2	.15 - .40	.49 - .73	.70
Disgust 2, Fear 4, Anxiety 3, Shame 2, Anger 4, Sadness 2	.15 - .40	.50 - .72	.70
Disgust 2, Fear 1, Anxiety 3, Shame 2, Anger 4, Sadness 3	.27 - .42	.55 - .74	.72
Disgust 2, Fear 2, Anxiety 3, Shame 2, Anger 4, Sadness 3	.27 - .42	.58 - .75	.74
Disgust 2, Fear 3, Anxiety 3, Shame 2, Anger 4, Sadness 3	.27 - .42	.60 - .74	.74
Disgust 2, Fear 4, Anxiety 3, Shame 2, Anger 4, Sadness 3	.27 - .42	.63 - .73	.74
Disgust 3, Fear 4, Anxiety 3, Shame 2, Anger 4, Sadness 3	.30 - .42	.58 - .71	.73
Disgust 4, Fear 4, Anxiety 3, Shame 2, Anger 4, Sadness 3	.25 - .42	.55 - .70	.73

Note. $N = 340$.

Table A.7

Descriptive Statistics for Retained BERQ Items: Cost

Item	Mean	SD
Disgust 3	23.75	40.84
Fear 3	38.90	45.73
Anxiety 3	28.11	40.31
Shame 1	34.15	45.36
Anger 4	13.50	42.02
Sadness 4	20.39	38.02

Note. $N = 340$.

Table A.8

Descriptive Statistics for Retained BERQ Items: Realism

Item	Mean	SD
Disgust 3	48.23	14.26
Fear 3	40.03	14.95
Anxiety 3	44.23	15.23
Shame 1	45.62	16.51
Anger 4	43.71	15.53
Sadness 4	42.62	15.71

Note. $N = 340$.

Table A.9

Factor Loadings for Retained BERQ Items: Study 1

BERQ Item	Factor Loading
Disgust 3	.55
Fear 3	.55
Anxiety 3	.61
Shame 1	.64
Anger 4	.49
Sadness 4	.57

Note. N = 340.

Table A.10

Inter-Item Correlation Matrix for Retained BERQ Items: Study 1

Item	Disgust 3	Anxiety 3	Shame 1	Anger 4	Sadness 4	Fear 3
Disgust 3	-					
Anxiety 3	.30**	-				
Shame 1	.36**	.42**	-			
Anger 4	.25**	.32**	.30**	-		
Sadness 4	.31**	.32**	.36**	.31**	-	
Fear 3	.36**	.34**	.31**	.24**	.33**	-

Note. N = 340. * $p < .05$, ** $p < .001$

Table A.11

Factor Loadings for BERQ Items: Study 2

BERQ Item	Factor Loading
Disgust	.35
Fear	.56
Anxiety	.42
Shame	.66
Anger	.42
Sadness	.60

Note. $N = 361$.

Table A.12

Descriptive Statistics for All Measures: Study 2

Measure	*Mean (SD)*	Skew	Kurtosis
BFI-2-S Negative Emotionality	17.57 (5.49)	-.01	-.56
BFI-2-S Open-Mindedness	22.47 (4.14)	-.29	-.35
SSASI Total	9.27 (4.06)	1.27	1.20
Anxiety-Based Reasoning	120.63 (81.63)	.57	-.14
STICSA Total	39.57 (10.78)	.73	.39
BERQ Total	170.06 (164.76)	-.18	4.52

Note. $N = 361$.

Table A.13

Inter-Item Correlation Matrix for BERQ Items: Study 2

Item	Disgust	Fear	Anxiety	Shame	Anger	Sadness
Disgust	-					
Fear	.24**	-				
Anxiety	.10*	.22**	-			
Shame	.19**	.36**	.33**	-		
Anger	.24**	.21**	.21**	.27**	-	
Sadness	.19**	.36**	.18**	.40**	.27**	-

Note. $N = 361$. * $p < .05$, ** $p < .001$

Table A.14

Correlation Table: Study 2

Self-Report Measure	BFI-2 Negative Emotion	BFI-2 Open Mindedness	SSASI Total	Anxiety-Based Reasoning	STICSA Total	BERQ Total
BFI-2 Negative Emotion	-					
BFI-2 Open Mindedness	-.10	-				
SSASI Total	.37**	-.10	-			
Anxiety-Based Reasoning	-.07	-.17**	.16**	-		
STICSA Total	.59**	-.12*	.54**	.10*	-	
BERQ Total	.04	-.02	-.01	-.06	-.07	-

Note. $N = 361$. * $p < .05$, ** $p < .001$

Table A.15

Hierarchical Multiple Regression Predicting STICSA Score from Negative Emotionality, Anxiety-Based Reasoning, and Emotional Reasoning

Variable	Model 1		Model 2	
	B	β	B	β
Anxiety Based Reasoning	0.02**	0.15	0.02**	0.15
Negative Emotionality	1.18**	0.61	1.19**	0.61
Emotional Reasoning			-0.01*	-0.09
R^2	0.38		0.39	
F	108.95**		75.01**	
ΔR^2	0.38		0.01	
ΔF	108.95**		4.80*	
p (for ΔR^2)	<.001**		0.03*	

*Note. N = 361. * p <.05, ** p < .001*

Table A.16

Descriptive Statistics for Three Video Conditions: Age

Video Condition	*Mean*	*SD*
Disgust ($N = 17$)	19.41	1.23
Sadness ($N = 19$)	19.21	1.23
Neutral ($N = 19$)	19.42	1.12

Table A.17

Descriptive Statistics for Three Video Conditions: Sex

Video Condition	Sex	Frequency	Percent
Disgust	Male	6	33.3
($N = 17$)	Female	11	61.1
Sadness	Male	1	5.3
($N = 19$)	Female	18	94.7
Neutral	Male	4	21.1
($N = 19$)	Female	15	78.9

Table A.18

Descriptive Statistics for Three Video Conditions: Race

Video Condition	Race	Frequency	Percent
Disgust (*N* = 17*)*	Asian	5	27.8
	Black	1	5.6
	Hispanic	3	16.7
	White	8	44.4
	Bi/Multi-Racial	0	0
	Other	0	0
Sadness (*N* = 19*)*	Asian	4	21.1
	Black	1	5.3
	Hispanic	1	5.3
	White	12	63.2
	Bi/Multi-Racial	1	5.3
	Other	0	0
Neutral (*N* = 19*)*	Asian	2	10.5
	Black	0	0
	Hispanic	1	5.3
	White	14	73.7
	Bi/Multi-Racial	1	5.3
	Other	1	5.3

Table A.19

Group Differences in BERQ Scores

Video Condition	Mean BERQ Score Pre Video Clip	Mean BERQ Score Post Video Clip
Disgust ($N = 18$)	134.33	159.89
Sadness ($N = 19$)	176.90	182.53
Neutral ($N = 19$)	113.21	195.84

Note. $N = 56$. * $p <.05$, ** $p < .001$

Table A.20

Hierarchical Multiple Regression: Effect of Moderating Variable (Video Condition) on Relationship between BERQ Total Score and Disgust Intensity post Video Clip

	Model 1		Model 2	
Variable	B	β	B	β
Emotional Reasoning	0.02	0.08	0.03	0.12
Disgust Video Condition	52.37**	0.62	45.28*	0.53
Sadness Video Condition	-15.17	-0.18	8.19	0.10
Interaction Term (Disgust)			0.05	0.14
Interaction Term (Sadness)			-0.13	-0.35
R^2	0.52		0.58	
F	18.59**		13.52**	
ΔR^2	.52		.58	
ΔF	18.59**		3.38*	
p (for ΔR^2)	<.001		0.04	

Note. $N = 56$. * $p <.05$, ** $p < .001$. Dummy coding used: Comparison group = neutral video condition.

