

ABSTRACT

Perceived Threats and Emotion toward People with Mental Illness: A Sociofunctional Application

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Mental illness stigma is a public health issue that researchers and clinicians seek to understand and reduce. Emotional reactions are an important component of mental illness stigma, yet current research lacks in identifying a broad range of emotional reactions toward people with mental illness and the specific threats that may elicit these emotions. The sociofunctional approach to prejudice suggests that emotional reactions arise from specific perceived threats to group functioning and motivate people to alleviate the perceived threats to preserve group functioning. Two studies utilizing the sociofunctional approach to study stigma of mental illness were conducted. The purpose of Study 1 was to determine the threats and emotions associated with people with mental illness, show the utility of studying a range of threats and emotions, and compare threats and emotional reactions across specific mental illness diagnoses. It was shown that people endorsed specific threats and a range of negative emotions toward people with mental illness. The emotions were associated with specific threats in ways that were primarily theoretically consistent. Threats and emotions also differed between specific

target diagnoses. Specifically, people with schizophrenia were associated with more perceived threats and fear than people with depression. The purpose of Study 2 was to determine how specific threats and emotional reactions toward people with mental illness differed across experimentally manipulated contexts of local community, corporate workplace, and religious community. The hypothesis was not supported that people would perceive more obstacle threats and feel more anger in a workplace context, and perceive more purity, morality, and reciprocity threats in a religious context, relative to a general community context. Exploratory results were also presented. The studies were the first to extend the sociofunctional approach to mental illness stigma and suggest that there are specific threats and emotional reactions toward people with mental illness that are currently underrepresented in the literature. While the sociofunctional approach adds to our understanding of mental illness stigma, alternate theories may also contribute to our understanding of emotion-based stigma of mental illness. Limitations and directions for future research are discussed.

Perceived Threats and Emotion toward People with Mental Illness:
A Sociofunctional Application

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A Dissertation

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Submitted to the Graduate Faculty of
Baylor University in Partial Fulfillment of the
Requirements for the Degree
of
Doctor of Philosophy

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Accepted by the Graduate School
May 2019

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ACKNOWLEDGMENTS

Thank you to my mentors and dissertation co-chairs, Dr. Thomas Fergus and Dr. Wade Rowatt, who have provided me with guidance over the past five years to strive for excellence in psychological science and have extended me opportunities to learn and grow as a scholar and teacher. I am lucky to have two mentors with different expertises that have allowed me to find a niche within social-clinical psychology and ultimately complete this dissertation. Their support and generosity has been invaluable to me on this journey. Thank you to my dissertation committee and my colleagues, who have helped shape my ideas and offered feedback during the course of this project. Thank you to the research assistants who have helped me collect data and remind me to approach research with fresh eyes and curiosity. Thank you to my mom, who graciously reads through my documents and helps me be a better writer. Thank you to my husband, Adam, who changed the course of his life to see me pursue my goals and earn my doctorate. He has been nothing but supportive, encouraging, and unwavering when I needed it most. I am fortunate to have this selfless man as my life partner. Thanks be to God for this opportunity and for surrounding me with an exceptional network of individuals.

CHAPTER ONE

Literature Review

Allport (1954) defined prejudice as negative attitudes and beliefs directed toward individuals of a particular group. The groups are determined by social categorization, and people tend to favor the groups with which they personally identify (i.e., the ingroup) and tend to disfavor outgroups. Allport states that prejudice can lead to a variety of discriminatory behaviors, from negative speech and social distance, to aggression and violence (Allport, 1954). Goffman's (1963) early work on stigma complements the conceptualization of prejudice. Goffman's traditional definition of stigma is a "mark" or some characteristic that makes an individual or group less desirable to others. At times in history, a mark was quite literal, as when Jews in Nazi Germany were marked with a yellow star, or, earlier, when Greeks branded their slaves, although not all stigmas are physically visible (Goffman, 1963). The "mark" becomes associated with a negative identity and negative contextual expectations. The stigma may lead other people to form negative impressions (i.e., stereotypes and prejudice) of the individual, socially distance themselves, and treat the person adversely (Goffman, 1963).

The stigmatization process has also been more recently presented as the labeling, stereotypes, negative attitudes, separation, social status loss, and discrimination that develop and are directed toward people with a disfavored characteristic, and which also involves a power differential between groups (Link & Phelan, 2001). Some models of stigma clearly incorporate language of prejudice, stating that prejudice is the attitudinal

and affective response in the broader stigma process (e.g., Corrigan, 2000; Thornicroft, Rose, Kassam, & Sartorius, 2007). Stigma and prejudice tap similar concepts, and many researchers in recent decades have drawn on both stigma and prejudice conceptualizations when examining intergroup relations (Phelan, Link, & Dovidio, 2008).

Despite the commonalities between stigma and prejudice, certain groups are studied more under a stigma framework, and others are studied more under a prejudice framework. Perceptions of people with mental illness are most typically framed within a *stigma* framework. Less commonly examined is *prejudice* toward people with mental illness (Phelan et al., 2008; Thornicroft et al., 2007). While this divergence in semantics is, overall, innocuous, as stigma and prejudice are similar concepts, the divergence in semantics also reflects a slight divergence in theoretical perspectives and methodology applied to studying perceptions of mental illness. Some methods and frameworks that social psychologists have used to study prejudice have not yet been translated to research on mental illness stigma. The sociofunctional approach to prejudice (Cottrell & Neuberg, 2005) is one such social-psychological framework that could benefit our understanding of mental illness stigma.