Table A.21

Hierarchical Multiple Regression: Effect of Moderating Variable (Video Condition) on Relationship between BERQ Total Score and Sadness Intensity post Video Clip

Variable	Model 1		Model 2	
	B	β	B	β
Emotional Reasoning	0.002	0.01	0.04	0.18
Disgust Video Condition	-21.98*	-.32	-4.93	-.07
Sadness Video Condition	23.29*	.35	22.66	.34
Interaction Term (Disgust)			-.10	-.36
Interaction Term (Sadness)			.01	.02
R^2	0.34		0.39	
F	8.82**		6.33**	
ΔR^2	.34		.05	
ΔF	8.82**		2.06	
p (for ΔR^2)	<.001		0.14	

Note. $N = 56$. * $p < .05$, ** $p < .001$. Dummy coding used: Comparison group = neutral video condition.
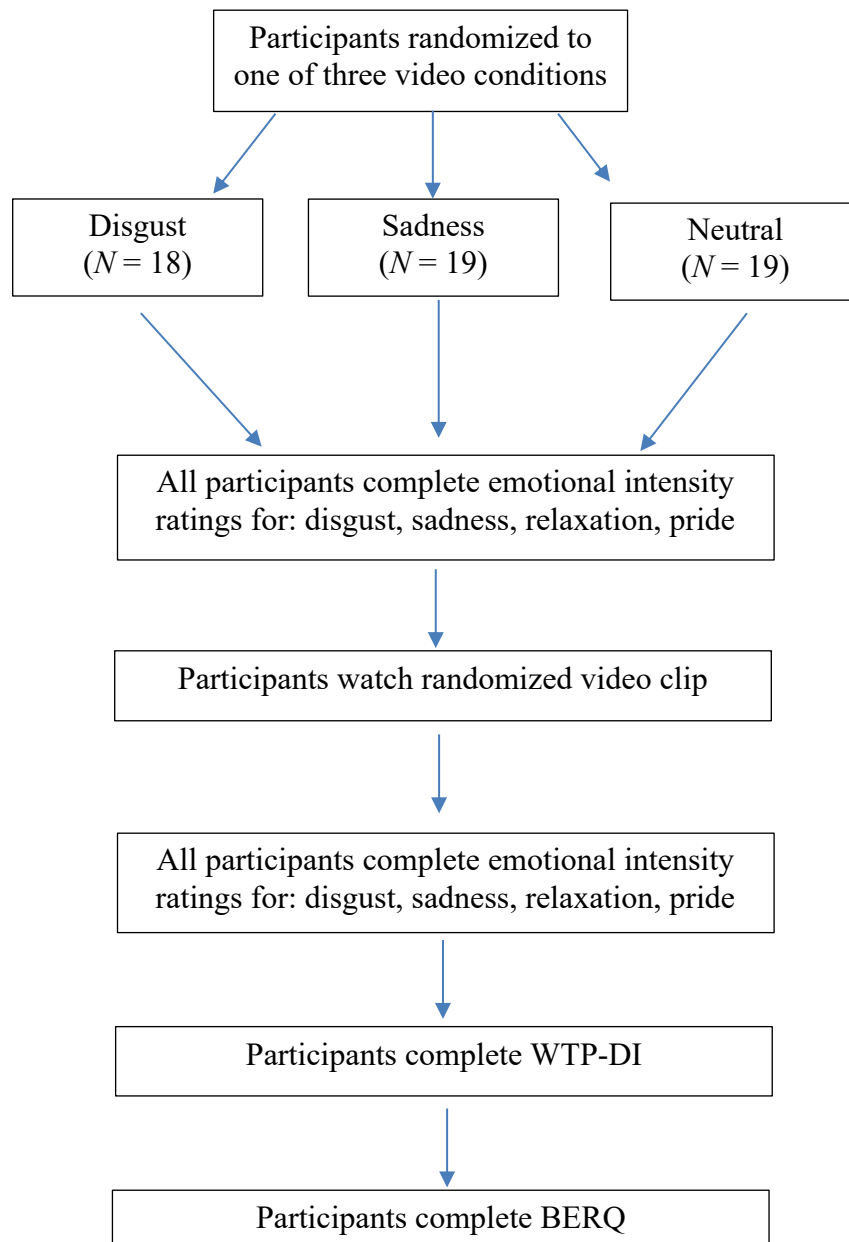
Table A.22

Hierarchical Multiple Regression Predicting Distress Intolerance from Negative Emotionality, Anxiety-Based Reasoning, Emotional Reasoning, and Video Condition

Variable	Model 1		Model 2	
	B	β	B	β
Anxiety Based Reasoning	0.07*	0.29	0.07	0.29
Negative Emotionality	0.05	0.02	0.39	0.12
Emotional Reasoning			-0.04	-0.30
Disgust Video Condition			-7.90	-.19
Sadness Video Condition			-13.17	-.32
Interaction Term (Disgust)			-.004	-.02
Interaction Term (Sadness)			.04	.24
R^2	0.08		0.18	
F	2.17		1.39	
ΔR^2	0.08		0.10	
ΔF	2.17		1.07	
p (for ΔR^2)	0.13		0.39	

Note. $N = 53$. * $p < .05$, ** $p < .001$. Dummy coding used: Comparison group = neutral video condition.

APPENDIX B

Figures

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            ┌─────────────────────────────┐
            │  Participants randomized to  │
            │ one of three video conditions │
            └─────────────────────────────┘
              ↙           ↓           ↘
   ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
   │   Disgust    │ │   Sadness    │ │   Neutral    │
   │  (N = 18)    │ │  (N = 19)    │ │  (N = 19)    │
   └──────────────┘ └──────────────┘ └──────────────┘
              ↘           ↓           ↙
   ┌─────────────────────────────────────────────────┐
   │ All participants complete emotional intensity     │
   │ ratings for: disgust, sadness, relaxation, pride  │
   └─────────────────────────────────────────────────┘
                          ↓
   ┌─────────────────────────────────────────────────┐
   │     Participants watch randomized video clip      │
   └─────────────────────────────────────────────────┘
                          ↓
   ┌─────────────────────────────────────────────────┐
   │ All participants complete emotional intensity     │
   │ ratings for: disgust, sadness, relaxation, pride  │
   └─────────────────────────────────────────────────┘
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   ┌─────────────────────────────────────────────────┐
   │          Participants complete WTP-DI             │
   └─────────────────────────────────────────────────┘
                          ↓
   ┌─────────────────────────────────────────────────┐
   │          Participants complete BERQ              │
   └─────────────────────────────────────────────────┘
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Figure B.1 Procedure for Study 2B

Measures

Baylor Emotion Reasoning Questionnaire (BERQ) – Initial Version

Disgust: First Vignette

1. Low objective cost/no disgust:

Upon leaving work, you walk toward the parking lot to get your car. You are listening to music and unwinding from your busy day. As you walk into the parking lot, your hands fumble in your bag to grab your keys, and you accidentally drop them on the ground. You pick up your keys and continue walking to your car.

2. Low objective cost/disgust:

Upon leaving work, you walk toward the parking lot to get your car. You are listening to music and unwinding from your busy day. As you walk into the parking lot, your hands fumble in your bag to grab your keys, and you accidentally drop them on the ground. When you pick up your keys, you feel repulsed and have the urge to wash your hands right away.

3. High objective cost/no disgust:

Upon leaving work, you walk toward the parking lot to get your car. You are listening to music and unwinding from your busy day. As you walk into the parking lot, you detect a strong smell of urine and notice the parking lot has not been cleaned in a while. Your hands fumble in your bag to grab your keys, and you accidentally drop them on the ground. You pick up your keys and continue walking to your car.

4. High objective cost/disgust:

Upon leaving work, you walk toward the parking lot to get your car. You are listening to music and unwinding from your busy day. As you walk into the parking lot, you detect a strong smell of urine and notice the parking lot has not been cleaned in a while. Your hands fumble in your bag to grab your keys, and you accidentally drop them on the ground. When you pick up your keys, you feel repulsed and have the urge to wash your hands right away.

Disgust: Second Vignette

    1. <u>Low objective cost/no disgust:</u>
You wake up early on a Sunday morning. You had a good rest. Because it is a sunny morning, you decide to go for a run in the local park. While you are running, you notice an odd feeling in your stomach, probably because you did not eat enough during breakfast. Fortunately, you are almost home. When you get back home, you decide to eat a banana.

    2. <u>Low objective cost/disgust:</u>
You wake up early on a Sunday morning. You had a good rest. Because it is a sunny morning, you decide to go for a run in the local park. While you are running, you notice an odd feeling in your stomach, probably because you did not eat enough during breakfast. Fortunately, you are almost home. When you get back home, you suddenly feel sick to your stomach and have the urge to vomit.

    3. <u>High objective cost/no disgust:</u>
You wake up early on a Sunday morning. You had a good rest. Because it is a sunny morning, you decide to go for a run in the local park. While you are running, you notice an odd feeling in your stomach, probably because you just realized that you used expired milk in your cereal this morning. Fortunately, you are almost home. When you get back home, you decide to eat a banana.

    4. <u>High objective cost/disgust:</u>
You wake up early on a Sunday morning. You had a good rest. Because it is a sunny morning, you decide to go for a run in the local park. While you are running, you notice an odd feeling in your stomach, probably because you just realized that you used expired milk in your cereal this morning. Fortunately, you are almost home. When you get back home, you suddenly feel sick to your stomach and have the urge to vomit.

Disgust: Third Vignette

    1. <u>Low objective cost/no disgust:</u>
You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down on the other side of the office from you and begins to read a magazine. You continue to read emails on your phone until the doctor calls your name.

    2. <u>Low objective cost/disgust:</u>
You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down on the

other side of the office from you and begins to read a magazine. You suddenly have the urge to gag and immediately wish you could take a shower.

3. High objective cost/no disgust:

You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down directly next to you, reaches out their hand, and immediately coughs loudly without covering their mouth. You continue to read emails on your phone until the doctor calls your name.

4. High objective cost/disgust:

You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down directly next to you, reaches out their hand, and immediately coughs loudly without covering their mouth. You suddenly have the urge to gag and immediately wish you could take a shower.

Disgust: Fourth Vignette

1. Low objective cost/no disgust:

You are at the pharmacy checking out and are about to head home. As you are pulling your wallet out to pay, the cashier accidentally sneezes on you as they are making small talk. You notice that they sprayed some mucus when they sneezed. You quickly wipe the mucus off your face, grab your bag, politely say good-bye, and leave the pharmacy.

2. Low objective cost/disgust:

You are at the pharmacy checking out and are about to head home. As you are pulling your wallet out to pay, the cashier accidentally sneezes on you as they are making small talk. You notice that they sprayed some mucus when they sneezed. You quickly wipe the mucus off your face and suddenly develop a lump in your throat. You want to change your clothes immediately and feel revolted by this gross person.

3. High objective cost/no disgust:

You are at the pharmacy checking out and are about to head home. The cashier appears to have a bad cold or the flu, as they are blowing their nose repeatedly and sneezing. As you are pulling your wallet out to pay, the cashier accidentally sneezes on you as they are making small talk. You notice that they sprayed some mucus when they sneezed. You quickly wipe the mucus off your face. You grab your bag, politely say good-bye, and leave the pharmacy.

4. High objective cost/disgust:

You are at the pharmacy checking out and are about to head home. The cashier appears to have a bad cold or the flu, as they are blowing their nose repeatedly and sneezing. As you are pulling your wallet out to pay, the cashier accidentally sneezes on you as they are making small talk. You notice that they sprayed some mucus when they sneezed. You quickly wipe the mucus off your face and suddenly develop a lump in your throat. You want to change your clothes immediately and feel revolted by this gross person.

Fear: First Vignette

1. Low objective cost/no fear:

You are walking towards your local grocery store to buy some groceries for the week. You start to notice that you feel hot and a little bit weak. You are not bothered by this and you remind yourself that it's a very hot day outside and you are probably slightly dehydrated.

2. Low objective cost/fear:

You are walking towards your local grocery store to buy some groceries for the week. You start to notice that you feel hot and a little bit weak. You suddenly feel tense and uneasy and notice that your heart is starting to beat very quickly.

3. High objective cost/no fear:

You are walking towards your local grocery store to buy some groceries for the week. You start to notice that you feel hot and suddenly feel a crushing pain in your chest and tingling in your arms. You are not bothered by this and you remind yourself that it's a very hot day outside and you are probably slightly dehydrated.

4. High objective cost/fear:

You are walking towards your local grocery store to buy some groceries for the week. You start to notice that you feel hot and suddenly feel a crushing pain in your chest and tingling in your arms. You suddenly feel tense and uneasy and notice that your heart is starting to beat very quickly.

Fear: Second Vignette

1. Low objective cost/no fear:

You are in the elevator in a large shopping mall, intending on taking it from the fifth to the first floor. Breathing is getting more difficult. The elevator is packed with the maximum number of people allowed. One of the passengers accidently falls into your arms. You smile. You have been romantically interested in this person for quite some time and this seems to be a good opportunity.

2. Low objective cost/fear:

You are in the elevator in a large shopping mall, intending on taking it from the fifth to the first floor. Breathing is getting more difficult. The elevator is packed with the

maximum number of people allowed. Suddenly your muscles begin to tense up and your heart starts pounding. You have the urge to run away but feel trapped.

3. <u>High objective cost/no fear:</u>

You are in the elevator in a large shopping mall, intending on taking it from the fifth to the first floor. Breathing is getting more difficult. The elevator is packed with the maximum number of people allowed. All of the sudden the elevator gets stuck between floors. The ventilator stops and the elevator won't budge. You see two people faint: one falls into your arms. You smile. You've been romantically interested in this person for quite some time and this seems to be a good opportunity.

4. <u>High objective cost/fear:</u>

You are in the elevator in a large shopping mall, intending on taking it from the fifth to the first floor. Breathing is getting more difficult. The elevator is packed with the maximum number of people allowed. All of the sudden the elevator gets stuck between floors. The ventilator stops and the elevator won't budge. You see two people faint. Suddenly your muscles begin to tense up and your heart starts pounding. You have the urge to run away but feel trapped.

Fear: Third Vignette

1. <u>Low objective cost/no fear:</u>

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. You see your apartment up ahead and walk up the front stairs.

2. <u>Low objective cost/fear:</u>

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. Suddenly you feel the hair on the back of your neck stand on its end and your stomach feels like it's in knots. You begin shaking and sweating.

3. <u>High objective cost/no fear:</u>

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. All of a sudden you see a large person cross the street and begin to move hurriedly toward you. You see your apartment up ahead and walk up the front stairs.

4. <u>High objective cost/fear:</u>

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. All of a sudden you see a large person cross the street and begin to move hurriedly toward you. Suddenly you feel

the hair on the back of your neck stand on its end and your stomach feels like it's in knots. You begin shaking and sweating.