The sociofunctional approach to prejudice suggests that emotions experienced toward specific groups serve an adaptive purpose to protect the group's functioning and survival, and there are specific threat concerns that underlie specific emotions felt toward particular outgroups. The sociofunctional theory is useful in showing the nuances and variation in emotion-based prejudice toward groups (Cottrell & Neuberg, 2005). The sociofunctional approach would further our knowledge of mental illness stigma because

emotion has been examined as an important aspect of mental illness stigma, yet emotional reactions toward people with mental illness have not been tied back to a social psychological framework of affect-based prejudice. Research on mental illness stigma has identified that certain emotions, such as fear, anger, and pity, tend to be expressed toward people with mental illness, and these emotions have been tied to specific negative stereotypes and attitudes toward mental illness (Angermeyer, Holzinger, & Matschinger, 2010; Angermeyer, Matschinger, & Corrigan, 2004; Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003). However, more detailed explanations of the social functions of these emotions, or prejudice, have not been examined. Utilizing the sociofunctional approach to examine emotion toward people with mental illness offers a novel method to systematically examine emotions toward people with mental illness and the threats that underlie the emotions. Such information could aid in developing stigma interventions and ultimately reduce the many negative societal and individual consequences of mental illness stigma (i.e., Corrigan, Markowitz, & Watson, 2004; Livingston & Boyd, 2010).

In the current paper, I will discuss human needs in the context of group life and the sociofunctional approach to prejudice. I will then outline what researchers already know about mental illness stigma and emotions toward people with mental illness, as well as the limitations in the current, relatively-narrow scope of emotions and threats examined by researchers. I will propose the extension of the sociofunctional approach to prejudice to mental illness stigma. Then, I will discuss how the sociofunctional approach to prejudice may be further utilized in researching mental illness stigma by applying it to another problem—to determine how threats of mental illness may change in different social contexts. The following review will show the rationale for the studies that were

conducted, which aimed to extend the sociofunctional approach to prejudice in novel ways and fill gaps in our knowledge of mental illness stigma. Specifically, the studies aimed to (a) determine the threats and emotions associated with people with mental illness and show the overall utility of assessing various specific threats and emotions, (b) determine how threats and emotions may differ across mental illness diagnoses, and (c) determine if perceived threats and emotions differ across social contexts.

Human Sociality and Need for Groups

At a basic level, social groups offer important adaptive purposes for individuals and therefore become very important to individual survival. For example, social groups offer protection, access to more resources, access to more mates, and access to group child-rearing (Brewer, 2004; Kurzban & Leary, 2001). Theoretically, social cooperation and emphasis on group goals and survival became an adaptive part of human nature because humans needed cooperative and cohesive social groups in order to increase individual survival (Caporael & Brewer, 1995; Neuberg, Smith, & Asher, 2000).

However, community living also poses extra threats that individual living does not; group living exposes people to other people who cheat or loaf, to people who are not helpful or cooperative for successful intergroup competition, and to people who may carry disease (Kurzban & Leary, 2001). Therefore, people may stigmatize and reject individuals who pose more risk to the group than reward (Kurzban & Leary, 2001). Identifying and ostracizing (i.e., stigmatizing) threatening individuals may have become functional for survival and could have helped keep people in social groups from living outside of the acceptable norms of health, reciprocation, honesty, and morality, thereby

increasing group and individual survival (Neuberg et al., 2000; Stangor & Dovidio, 2000).

The sociofunctional approach to prejudice (Cottrell & Neuberg, 2005) is an evolutionary social psychology theory that follows the rationale that humans have adapted to be very attuned to specific threats to group functioning, quickly appraise threats, and react to threats in ways that ostracize potentially threatening individuals (e.g., Neuberg et al., 2000; Stangor & Dovidio, 2000). The sociofunctional approach to prejudice suggests that people have affective responses to individuals who threaten group functioning, and the emotions motivate behavior to respond to threats (Cottrell & Neuberg, 2005). While the sociofunctional approach makes no claims that emotion arose specifically for the evolutionarily adaptive purpose of managing group threats, it suggests that emotions became adaptive for multiple purposes as the human species evolved, including for group functioning (Cottrell & Neuberg, 2005).

The Sociofunctional Approach to Prejudice in Detail

The sociofunctional approach to prejudice (Cottrell & Neuberg, 2005) centers on the causes and consequences of emotion-based prejudice, and how emotions are, overall, adaptive to group functioning and survival. Specifically, the sociofunctional approach suggests that negative emotional reactions, or prejudice, toward outgroups could be adaptive because they arise out of potential threat to group functioning and serve the purpose of eliminating, remediating, or avoiding the perceived threat to group functioning. In this way, prejudice could serve (or could have served, in history) a purpose, and the specificity of emotional prejudice to various groups is dependent on the particular threats posed by outgroup members (Cottrell & Neuberg, 2005).