Fear: Fourth Vignette

    1.   <u>Low objective cost/no fear:</u>
You wake up in the morning and see a missed call and voicemail from your parents from several hours prior. You wonder why your parents called you in the middle of the night. You think to yourself, 'They probably just couldn't sleep so they thought they would leave me a long voicemail message just checking in.' You know that this is something they do fairly frequently. You dial their number and decide to call them back.

    2.   <u>Low objective cost/fear:</u>
You wake up in the morning and see a missed call and voicemail from your parents from several hours prior. You wonder why your parents called you in the middle of the night. You think to yourself, 'They probably just couldn't sleep so they thought they would leave me a long voicemail message just checking in.' You know that this is something they do fairly frequently. You suddenly feel like you can't breathe and feel your heart start pounding in your chest. As you dial their number, you feel frozen, like you can't move at all.

    3.   <u>High objective cost/no fear:</u>
You wake up in the morning and see a missed call and voicemail from your parents from several hours prior. You wonder why your parents called you in the middle of the night. You think to yourself, 'They never call me in the middle of the night. This is weird. I wonder what's going on.' You dial their number and decide to call them back.

    4. <u>High objective cost/fear:</u>
You wake up in the morning and see a missed call and voicemail from your parents from several hours prior. You wonder why your parents called you in the middle of the night. You think to yourself, 'They never call me in the middle of the night. This is weird. I wonder what's going on.' You suddenly feel like you can't breathe and feel your heart start pounding in your chest. As you dial their number, you feel frozen, like you can't move at all.

Anxiety: First Vignette

    1.   <u>Low objective cost/no anxiety:</u>
You receive a utility bill in the mail that is due in several days. You are not surprised by the amount of the bill and have enough money in your account to cover the cost. You pay the bill online and move on with the rest of your day.

    2.   <u>Low objective cost/anxiety:</u>
You receive a utility bill in the mail that is due in several days. You are not surprised by the amount of the bill and have enough money in your account to cover the cost. You

suddenly begin to worry about how you are going to pay this bill and feel a knot forming in your stomach.

3. <u>High objective cost/no anxiety:</u>

You receive a utility bill in the mail that is due in several days. You are shocked by the amount of the bill and barely have enough money in your account to cover the cost. You pay the bill online and move on with the rest of your day.

4. <u>High objective cost/anxiety:</u>

You receive a utility bill in the mail that is due in several days. You are shocked by the amount of the bill and barely have enough money in your account to cover the cost. You suddenly begin to worry about how you are going to pay this bill and feel a knot forming in your stomach.

Anxiety: Second Vignette

1. <u>Low objective cost/no anxiety:</u>

You just finished giving a work presentation where you were being evaluated by your coworkers. Even though you had prepared adequately, the questions you were asked were much more difficult than you thought they would be. You hope that you will perform well on the presentation but know that, even if you don't, you have high markings and are well-liked by your co-workers. You meet up with your friends and go out to dinner to celebrate the end of the day and get the presentation off your mind.

2. <u>Low objective cost/anxiety:</u>

You just finished giving a work presentation where you were being evaluated by your coworkers. Even though you had prepared adequately, the questions you were asked were much more difficult than you thought they would be. You hope that you will perform well on the presentation but know that, even if you don't, you have high markings and are well-liked by your co-workers. You begin to feel a sense of uneasiness and notice that you feel nauseous.

3. <u>High objective cost/no anxiety:</u>

You just finished giving a work presentation where you were being evaluated by your coworkers. Even though you had prepared adequately, the questions you were asked were much more difficult than you thought they would be. You hope that you will perform well on the presentation because, if you don't, there is a high likelihood that you will be fired. Your company is looking for people to fire, as it has been struggling financially. You meet up with your friends and go out to dinner to celebrate the end of the day and get the presentation off your mind.

4. <u>High objective cost/anxiety:</u>

You just finished giving a work presentation where you were being evaluated by your coworkers. Even though you had prepared adequately, the questions you were asked were much more difficult than you thought they would be. You hope that you will perform well on the presentation because, if you don't, there is a high likelihood that you will be

fired. Your company is looking for people to fire, as it has been struggling financially. You begin to feel a sense of uneasiness and notice that you feel nauseous.

Anxiety: Third Vignette

1. <u>Low objective cost/no anxiety:</u>

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You think to yourself, 'oh well, I'm already here. I might as well have a good time!'

2. <u>Low objective cost/anxiety:</u>

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You start to worry about what other people will think of you and feel butterflies in your stomach.

3. <u>High objective cost/no anxiety:</u>

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You notice other guests staring at you and receive a text from your other friend at the wedding saying, "I'm at the bar getting a drink and people are talking about how under dressed you are." You think to yourself, 'oh well, I'm already here. I might as well have a good time!'

4. <u>High objective cost/anxiety:</u>

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You notice other guests staring at you and receive a text from your other friend at the wedding saying, "I'm at the bar getting a drink and people are talking about how under dressed you are." You start to worry about what other people will think of you and feel butterflies in your stomach.

Anxiety: Fourth Vignette

1. <u>Low objective cost/no anxiety:</u>

It is your first day at your new job. You got up early in the morning to prepare lunch, shower, and make sure that you look your best. You immediately felt welcomed during your interview and have heard great things about the company you are joining. As you drive to work, you feel ready to take on the day.

2. Low objective cost/anxiety:

It is your first day at your new job. You got up early in the morning to prepare lunch, shower, and make sure that you look your best. You immediately felt welcomed during your interview and have heard great things about the company you are joining. As you drive to work, you feel butterflies in your stomach and wonder if your co-workers are going to think you're competent. Your hands start to feel clammy and you begin to sweat.

3. High objective cost/no anxiety:

It is your first day at your new job. You got up early in the morning to prepare lunch, shower, and make sure that you look your best. During your interview, the other employees were cold and unfriendly and did not seem to want to get to know you. You also know that an employee was recently fired from the company for "under-performing." As you drive to work, you feel ready to take on the day.

4. High objective cost/anxiety:

It is your first day at your new job. You got up early in the morning to prepare lunch, shower, and make sure that you look your best. During your interview, the other employees were cold and unfriendly and did not seem to want to get to know you. You also know that an employee was recently fired from the company for "under-performing." As you drive to work, you feel butterflies in your stomach and wonder if your co-workers are going to think you're competent. Your hands start to feel clammy and you begin to sweat.

Shame: First Vignette

1. Low objective cost/no shame:

You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. As you go up to the podium, you hear the chatter of people, take a deep breath, and deliver your speech.

2. Low objective cost/shame:

You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. As you go up to the podium, you hear the chatter of people. You suddenly experience a sense of dread and feel like you want to shrink down and disappear from sight.

3. High objective cost/no shame:

You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in

front of the whole city. You hear someone yell, "Seriously, why are you running again?! It's not like you're going to win this year." As you go up to the podium, you hear the chatter of people, take a deep breath, and deliver your speech.

4. High objective cost/shame:

You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. You hear someone yell, "Seriously, why are you running again?! It's not like you're going to win this year." As you go up to the podium, you hear the chatter of people. You suddenly experience a sense of dread and feel like you want to shrink down and disappear from sight.

Shame: Second Vignette

1. Low objective cost/no shame:

You are asked out on a date by someone you find very attractive and have liked for several months. You think about different conversation topics in your head and daydream about how the date will be. When the time comes, you put on your best outfit and drive to the restaurant where you are supposed to meet. Your waiter shows you to your table and you sit and wait for your date to arrive. As you wait, you daydream about how attractive your date is going to look when they walk in the room.

2. Low objective cost/shame:

You are asked out on a date by someone you find very attractive and have liked for several months. You think about different conversation topics in your head and daydream about how the date will be. When the time comes, you put on your best outfit and drive to the restaurant where you are supposed to meet. Your waiter shows you to your table and you sit and wait for your date to arrive. You suddenly feel mortified and begin to avoid eye contact with people eating at other tables.

3. High objective cost/no shame:

You are asked out on a date by someone you find very attractive and have liked for several months. You think about different conversation topics in your head and daydream about how the date will be. When the time comes, you put on your best outfit and drive to the restaurant where you are supposed to meet. Your waiter shows you to your table and you sit and wait for your date to arrive. 30 minutes go by and there is no sign of your date. You try to text them but there is no response. As you wait, you daydream about how attractive your date is going to look when they walk in the room.

4. High objective cost/shame:

You are asked out on a date by someone you find very attractive and have liked for several months. You think about different conversation topics in your head and daydream about how the date will be. When the time comes, you put on your best

outfit and drive to the restaurant where you are supposed to meet. Your waiter shows you to your table and you sit and wait for your date to arrive. 30 minutes go by and there is no sign of your date. You try to text them but there is no response. You suddenly feel mortified and begin to avoid eye contact with people eating at other tables.

Shame: Third Vignette

1. Low objective cost/no shame:

You have just moved to a new city and are organizing a social outing for some new friends you have just made. You do some research and come across a new bar that just opened downtown. You text the group of friends to remind them of the event, get ready for the evening, and arrive at the bar. After several minutes, they each text back and say that they are unable to come. Each friend provides a different reason for why they cannot come (e.g., home sick, last minute work project, do not feel well). You decide to explore the bar and order a drink.

2. Low objective cost/shame:

You have just moved to a new city and are organizing a social outing for some new friends you have just made. You do some research and come across a new bar that just opened downtown. You text the group of friends to remind them of the event, get ready for the evening, and arrive at the bar. After several minutes, they each text back and say that they are unable to come. Each friend provides a different reason for why they cannot come (e.g., home sick, last minute work project, do not feel well). You feel a sense of dread and become embarrassed and self-conscious.

3. High objective cost/no shame:

You have just moved to a new city and are organizing a social outing for some new friends you have just made. You do some research and come across a new bar that just opened downtown. You text the group of friends to remind them of the event, get ready for the evening, and arrive at the bar. After several minutes, they each text back and say that they are unable to come. Each friend provides a different reason for why they cannot come (e.g., home sick, last minute work project, do not feel well). As you walk into the bar, you see a group of friends sitting at a large corner table. You recognize them immediately as the new group of friends you were texting, realizing that they decided to attend the social gathering without you. You decide to explore the bar and order a drink.

4. High objective cost/shame:

You have just moved to a new city and are organizing a social outing for some new friends you have just made. You do some research and come across a new bar that just opened downtown. You text the group of friends to remind them of the event, get ready for the evening, and arrive at the bar. After several minutes, they each text back and say that they are unable to come. Each friend provides a different reason for why they cannot come (e.g., home sick, last minute work project, do not feel well). As you walk into the bar, you see a group of friends sitting at a large corner table. You recognize them

immediately as the new group of friends you were texting, realizing that they decided to attend the social gathering without you. You feel a sense of dread and become embarrassed and self-conscious.

Shame: Fourth Vignette

    1. <u>Low objective cost/no shame:</u>
You are in charge of planning your family's summer reunion. It is the one time a year that your family members fly in from all over the country and have the opportunity to spend the weekend together. You have planned the family reunion in the past and something has always gone awry, causing your family to jokingly make fun of you. It is the day before the start of the reunion and you get a call from the hotel you are supposed to stay at saying that they can no longer host your family members. You call another hotel and luckily they are able to accommodate your family for the weekend. You call your family members to notify them about the change of plans.

    2. <u>Low objective cost/shame:</u>
You are in charge of planning your family's summer reunion. It is the one time a year that your family members fly in from all over the country and have the opportunity to spend the weekend together. You have planned the family reunion in the past and something has always gone awry, causing your family to jokingly make fun of you. It is the day before the start of the reunion and you get a call from the hotel you are supposed to stay at saying that they can no longer host your family members. You call another hotel and luckily they are able to accommodate your family for the weekend. You feel mortified and immediately wish that you could curl up into a ball and become invisible.

    3. <u>High objective cost/no shame:</u>
You are in charge of planning your family's summer reunion. It is the one time a year that your family members fly in from all over the country and have the opportunity to spend the weekend together. You have planned the family reunion in the past and something has always gone awry, causing your family to jokingly make fun of you. It is the day before the start of the reunion and you get a call from the hotel you are supposed to stay at saying that they can no longer host your family members. You call several more hotels and none of them are able to accommodate you. You call your family members to notify them about the change of plans.

    4. <u>High objective cost/shame:</u>
You are in charge of planning your family's summer reunion. It is the one time a year that your family members fly in from all over the country and have the opportunity to spend the weekend together. You have planned the family reunion in the past and something has always gone awry, causing your family to jokingly make fun of you. It is the day before the start of the reunion and you get a call from the hotel you are supposed to stay at saying that they can no longer host your family members. You call several more hotels and none of them are able to accommodate

you. You feel mortified and immediately wish that you could curl up into a ball and become invisible.

Anger: First Vignette

1. <u>Low objective cost/no anger:</u>
You are about to finish up your week at work and head on a weeklong vacation with your significant other. You are feeling relaxed and are looking forward to a work-free week where you will be able to spend quality time with your partner and focus on your relationship. As you are walking out the door, you hear your boss yell, 'Hey, I have something that I need you to get done for me next week.' Knowing that you can't say no to your boss, as you are trying to get promoted soon, you head into their office and pick up the work they have for you. As you walk out of the office, you put on your headphones and listen to some music.

2. <u>Low objective cost/anger:</u>
You are about to finish up your week at work and head on a weeklong vacation with your significant other. You are feeling relaxed and are looking forward to a work-free week where you will be able to spend quality time with your partner and focus on your relationship. As you are walking out the door, you hear your boss yell, 'Hey, I have something that I need you to get done for me next week.' Knowing that you can't say no to your boss, as you are trying to get promoted soon, you head into their office and pick up the work they have for you. As you walk out of the office, you feel your muscles tightening and your face becoming hot and flushed. You are absolutely furious, feeling like you want to punch a wall.

3. <u>High objective cost/no anger:</u>
You are about to finish up your week at work and head on a weeklong vacation with your significant other. You are feeling relaxed and are looking forward to a work-free week where you will be able to spend quality time with your partner and focus on your relationship. As you are walking out the door, you hear your boss yell, 'Hey, I have something that I need you to get done for me next week.' Knowing that you can't say no to your boss, as you are trying to get promoted soon, you head into their office and pick up the work they have for you. You look at the stack of papers and know that this, on top of the other work you have to catch up on, is going to take you a very long time. It will no longer be an option to have a work-free vacation. As you walk out of the office, you put on your headphones and listen to some music.

4. <u>High objective cost/anger:</u>
You are about to finish up your week at work and head on a weeklong vacation with your significant other. You are feeling relaxed and are looking forward to a work-free week where you will be able to spend quality time with your partner and focus on your relationship. As you are walking out the door, you hear your boss yell, 'Hey, I have something that I need you to get done for me next week.'

Knowing that you can't say no to your boss, as you are trying to get promoted soon, you head into their office and pick up the work they have for you. You look at the stack of papers and know that this, on top of the other work you have to catch up on, is going to take you a very long time. It will no longer be an option to have a work-free vacation. As you walk out of the office, you feel your muscles tightening and your face becoming hot and flushed. You are absolutely furious, feeling like you want to punch a wall.