The sociofunctional approach to prejudice outlines various group threats and six relevant emotions: anger, envy, fear, disgust, pity, and guilt. Discrete emotions are used, as opposed to more general categories of factor-analytically-derived emotions, because they allow for greater specificity in identifying precursors and outcomes of emotions (Lazarus, 1991; see also Smith, 1993). Under the sociofunctional approach, each emotion accompanies specific threats and outcomes (Cottrell & Neuberg, 2005). Anger theoretically arises out of goal frustration and threats to group cooperation. Anger-related threats include threats to economic resources and property and threats to social coordination and social trust, including threats to reciprocity relations. Envy typically arises out of threats to the ingroup's perceived competency and also arises as a secondary emotion from threats to resources, specifically if an outgroup has access to limited resources that the ingroup does not have adequate access to. Fear comes from threats to physical safety. Disgust is related to threats of contamination in either moral or physical ways. Pity arises from threats to reciprocity relations, but specifically arises out of observing people who need to take more than of their own choice. Lastly, guilt arises out of threats to the ingroup's perceived morality, specifically when a wrong-doing is committed and so group reputation is threatened (Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002).

Under the sociofunctional approach, each emotion also serves the purpose of alleviating the perceived threat (Cottrell & Neuberg, 2005). Anger is an approach-related emotion that motivates individuals to eliminate or remediate threats to the group's goals or resources. Envy motivates people to take or earn more resources. Fear motivates escape from the perceived physical threat. Disgust is an avoidant emotion and functions

to keep individuals away from people with potential moral and bodily contaminants. Pity is a social emotion that helps individuals have more altruistic relationships and more positive helping or reciprocation behaviors. Guilt also helps individuals have positive relationships and restores group reputation following a wrong-doing (Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002). The emotions motivate behavior that is meant to relieve the threat at-hand. Thus, prejudice can be adaptive to group relationships, safety, goals, and overall survival. When the social group survives and thrives, then the individuals within the group can also survive and thrive (Brewer, 2004; Caporael & Brewer, 1995; Neuberg et al., 2000).

Prejudice toward many groups has been examined under the sociofunctional approach, including African Americans, Asian Americans, Mexican Americans, Native Americans, gay men, feminists, fundamentalist Christians, and nonfundamentalist Christians (Cottrell & Neuberg, 2005). Cottrell and Neuberg (2005) found that certain groups, such as fundamentalist Christians and feminists, evoked anger and seemed to threaten personal freedoms, social coordination, and trust. Certain groups, such as gay men, evoked disgust and threatened physical and moral health, whereas other groups, such as Native Americans, evoked pity and threatened reciprocity relations due to inability. Cottrell and Neuberg found that certain groups, such as African Americans and Mexican Americans, evoke fear and seem to threaten safety. Overall, the profiles of threats and emotions were unique among the groups and showed that only measuring general explicit prejudice concealed nuances involved in prejudice toward groups. Groups that were targets of similar amount of general prejudice were sometimes associated with very different threat and emotion profiles (Cottrell & Neuberg, 2005).

Researchers have since extended the work of Cottrell and Neuberg (2005) to examine other groups. For example, Cook, Cottrell, and Webster (2015) found that atheists threatened group values and evoked moral disgust. Cook et al.'s research corroborates similar research linking prejudice of atheists to distrust and value violation (Gervais, Shariff, & Norenzayan, 2011). Kuppens and Yzerbyt (2012) extended the sociofunctional framework to examine females' perceived threats and emotional reactions toward Muslims. They found that when women's gender identity was made salient they perceived more threats to personal rights and freedoms, physical safety, group values, reciprocity, and trust, and experienced higher anger, fear, and disgust (Kuppens & Yzerbyt, 2012).

Furthermore, researchers have used the sociofunctional approach to examine the consequences of emotion-based prejudice, showing the importance of threats and emotions in predicting outcomes. According to the sociofunctional theory, discriminatory and behavioral intentions toward outgroups are motivated by emotion in order to resolve or avoid perceived threats (Cottrell & Neuberg, 2005). Indeed, research supports these theoretical implications of emotional reactions. Johnston and Glasford (2014) examined active and passive harm associated with threats and emotions elicited toward feminists, gay men, and Mexican Americans. Specifically, they found that anger-related threats predicted anger, which predicted active harm toward outgroups, whereas disgust- and fear- related threats predicted disgust and fear, which predicted passive harm (i.e., avoidance) toward outgroups (Johnston & Glasford, 2014). Johnston and Glasford's work complements other intergroup research that suggests that specific emotions relate to

specific intergroup behavioral tendencies (Cuddy, Fiske, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002), while extending the sociofunctional approach to motivated behavior.

Researchers have also examined other practical outcomes of emotional reactions under the sociofunctional approach. Cottrell, Richards, and Nichols (2010) examined how threats and emotions toward outgroups related to agreement with political policies that involved the outgroups. For example, threats to values predicted disgust toward gay men and lesbians, which then predicted attitudes toward gay rights. Threats to reciprocity due to choice predicted anger toward immigrants, which then predicted attitudes toward immigration (Cottrell et al., 2010). Agreement with policy may reflect voting behavior and discriminatory intentions to harm outgroups, showing the relevance of studying emotional reactions under the sociofunctional approach (Cottrell et al., 2010). Overall, Cottrell et al.'s (2010) and Johnston and Glasford's (2014) studies show the consequences of emotion-based prejudice and the importance of examining threat and emotion-based prejudice with the sociofunctional approach. Given the apparent utility of the sociofunctional approach to prejudice in predicting behavioral and discriminatory intentions, it is important to extend the theory to unexplored outgroups and situations.

While many groups have been examined under the sociofunctional approach, there are still certain groups that have not been examined and which would benefit from a detailed understanding of the threats and emotions associated with the specific group. People with mental illness is one such group that has not been examined under the sociofunctional approach and would benefit from a better understanding of the social threats associated with negative emotional reactions and prejudice toward people with mental illness. Extending the sociofunctional approach to prejudice to examine prejudice

toward mental illness would help establish the theory's applicability to clinically-relevant groups and also fill in gaps in the mental illness stigma literature. Next, I will describe what is known about mental illness stigma, especially in emotional reactions, and delineate how our knowledge of mental illness stigma may expand with the use of the sociofunctional approach.

Mental Illness Stigma

Mental illness is a relatively common health condition (Kessler et al., 2007), yet people with mental illness face stigma that may include negative stereotypes, prejudice, and discrimination (Corrigan, 2000). People generally believe that those with mental illness are dangerous and unpredictable, personally at fault for the illness (and therefore blamed), difficult to relate to, and unable to fully recover and/or take care of themselves (e.g., Angermeyer & Matschinger, 2005; Corrigan & Watson, 2002; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Norman, Windell, & Manchanda, 2010; Schomerus et al., 2012; Schomerus, Matschinger, & Angermeyer, 2014; Wood, Birtel, Alsawy, Pyle, & Morrison, 2014). The deleterious effects of these stereotypes and beliefs include interpersonal and systematic discrimination (Angermeyer & Matschinger, 1997; Corrigan et al., 2004; Corrigan et al., 2003; Link et al., 1999), disparate health outcomes (Hatzenbuehler, Phelan, & Link, 2013), and reduced treatment seeking (Corrigan, 2004). Societal stigma can also be internalized by people with mental illness (Rüsch, Angermeyer, & Corrigan, 2005), creating self-stigma that could lead to negative outcomes such as decreased self-esteem and self-efficacy, more severe symptoms, and reduced quality of life (Corrigan, Watson, & Barr, 2006; Livingston & Boyd, 2010;

Watson, Corrigan, Larson, & Sells, 2007). The consequences of stigma make it obvious that it is a public health issue.

While the stereotypes of people with mental illness receive much attention in research, emotions toward people with mental illness are a critical component of stigma, yet are relatively understudied in the literature (Angermeyer et al., 2010; Thornicroft et al., 2007). Researchers acknowledge the importance of emotional reactions, since desire for social distance and discrimination may be better predicted by emotional reactions than negative stereotypes alone (Angermeyer et al., 2010; Thornicroft et al., 2007). Corrigan et al. (2003) found that emotions of fear, anger, and pity toward people with mental illness accounted for almost 13% of the variance in helping/avoidant behavioral intentions and 19% of the variance in desire for coercion/segregation (e.g., beliefs that people with mental illness should be institutionalized or forced to take medication). The variance was explained above and beyond the explanatory power of demographic variables and beliefs about controllability and dangerousness. Angermeyer et al. (2010) found that emotions alone accounted for 21% of the variance in social distance toward people with schizophrenia, and about 10% of unique variance when emotional reactions and stereotypes of unpredictability, dangerousness, and controllability were included as predictors. Similarly, emotional reactions accounted for 14% of the variance in social distance toward depression (5% unique variance beyond stereotypes), and 19% of the variance in social distance toward people with alcohol use disorder (14% unique variance beyond stereotypes; Angermeyer et al., 2010). In sum, it is important to understand and address emotional reactions toward people with mental illness to reduce adverse outcomes of people with mental illness.

Despite the known importance of understanding emotional reactions, current research in the area of affect-based reactions toward mental illness is relatively narrow in scope. First, only a small number of emotions (i.e., fear, anger, and pity) have been connected to mental illness stigma. Second, there has been no systematic examination of specific threats that may elicit emotional reactions toward people with mental illness. In other words, we know that people have emotional reactions toward people with mental illness, but we do not know exactly what causes those emotions and what, specifically, is threatening about people with mental illness. Ultimately, we may not have a full picture of emotional reactions and their precursors.

The sociofunctional approach, as earlier described, offers a framework to examine a variety of perceived threats and emotional reactions, which could greatly benefit the study of mental illness stigma. Acknowledging a variety of threats and emotions could provide greater specificity when attempting to account for discrimination against people with mental illness and when attempting to remediate stigma through interventions. Currently, we have no systematic evaluation of specific threats, but we have some evidence of a few general stereotypes and beliefs that are related to emotions in the context of mental illness, which will be discussed next.

Predictors of Emotions toward People with Mental Illness

While there has been no systematic examination of the threats underlying emotion toward mental illness, certain variables, especially stereotypic beliefs, have been examined in relation to affect-based prejudice toward mental illness. Most researchers examine fear, anger, and pity emotions because these particular emotions seem to connect to often-studied stigmatizing beliefs about mental illness (e.g., Angermeyer et al., 2010,

2004; Corrigan et al., 2003). The belief variables reflect commonly studied constructs in the mental illness stigma literature: attributions of illness and perceived dangerousness. For example, perceived controllability and responsibility of illness may be associated with less pity, more anger, and more fear (Corrigan et al., 2003), and perceived dangerousness may also be associated with more pity, anger, and fear (Angermeyer et al., 2004; Corrigan et al., 2002; 2003). Additionally, biological attributions of illness (heredity, chemical imbalance, and brain disease) may differentially predict pity, anger, and fear toward people with mental illness (Angermeyer et al., 2014), and beliefs that mental illness symptoms lie on a continuum may be associated with more anger and more pro-social emotions (i.e., pity; Angermeyer et al., 2015). In sum, specific emotional reactions toward mental illness are often posed as consequences of a narrow scope of stigmatizing beliefs—illness attributions and perceived dangerousness.