Anger: Second Vignette

1. <u>Low objective cost/no anger:</u>

You have finished dinner with your friends at a nice restaurant and are walking back to your car. You had to park several blocks away, as there was no parking close to the restaurant. As you approach your car, you see a huge dent on the left side. It looks like you have been side-swiped pretty hard by someone. Luckily your car is old with many dents, and you are planning to get rid of it fairly soon. You unlock your car, put your keys in the ignition, and drive home.

2. <u>Low objective cost/anger:</u>

You have finished dinner with your friends at a nice restaurant and are walking back to your car. You had to park several blocks away, as there was no parking close to the restaurant. As you approach your car, you see a huge dent on the left side. It looks like you have been side-swiped pretty hard by someone. Luckily your car is old with many dents, and you are planning to get rid of it fairly soon. You explode with rage and become exasperated, clenching your fists tightly.

3. <u>High objective cost/no anger:</u>

You have finished dinner with your friends at a nice restaurant and are walking back to your car. You had to park several blocks away, as there was no parking close to the restaurant. As you approach your car, you see a huge dent on the left side. It looks like you have been side-swiped pretty hard by someone. Your car is brand new and you paid a lot of money for it. You unlock your car, put your keys in the ignition, and drive home.

4. <u>High objective cost/anger:</u>

You have finished dinner with your friends at a nice restaurant and are walking back to your car. You had to park several blocks away, as there was no parking close to the restaurant. As you approach your car, you see a huge dent on the left side. It looks like you have been side-swiped pretty hard by someone. Your car is brand new and you paid a lot of money for it. You explode with rage and become exasperated, clenching your fists tightly.

Anger: Third Vignette

    1. <u>Low objective cost/no anger:</u>

You get a call from your parent saying that they need to talk to you. You ask them what is going on and they tell you that they got fired from their job. You know that they have hated this job for a long time and has been looking for a way to quit, so you think to yourself, 'This is probably a good thing.' You continue to spend several minutes on the phone with your parent talking about the situation and figure out what they are going to do next.

    2. <u>Low objective cost/anger:</u>

You get a call from your parent saying that they need to talk to you. You ask them what is going on and they tell you that they got fired from their job. You know that they have hated this job for a long time and have been looking for a way to quit, so you think to yourself, 'This is probably a good thing.' You are furious and feel like you are going to explode. You think to yourself, 'How in the world could they fire them?!"

    3. <u>High objective cost/no anger:</u>

You get a call from your parent saying that they need to talk to you. You ask them what is going on and they tell you that they got fired from their job. Your parent has had this job for 15 years and has always gotten positive feedback about their work performance. You are not sure how quickly they will be able to find a new job, as they work in a niche area. Money in your family is tight. You continue to spend several minutes on the phone with your parent talking about the situation and figure out what they are going to do next.

    4. <u>High objective cost/anger:</u>

You get a call from your parent saying that they need to talk to you. You ask them what is going on and they tell you that they got fired from their job. Your parent has had this job for 15 years and has always gotten positive feedback about their work performance. You are not sure how quickly they will be able to find a new job, as they work in a niche area. Money in your family is tight. You are furious and feel like you are going to explode. You think to yourself, 'How in the world could they fire them?!"

Anger: Fourth Vignette

    1. <u>Low objective cost/no anger:</u>

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have got offers from several other jobs, all of which you are excited about. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You sit back in your chair and think about what you are going to do for the rest of the day.

2. Low objective cost/anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have got offers from several other jobs, all of which you are excited about. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You become furious and immediately feel like you want to punch something.

3. High objective cost/no anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have not received any job offers. This is your last hope. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You sit back in your chair and think about what you are going to do for the rest of the day.

4. High objective cost/anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have not received any job offers. This is your last hope. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You become furious and immediately feel like you want to punch something.

Sadness: First Vignette

1. Low objective cost/no sadness:

The day has come when your best friend is moving to a different city. You have lived in the same city for many years and have made many wonderful memories together. They have been with you through some difficult times and have been a steadfast support system for you. As you give your friend a hug, you know that you will make a large effort to stay in touch and have already talked about visiting each other frequently. You wave to your friend as they walk away.

2. Low objective cost/sadness:

The day has come when your best friend is moving to a different city. You have lived in the same city for many years and have made many wonderful memories together. They have been with you through some difficult times and have been a steadfast support system for you. As you give your friend a hug, you know that you will make a large effort to stay in touch and have already talked about visiting each other frequently. You are suddenly overcome by grief and begin to sob uncontrollably.

3. High objective cost/no sadness:

The day has come when your best friend is moving to a different city. You have lived in the same city for many years and have made many wonderful memories

together. They have been with you through some difficult times and have been a steadfast support system for you. As you give your friend a hug, you know that there is a high likelihood you will never live in the same city again. You also know that you and your friend are both horrible at staying in touch, so the likelihood of staying as close as you are now is low. You wave to your friend as they walk away.

4. High objective cost/sadness:

The day has come when your best friend is moving to a different city. You have lived in the same city for many years and have made many wonderful memories together. They have been with you through some difficult times and have been a steadfast support system for you. As you give your friend a hug, you know that there is a high likelihood you will never live in the same city again. You also know that you and your friend are both horrible at staying in touch, so the likelihood of staying as close as you are now is low. You are suddenly overcome by grief and begin to sob uncontrollably.

Sadness: Second Vignette

1. Low objective cost/no sadness:

You are driving home from work and get a call from your significant other. They say, "Hey, where's Leo?" Leo is your 5-year old dog that you have had since you were a puppy. You respond that Leo is probably in the living room, where he always is, but will check in a few minutes when you are home. Your significant other tells you that they saw a dog that had been hit by a car that looked exactly like Leo. You know that Leo has never run away from home and think that you will find him sitting on the couch, like he usually is. You pull into your parking spot, lock your car, and unlock your front door.

2. Low objective cost/sadness:

You are driving home from work and get a call from your significant other. They say, "Hey, where's Leo?" Leo is your 5-year old dog that you have had since you were a puppy. You respond that Leo is probably in the living room, where he always is, but will check in a few minutes when you are home. Your significant other tells you that they saw a dog that had been hit by a car that looked exactly like Leo. You know that Leo has never run away from home and think that you will find him sitting on the couch, like he usually is. Your body feels empty and you feel completely distraught.

3. High objective cost/no sadness:

You are driving home from work and get a call from your significant other. They say, "Hey, where's Leo?" Leo is your 5-year old dog that you have had since you were a puppy. You respond that Leo is probably in the living room, where he always is, but will check in a few minutes when you are home. Your significant other tells you that they saw a dog that had been hit by a car that looked exactly like Leo. You know that Leo runs away from home frequently and tends to run

into the street, even when you scream at him to stop. You pull into your parking spot, lock your car, and unlock your front door.

4.   High objective cost/sadness:

You are driving home from work and get a call from your significant other. They say, "Hey, where's Leo?" Leo is your 5-year old dog that you have had since you were a puppy. You respond that Leo is probably in the living room, where he always is, but will check in a few minutes when you are home. Your significant other tells you that they saw a dog that had been hit by a car that looked exactly like Leo. You know that Leo runs away from home frequently and tends to run into the street, even when you scream at him to stop. Your body feels empty and you feel completely distraught.

Sadness: Third Vignette

1.   Low objective cost/no sadness:

You are walking home from the gym and get a call from your parent. They tell you that your grandparent passed away in their sleep. Your grandparent had been sick for many years and was in a lot of pain. You were able to say goodbye to them many times. When you hear the news, you take a deep breath and think about the powerful impact they had on your life. You talk to your parent for some time and reflect on your memories with your grandparent.