Warmth and competence stereotypes have also been examined as precursors to emotional reactions toward people with mental illness (i.e., using the stereotype content model; Fiske et al., 2002; Sadler, Meagor, & Kaye, 2012). Sadler et al. (2012) posited that the dangerousness perception of mental illness was similar to the warmth (or lack thereof) stereotype dimension and that perceptions of incompetence and dependency corresponded to the competence dimension. People with mental illness were generally characterized by low warmth and low competence, although there was slight variability when mental illness was broken down by specific diagnoses in a second study (Sadler et al., 2012). A later study found that the warmth stereotype construct differentially predicted anger (which was measured as a composite of contempt and disgust), fear, pity, and admiration, while competence differentially predicted fear and envy toward people

with mental illness (Sadler, Kaye, & Vaughn, 2015). Sadler et al. (2015) also found that emotions mediated the relationships between stereotype content and desire to harm and help. While informative, the warmth and competence stereotype constructs are broad and correlated with multiple emotions, and the emotions tied to these stereotype constructs were not measured in optimal ways (i.e., many researchers, such as Hutcherson & Gross, 2011, and Rozin, Lowery, Haidt, & Imada, 1999, would not agree that anger is a composite of contempt and disgust). Overall, the findings of Sadler and colleagues (2012; 2015) indicate that mental illness stigma research could benefit from a more nuanced analysis of the threats and emotions tied to mental illness stigma.

Existing Limitations in the Literature

The sociofunctional approach to prejudice could offer a more nuanced framework for studying mental illness, as well as strengthen some of the current limitations in the study of emotional reactions toward people with mental illness. One limitation in the current understanding of precursors to emotional reactions toward mental illness is that sometimes the belief and stereotype precursors are measured in non-specific ways. Specifically, perceived dangerousness is often measured with a variety of items that range from perceived physical violence, to perceived unpredictability and strangeness, to simply perceived “dangerousness” (for example, the measures used in Angermeyer et al., 2004 and Corrigan et al., 2003). While it is assumed that perceived dangerousness refers to physical violence, it is often measured with items that could reflect threats to more than simply physical safety. For example, perceiving “danger” could refer to danger to physical safety, danger of value violation, danger to resources, danger to trust, or something else entirely. Measuring the non-specific notion of “danger” could be one

reason why perceived dangerousness is sometimes highly correlated with emotions other than fear (e.g., Corrigan et al., 2003). Under the sociofunctional approach, threats are measured in more specific ways that offer a more precise analysis of perceptions of outgroups.

Another limitation is that other potentially relevant threats and emotions have gone unstudied in the mental illness stigma literature. According to Cottrell and Neuberg (2005), anger is associated with a variety of threats; however, much mental illness literature discusses only perceived controllability of illness as a relevant correlate to anger. Considering that anger has been identified as a common emotional reaction toward people with mental illness, it is surprising that other specific precursors to anger are unstudied. It is possible that people with mental illness represent a threat to economic resources or property (i.e., taking care of people with mental illness could be perceived as financially costly). It is also possible that people with mental illness represent a threat to cooperative group functioning and trust. These threats would correspond to anger under the sociofunctional approach (Cottrell & Neuberg, 2005).

Furthermore, certain emotions that are included in the sociofunctional approach, such as disgust and guilt, are surprisingly neglected in the mental illness stigma literature. Disgust and contempt have been measured in one study, but labeled and interpreted as anger (see Sadler et al., 2015), further clouding the role of disgust in mental illness stigma. Moreover, researchers acknowledge that disgust and the disease-avoidance system may be [over]reactive to people with non-contagious physical disabilities (Park, Faulkner, & Schaller, 2003) so it is possible that the disease-avoidance system could also be sensitive to mental illness. People may wish to avoid people with mental illness out of

concern that mental illness is somehow physically contagious. Moreover, people may perceive value violations if they believe mental illness is caused by poor personal character (e.g., Corrigan & Watson, 2004), meaning that people may also experience moral disgust toward people with mental illness. Guilt has been associated with self-stigma and with seeing people with mental illness as “guilty” or responsible for their illness (Rüsch, Todd, Bodenhausen, & Corrigan, 2010a, 2010b). However, guilt has not been studied as an emotion felt in response to people with mental illness. Under the sociofunctional approach, guilt arises out of perceptions that the ingroup is immoral (i.e., threat to ingroup morality; Cottrell & Neuberg, 2005). It is possible that people experience guilt when confronted with people with mental illness if they perceive that their ingroup has engaged in discrimination or not done enough to help people with mental illness. Disgust and guilt may not be the primary emotional reactions toward people with mental illness, as perhaps fear, anger, and pity are, but could still be relevant to our knowledge of mental illness stigma. Broadening the study of emotions and threats in mental illness stigma research is a logical and necessary next step to understanding stigma of mental illness.

Previous research that connects emotions to stigmatizing beliefs offers initial support that the sociofunctional approach to prejudice will map onto mental illness stigma. Fear should theoretically relate to threats to physical safety, as it has shown to relate to perceived dangerousness (e.g., Angermeyer et al., 2004; Corrigan et al., 2002, 2003). Anger should theoretically relate to threats to reciprocity by choice, as it has been shown to relate to controllability beliefs (e.g., Corrigan et al., 2003). Pity should theoretically relate to threats to reciprocity not by choice, as it has also been shown to

relate to beliefs of controllability (negatively; e.g., Corrigan et al., 2003). However, the previously highlighted limitations show that the sociofunctional approach could grant a more nuanced and thorough framework to the study of emotional reactions toward people with mental illness.

In sum, the sociofunctional approach to prejudice can likely conceptually extend to mental illness stigma following from evidence that people often negatively view and ostracize people with mental illness (e.g., Angermeyer & Matschinger, 2005; Corrigan, 2000; Link et al., 1999; Schomerus et al., 2012; Wood et al., 2014), indicating the presence of perceived threat (Kurzban & Leary, 2001; Neuberg et al., 2000; Stangor & Dovidio, 2000). Likewise, much research suggests that affective prejudice is felt toward people with mental illness (e.g., Angermeyer et al., 2004; Corrigan et al., 2002, 2003), and the precise explanations for these emotions are ripe for further exploration. The sociofunctional approach to prejudice is a particularly useful theory for the conceptualization of mental illness stigma because the theory offers specificity for studying emotions and threats and offers a cohesive interpretational framework. Furthermore, there are practical implications of examining the various threats and emotional reactions toward mental illness; understanding precise perceived threats and emotional reactions may help researchers determine how mental illness stigma and its negative consequences may be reduced.

Other than generally apply the sociofunctional approach to prejudice to mental illness, the sociofunctional approach can apply to an additional, specific problem within mental illness stigma. Specifically, I will discuss an under-developed area of mental illness stigma—comparisons of stigma across various important contexts—and how the

sociofunctional approach is ideal to use to determine how mental illness stigma may vary across social contexts. Next, I will describe how perceived threats may depend on specific social contexts and group-specific functions.

Social Context and Salient Social Threats

The sociofunctional approach to prejudice is fundamentally a theory about intergroup emotions, what specific intergroup threat precursors can tell us about emotions, and the behavioral and motivational consequences of these emotions (Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002). Recognizing threats and emoting in response helps social groups attain their goals and maintain the functioning of the group. Therefore, it is likely that the particular goals of the groups, or what is important to a group at a particular time, will impact which threats are perceived to be most important at any given time.

Important group goals are dependent on particular group contexts; not all groups have the same goals. For example, on a school group project, students may strive for a certain evaluative grade for the project, but the goal may change for the students once they are playing a sports game. The goal in the latter situation becomes unrelated to a grade; instead, the goal may be to win against the opposing team or to have fun. If social group contexts in people's lives impact salient goals, social contexts may also impact relevant group threats. If the goal for a school project team is to receive a certain grade, then group members may be very attuned to threats that might thwart that goal, such as if another group engaged in academic dishonesty and copied the idea. In the sports game context, the group may be more attuned to threats such as an opposing team that is made

up of the fastest and most athletic players. People may be more or less attuned to specific types of threats based on the social group context.

While an examination of group threats under the sociofunctional approach to prejudice has not been directly compared across social contexts, the sociofunctional approach has been applied to individual characteristics across social domains. For example, Cottrell, Neuberg, and Li (2007) examined how individual characteristics are perceived in various social contexts. They found that almost all social groups valued trustworthiness and cooperativeness in group members, but other characteristics varied depending on the social group. For example, conscientiousness and intelligence were more desirable in a study group member, project team member, and employee, than in a golf team member, sorority or fraternity member, or close friend. Tolerance was more desirable for a study group member, project team member, sorority or fraternity member, and close friend, than in a golf team member or an employee. Cottrell et al.'s (2007) findings exemplify the idea that different group situations make different goals and needs salient, and so people find certain characteristics more or less desirable to suit the particular group goals. The same principle may apply to social groups and prejudice. Different groups have different goals and needs, and so perceived threats of outgroups may look different across these social groups.

In addition to Cottrell et al. (2007), other research has examined how people emotionally react to outgroups in potentially different ways depending on social factors. Specifically, the intergroup emotions theory (Mackie, Devos, & Smith, 2000; Smith, 1993) suggests that group emotion (and affective prejudice) changes based on social identities that are most salient at a given time. For example, Mackie et al., (2000) found

that people experience anger, fear, and contempt differently based on their perceived ingroup at the time (and therefore the perceived outgroup). Furthermore, the emotions were associated with appraisals about the ingroup, such as perceived ingroup strength. Researchers have since found similar results by manipulating social identities and observing consequential group emotions (e.g., Kuppens, Yzerbyt, Dandache, Fischer, & van der Schalk, 2013; van Zomeren, Spears, & Leach, 2008; Yzerbyt, Dumont, Wigboldus, & Gordijn, 2003). Kuppens and Yzerbyt, (2012) manipulated salience of gender identity and found differences in how women perceived Muslims, both in terms and emotional reactions and in perceived threats.

While the intergroup emotions theory does not offer the same explanatory framework for distinct threats and emotions as does the sociofunctional theory, the intergroup emotions theory does account for emotions experienced in intergroup contexts and delineates the idea that emotions differ based on social group factors. The sociofunctional approach subsumes and extends the intergroup emotions theory to offer specific causes (i.e., threats) of intergroup emotions and functions of emotions (to motivate alleviation of threats; Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002). Therefore, because emotions can change based on ingroup context (i.e., intergroup emotions theory; Mackie et al., 2000; Smith, 1993), it is probable that the threats that provoke emotions between groups change between social contexts as well.