2.   Low objective cost/sadness:

You are walking home from the gym and get a call from your parent. They tell you that your grandparent passed away in their sleep. Your grandparent had been sick for many years and was in a lot of pain. You were able to say goodbye to them many times. When you hear the news, you take a deep breath and think about the powerful impact they had on your life. You begin to have difficulty swallowing and feel miserable. You can't stop thinking about the fact that they are gone.

3.   High objective cost/no sadness:

You are walking home from the gym and get a call from your parent. They tell you that your grandparent passed away in their sleep. Although your grandparent was getting older, they were very healthy and there was no indication that they would die any time soon. You never had the chance to say goodbye. When you hear the news, you take a deep breath and think about the powerful impact they had on your life. You talk to your parent for some time and reflect on your memories with your grandparent.

4.   High objective cost/sadness:

You are walking home from the gym and get a call from your parent. They tell you that your grandparent passed away in their sleep. Although your grandparent was getting older, they were very healthy and there was no indication that they would die any time soon. You never had the chance to say goodbye. When you hear the

news, you take a deep breath and think about the powerful impact they had on your life. You begin to have difficulty swallowing and feel miserable. You can't stop thinking about the fact that they are gone.

Sadness: Fourth Vignette

1. <u>Low objective cost/no sadness:</u>
Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that one of your siblings can no longer come due to a work conflict. You are not particularly close with this sibling. You tell your family members that you understand and begin planning your weekend.

2. <u>Low objective cost/sadness:</u>
Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that one of your siblings can no longer come due to a work conflict. You are not particularly close with this sibling. You feel hurt and rejected and notice yourself beginning to cry.

3. <u>High objective cost/no sadness:</u>
Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that they can no longer come due to the cost of the trip. You were really looking forward to seeing them and now are unsure who you might spend your birthday with. You tell your family members that you understand and begin planning for your weekend.

4. <u>High objective cost/sadness:</u>
Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that they can no longer come due to the cost of the trip. You were really looking forward to seeing them and now are unsure who you might spend your birthday with. You feel hurt and rejected and notice yourself beginning to cry.

Disgust

1. <u>Low objective cost/no disgust:</u>
You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down on the other side of the office from you and begins to read a magazine. You continue to read emails on your phone until the doctor calls your name.

2. <u>Low objective cost/disgust:</u>
You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down on the other side of the office from you and begins to read a magazine. You suddenly have the urge to gag and immediately wish you could take a shower.

3. <u>High objective cost/no disgust:</u>
You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down directly next to you, reaches out their hand, and immediately coughs loudly without covering their mouth. You continue to read emails on your phone until the doctor calls your name.

4. <u>High objective cost/disgust:</u>
You are about to attend a doctor's appointment. It is a normal day and you walk into the doctor's office just in time for your appointment. As soon as you take a seat, a patient walks in with colored marks and pus-filled lesions all over their body. The receptionist greets them and asks them to take a seat in the waiting area. The patient sits down directly next to you, reaches out their hand, and immediately coughs loudly without covering their mouth. You suddenly have the urge to gag and immediately wish you could take a shower.

Fear

1. <u>Low objective cost/no fear:</u>
You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. You see your apartment up ahead and walk up the front stairs.

2. Low objective cost/fear:

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. Suddenly you feel the hair on the back of your neck stand on its end and your stomach feels like it's in knots. You begin shaking and sweating.

3. High objective cost/no fear:

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. All of a sudden you see a large person cross the street and begin to move hurriedly toward you. You see your apartment up ahead and walk up the front stairs.

4. High objective cost/fear:

You are walking home alone from a party. Your roommates left the party several hours ago but you wanted to stay and catch up with some friends. It's fairly late at night but you live in a safe neighborhood and don't have to walk too far. All of a sudden you see a large person cross the street and begin to move hurriedly toward you. Suddenly you feel the hair on the back of your neck stand on its end and your stomach feels like it's in knots. You begin shaking and sweating.

Anxiety

1. Low objective cost/no anxiety:

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You think to yourself, 'oh well, I'm already here. I might as well have a good time!'

2. Low objective cost/anxiety:

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You start to worry about what other people will think of you and feel butterflies in your stomach.

3. High objective cost/no anxiety:

You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You notice other guests staring at you and receive a text from your other friend at the wedding saying, "I'm at the bar getting a drink and people are talking about how under dressed you are." You think to yourself, 'oh well, I'm already here. I might as well have a good time!'

4. High objective cost/anxiety:
You arrive at your friend's wedding. You are excited about the new outfit you are wearing and can't wait to relax and have a good time. You look at the other guests as they start to arrive and notice that everyone else is dressed much more formally than you are. You notice other guests staring at you and receive a text from your other friend at the wedding saying, "I'm at the bar getting a drink and people are talking about how under dressed you are." You start to worry about what other people will think of you and feel butterflies in your stomach.

Shame

1. Low objective cost/no shame:
You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. As you go up to the podium, you hear the chatter of people, take a deep breath, and deliver your speech.

2. Low objective cost/shame:
You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. As you go up to the podium, you hear the chatter of people. You suddenly experience a sense of dread and feel like you want to shrink down and disappear from sight.

3. High objective cost/no shame:
You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. You hear someone yell, "Seriously, why are you running again?! It's not like you're going to win this year." As you go up to the podium, you hear the chatter of people, take a deep breath, and deliver your speech.

4. High objective cost/shame:
You decide to run for city council for the third time, hoping that this is your year. You work hard to put up posters all around the city and text your friends asking them to vote for you. The time comes for you to make your campaign speech in front of the whole city. You hear someone yell, "Seriously, why are you running again?! It's not like you're going to win this year." As you go up to the podium, you hear the chatter of people. You suddenly experience a sense of dread and feel like you want to shrink down and disappear from sight.

Anger

1. Low objective cost/no anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have got offers from several other jobs, all of which you are excited about. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You sit back in your chair and think about what you are going to do for the rest of the day.

2. Low objective cost/anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have got offers from several other jobs, all of which you are excited about. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You become furious and immediately feel like you want to punch something.

3. High objective cost/no anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have not received any job offers. This is your last hope. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You sit back in your chair and think about what you are going to do for the rest of the day.

4. High objective cost/anger:

You have applied to several jobs and are waiting to hear back from the last company, which happens to be your top choice. You have not received any job offers. This is your last hope. You see an email pop up from your top choice job and the first line reads, "We regret to inform you that we cannot extend you an offer at this time." You become furious and immediately feel like you want to punch something.

Sadness

1. Low objective cost/no sadness:

Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that one of your siblings can no longer come due to a work conflict. You are not particularly close with this sibling. You tell your family members that you understand and begin planning your weekend.

2. Low objective cost/sadness:

Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that one of your siblings can no longer come due to a work conflict. You are not particularly close with this sibling. You feel hurt and rejected and notice yourself beginning to cry.

3. High objective cost/no sadness:

Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that they can no longer come due to the cost of the trip. You were really looking forward to seeing them and now are unsure who you might spend your birthday with. You tell your family members that you understand and begin planning for your weekend.

4. High objective cost/sadness:

Your family told you several months ago that they were going to come spend your birthday with you. They live several hours away by plane and you do not have the opportunity to see them all that often. You get a call from your family a few days before your birthday saying that they can no longer come due to the cost of the trip. You were really looking forward to seeing them and now are unsure who you might spend your birthday with. You feel hurt and rejected and notice yourself beginning to cry.

The Big Five Inventory, Second Edition, Short-Form (BFI-2-S)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others?* Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1	2	3	4	5
Disagree Strongly	Disagree a little	Neutral; no opinion	Agree a little	Agree strongly

I am someone who...