The current studies address two particular group contexts where the groups may have different overall goals and may be attuned to very different threats: workplaces and religious communities. Workplace and religious contexts were chosen primarily based on their different functions and group goals and the way that people in these contexts may

differentially attune to threats based on these goals, offering potential differentiation under the sociofunctional approach to prejudice. Moreover, workplace and religious communities have been examined (although not directly compared) in the mental illness stigma literature, and it is apparent that people with mental illness may face distinct challenges in the workplace and in religious communities that they may not encounter in other contexts. The prevalence and importance of work and religion in many individuals' everyday lives also make these particular contexts important to study. Next, I will discuss mental illness stigma in the workplace and religious contexts and also discuss the goals and threats that may be most relevant in each context.

Workplace Stigma

It is well-documented that people experience and/or anticipate stigma in the workplace (Brohan et al., 2012; Fox, Smith, & Vogt, 2016; Jones, 2011). Many people may choose not to disclose mental health concerns at work in order to avoid stigma (Jones, 2011) or may partially or selectively disclose mental health information in order to mitigate stigma (Brohan et al., 2012). Not disclosing can be problematic because people with psychological disabilities may qualify for job accommodations, and so may be set up for failure at work by not disclosing. Additionally, anticipated stigma may relate to worse symptoms and decreased job performance for people with mental illness (Fox et al., 2016). Moreover, worry over work-related consequences may also keep individuals from seeking mental health treatment (Brown & Bruce, 2016), making workplace stigma concerns a salient and potentially detrimental consequence for the well-being of people with mental illness.

People with mental illness may also be discriminated against in the workplace, especially in the hiring process. Employers may be less likely to hire individuals with psychiatric disabilities compared to individuals with other types of disabilities (Brohan et al., 2012; Mendel, Kissling, Reichhart, Bühner, & Hamann, 2015). Furthermore, emotional reactions toward people with mental illness may impact one's willingness to engage in employment-related behaviors, such as helping someone with mental illness to find or keep a job (Corrigan, Larson, & Kuwabara, 2007). Thus, mental illness stigma, including the affective component, has many work-related consequences and requires further investigation in order to be reduced.

While a direct comparison between workplace and nonworkplace-related stigma has not yet occurred in the literature, qualitative research suggests that stigma operates somewhat similarly in the workplace as it does outside of it (Krupa, Kirsh, Cockburn, & Gewurtz, 2009). People in the workplace may be concerned about safety or perceived dangerousness of coworkers with mental illness, and people with mental illness may struggle with secrecy and concealing their mental illness in order to avoid stigma (Krupa et al., 2009). However, there is also evidence that workplace related stigma may have some differences to stigma in a general context. For example, responsibility or controllability of illness do not appear to be as relevant of a theme in workplace stigma, while concerns of incompetence appear to be especially relevant to workplace stigma, as well as feelings that people with mental illness cannot handle stress of most jobs or need too many special and unfair accommodations (Krupa et al., 2009). It appears that people may be concerned about decreased productivity and may believe that people with mental illness are an impediment or obstacle in the workplace.

The study by Krupa et al. (2009) did not specifically examine resource-related concerns of people with mental illness, but the themes they found about perceived incompetence and about needing to make special accommodations for people with mental illness may relate to concerns about resources. If people are perceived as less productive and unable to complete work on par with other employees, they may be seen as inefficient and a negative impact on the financial bottom line. There is also evidence that companies prioritize financial stability and low costs when considering support for people with mental illness. When discussing laws that help reduce structural discrimination by decreasing mental healthcare costs and requiring employers to offer benefits that accommodate people with psychological disorders, lawmakers and businesspeople cite cost to businesses as a concern for such laws (Corrigan & Lam, 2007; Levinson & Druss, 2000). Overall, people with mental illness may represent a financial and resource cost to employers and workplaces.

Because there is some evidence that stigma in the workplace may have specific facets that are more relevant (e.g., resource-related facets), and because workplace stigma has serious consequences for people with mental illness (e.g., Brohan et al., 2012; Fox et al., 2016), it is necessary to further understand workplace stigma. Understanding stigma in the workplace could help inform workplace stigma interventions that seek to make workplaces as inviting and non-stigmatizing as possible for people with mental illness. In fact, many researchers call for workplace stigma interventions and stress the importance of decreasing workplace stigma (Brohan et al., 2012; Thornicroft, Brohan, Kassam, & Lewis-Holmes, 2008). However, there may be gaps in our knowledge of workplace stigma, as a comprehensive examination of threats and prejudice has not yet been done,

and we do not yet have direct comparisons between workplace stigma and general stigma. A direct comparison would allow researchers to determine if and how workplace stigma interventions need to be specially tailored. The sociofunctional approach to prejudice is an ideal framework for such an endeavor because it offers a more comprehensive method to determine specific threats (including resource-related threats, which are often neglected in the mental illness literature) and emotions that people may experience in the workplace toward people with mental illness. Furthermore, the sociofunctional approach suggests that prejudice functions in order to further a group's goals and improve group functioning and survival, and workplaces may have some unique or especially salient functions that could influence the threats people attune to in the workplace.

Fundamentally, the workplace functions to serve the economy and resource-related goals. Specific workplaces will have specific short- and long-term goals that require group cooperation, but the primary goals of workplaces go back to resources in some way. The fundamental economic functions of the workplace are seen in terms of people earning wages through work, but also in that most workplaces operate by providing a good or service in exchange for money. Therefore, because of the clear economic and resource-related goals associated with workplaces, it is expected that threats to resources would be especially relevant and salient in the workplace context. Overall, examining perceived threats and emotion toward people with mental illness in the context of the workplace is novel and may shed light on workplace stigma.