1. _____ Tends to be quiet.
2. _____ Is compassionate, has a soft heart.
3. _____ Tends to be disorganized.
4. _____ Worries a lot.
5. _____ Is fascinated by art, music, or literature.
6. _____ Is dominant, acts as a leader.
7. _____ Is sometimes rude to others.
8. _____ Has difficulty getting started on tasks.
9. _____ Tends to feel depressed, blue.
10. _____ Has little interest in abstract ideas.
11. _____ Is full of energy.
12. _____ Assumes the best about people.
13. _____ Is reliable, can always be counted on.
14. _____ Is emotionally stable, not easily upset.
15. _____ Is original, comes up with new ideas.
16. _____ Is outgoing, sociable.
17. _____ Can be cold and uncaring.
18. _____ Keeps things neat and tidy.
19. _____ Is relaxed, handles stress well.
20. _____ Has few artistic interests.
21. _____ Prefers to have others take charge.
22. _____ Is respectful, treats others with respect.
23. _____ Is persistent, works until the task is finished.
24. _____ Feels secure, comfortable with self.
25. _____ Is complex, a deep thinker.
26. _____ Is less active than other people.
27. _____ Tends to find fault with others.
28. _____ Can be somewhat careless.
29. _____ Is temperamental, gets emotional easily.
30. _____ Has little creativity

State-Trait Inventory of Cognitive and Somatic Anxiety (STICSA)- Trait Version

Below is a list of statements which can be used to describe how people feel. Beside each statement are four numbers which indicate *how often* each statement is true of you (e.g., 1 = almost never, 4 = almost always). Please read each statement carefully and circle the number which best indicates how often, in general, the statement is true of you.

1	2	3	4
Almost Never	Occasionally	Often	Almost Always

In general…

1	_____	My heart beats fast.
2	_____	My muscles are tense.
3	_____	I feel agonized over my problems.
4	_____	I think that others won't approve of me.
5	_____	I feel like I'm missing out on things or can't make up my mind soon enough.
6	_____	I feel dizzy.
7	_____	My muscles are weak.
8	_____	I feel trembly and shaky.
9	_____	I picture some future misfortune.
10	_____	I can't get some thought out of my mind.
11	_____	I have trouble remembering things.
12	_____	My face feels hot.
13	_____	I think that the worst will happen.
14	_____	My legs and arms feel stiff.
15	_____	My throat feels dry.
16	_____	I keep busy to avoid uncomfortable thoughts.
17	_____	I cannot concentrate without irrelevant thoughts intruding.
18	_____	My breathing is fast and shallow.
19	_____	I worry that I cannot control my thoughts as well as I would like to.
20	_____	I have butterflies in my stomach.
21	_____	My palms feel clammy.

Short Scale Anxiety Sensitivity Index (SSASI)

Please indicate the response option that best corresponds to how much you agree with each item. If any items concern something that you have never experienced (e.g., fainting in public) answer on the basis of how you think you might feel *if you had* such an experience. Otherwise, answer all items on the basis of your own experience.

	Very Little	A little	Some	Much	Very much
1. When I tremble in the presence of others, I fear what people might think of me.	0	1	2	3	4
2. When I feel pain in my chest, I worry that I'm going to have a heart attack.	0	1	2	3	4
3. When I notice my heart skipping a beat, I worry that there is something seriously wrong with me.	0	1	2	3	4
4. When my thoughts seem to speed up, I worry that I might be going crazy.	0	1	2	3	4
5. When my mind goes blank, I worry there is something terribly wrong with me.	0	1	2	3	4

Anxiety Attitude and Belief Scale-Second Edition (AABS-2)

This inventory lists different beliefs that people sometimes hold. Please read each statement carefully, decide how much you believe what is stated, and circle the number corresponding to how much you agree. Please try not to think too much about each item—people are different, so there is no right or wrong answer. To decide how much you agree with a statement, simply keep in mind what you are like *most of the time.*

0	20	40	50	60	80	100
I Don't Believe This At All						I Believe This Completely

Please now make a rating for each of the following items.

1. _____ The way to avoid problems is not to take any risks.
2. _____ Even with small problems, one thing can lead to another and quickly turn into something huge.
3. _____ If you imagine something bad happening, it can help make that thing come true.
4. _____ You should be constantly looking out for things happening within your body so that you can detect things going wrong.
5. _____ It is better not to rock the boat than to make changes.
6. _____ People don't experience anxiety unless there is actually something they should be concerned about.
7. _____ People will make negative judgments if they think something is wrong with you.
8. _____ Anticipating the worst outcome prepares you for the worst.
9. _____ It is essential to avoid being disapproved of by other people.
10. _____ You should avoid being seen acting awkwardly.
11. _____ To avoid disasters, you need to be prepared for anything.
12. _____ Thinking about bad things that have happened to other people could cause the same thing to happen to you.
13. _____ Planning every detail in advance is the only way to avoid unpleasant surprises.
14. _____ It is important to be on the lookout for the first, small signs of an illness.
15. _____ Anxiety is generally a sign that something is wrong.
16. _____ Picturing something happening might cause it to really happen.
17. _____ It is best not to let on if you are in public and feel that something is wrong with you.
18. _____ Minor difficulties can easily get out of control and grow into major ones.

19 _____ Insanity can develop without warning.
20 _____ There is no such thing as being too careful when it comes to
      your health.
21 _____ An unusual physical sensation in your body is likely to be a sign
      that something is seriously wrong with you.
22 _____ When making a decision, it is better to play it safe rather than risk
      making the wrong choice.
23 _____ In general, it is better to keep things the way they are than to take the
      risk of making things worse.
24 _____ It is important to always appear fully at ease.
25 _____ It is unwise to proceed with something unless you have all of the
      possible information you might need.
26 _____ You should not allow yourself to be seen losing control of yourself in
      any way.
27 _____ It is crucial to anticipate potential difficulties so that you have a better
      chance of avoiding them.
28 _____ If someone is feeling anxious, there must be something for them to
      be concerned about.
29 _____ Imagining things that might happen can help bring those things about.
30 _____ It is necessary to be continually aware of signs that a health problems
      is developing.
31 _____ One should always be on the lookout for trouble that might
      be developing.
32 _____ Anxiety does not happen without there being a reason for it.
33 _____ It would be difficult to ever live down the embarrassment of losing
      control of yourself or acting strangely in public.

APPENDIX D

Materials

Video Clips

The following video clips were used in the present study:

Disgust: *Trainspotting*: The main character dives into a filthy toilet.

Sadness: *City of Angels*: Maggie dies in Seth's arms.

Neutral: *Blue*. A man clears out the drawers of his desk; a woman arrives walking in an

alley. She greets another woman and continues walking.

APPENDIX E

Behavioral Tasks

Willingness to Pay: Distress Intolerance (WTP-DI)

1. Now, imagine that you could pay money now to NEVER have feelings of distress like those you felt as you watched this video clip. What proportion of your monthly income would you pay to be free of these feelings each month during your life? In the space provided below, please write down the highest percentage of your monthly income you would be willing to pay to be guaranteed to be free of this level of distress each month. When answering this question remember that whatever you pay will reduce the amount of money you have to spend on other things. Some examples of the proportion of monthly income that people tend to spend on goods and services include: 8% for food each month, and 30% for housing each month. Please enter your percentage in the box provided in numeric form.

2. How sure are you that you would pay this amount if we asked you to do so right now?
    a. Totally sure
    b. Very sure
    c. Pretty sure
    d. Not very sure
    e. Not at all sure

3. Overall, how difficult were these questions for you to answer?
    a. Very difficult
    b. Somewhat difficult
    c. Neither difficult nor easy
    d. Somewhat easy
    e. Very easy

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