Religion-Based Stigma

As in the workplace, there is evidence that people with mental illness are stigmatized in specific ways in religious communities. For example, from a religious perspective, mental illness could be caused by a lack of faith, by punishment from God, or even by demonic forces controlling an affected individual (Rose, 1997; Stanford, 2007; Stanford & McAlister, 2008; Wesselmann & Graziano, 2010). Much research focuses on Judeo-Christian faith groups, but qualitative research from people in a variety of religious backgrounds suggests that religious-based stigma and believing in spiritually-oriented causes and treatments of mental illness are themes across various religious and ethnic groups (Cinnirella & Loewenthal, 1999). Religion-based stigma is problematic because the stigma could prevent people with mental illness from feeling welcome in religious communities and even affect their personal faith (Stanford, 2007). Given that religion is an important aspect of many people's lives, feeling rejected by a religious community can feel like being rejected by God (e.g., Stanford, 2007). Because religion-based stigma appears to be a unique problem, and because religion is an important aspect in many people's lives, it seems prudent to better understand the stigma of mental illness in a religious context.

Interestingly, there have been no direct comparisons between stigma of mental illness between religious versus non-religious individuals, nor between religious versus non-religious contexts. Wesselmann and Graziano (2010) found that having religious beliefs about mental illness was associated with having certain general/nonreligiously-oriented beliefs about mental illness, but we do not know to what extent stigma differs between religious and non-religious contexts. Additionally, while it appears that mental

illness stigma has some unique themes within religious communities (e.g., Stanford & McAlister, 2008; Wesselmann & Graziano, 2010), we do not know how the stigma compares in terms of threats and emotional reactions. The sociofunctional approach to prejudice is an ideal framework for examining mental illness stigma in a religious context because it is more comprehensive and includes perceptions and emotions that may be especially relevant in religious contexts, such as threats to morality, norm and purity violations, and disgust.

One primary function of religion is to create a moral community and community rituals centered around a deity (Graham & Haidt, 2010). If religious groups do serve as moral communities, then religious groups are probably especially attuned to morality norms and norm violations. According to the sociofunctional approach to prejudice (Cottrell & Neuberg, 2005) and corroborating research (e.g., Graham, Haidt, & Nosek, 2009; Haidt & Joseph, 2004; Neuberg & Cottrell, 2002), value or moral violations are typically met with disgust. Indeed, research suggests that religious individuals are attuned to disgust and experience disgust after being exposed to religious outgroup (i.e., value violating) literature (Ritter & Preston, 2011). Moreover, religion appears to be intertwined with concerns of purity and cleanliness (Preston & Ritter, 2012). Religion may also relate to increased guilt (e.g., Albertsen, O'Connor, & Berry, 2006), which may correspond to perceived immorality within the ingroup (e.g., Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002; Smith, 1993). Moreover, religious people may also have more pity on people who are disadvantaged and may have charitable reactions in response (Rose, 1997). Thus, religious communities may be generally concerned with purity and morality concerns.

Therefore, I expect that people in a religious context may be especially attuned to certain threats under the sociofunctional approach to prejudice. Specifically, people in a religious context may attune to threats to physical purity, moral purity, ingroup morality, and reciprocity due to inability, and may therefore experience more physical disgust, moral disgust, guilt, and pity. The beliefs that mental illness is caused by immorality, punishment by God, or not having enough faith (Rose, 1997; Stanford, 2007; Stanford & McAlister, 2008; Wesselmann & Graziano, 2010) may relate to the threat of perceived value violation and the experience of disgust. People in a religious context may find value threats to be more salient, and this could be one reason why specific aspects of mental illness stigma (i.e., spiritually-oriented causes) appear in religious contexts. People in a religious context may also be more attuned to prosocial responses and experience more pity when encountering people with mental illness (Rose, 1997), or could even experience more guilt if they perceive the ingroup/religious group to not be meeting moral standards when faced with people with mental illness. Additionally, it would be useful to compare stigma in the religious context to stigma in a more general context. With a comparison of threats and emotions between religious and general contexts, we can determine the specific challenges that people with mental illness face in religious communities and may be able to better target stigma interventions.

The Present Studies

Overall, mental illness stigma is important to understand because it represents a social-psychological barrier to treatment seeking and overall health and wellness (e.g., Corrigan, 2004; Hatzenbuehler et al., 2013; Livingston & Boyd, 2010). Mental illness stigma also creates fewer opportunities and more discrimination in occupations, housing,

the criminal justice system, and medical care (Corrigan et al., 2004; Lawrence & Kisley, 2010). Despite the prominence of mental illness stigma and its consequences in the literature, researchers have yet to establish reliable, effective, and long-term stigma interventions (Casados, 2017; Corrigan et al., 2012). More research is needed, especially research that utilizes more nuanced approaches, in order to understand mental illness stigma and how to decrease it. Ultimately, understanding emotional reactions and the underlying causes of negative emotion toward mental illness could aid in creating effective stigma interventions. Emotions more reliably predict behavior and discrimination (Thornicroft et al., 2007), so research focusing on these important emotional reactions and precursors to emotional reactions may bring us closer to reducing mental illness stigma.

The current review demonstrates the overall usefulness of the sociofunctional approach to prejudice and the ways in which this approach can expand to mental illness stigma to provide a cohesive framework to explain emotional reactions toward people with mental illness. Specific emotions have been associated with mental illness stigma (e.g., Angermeyer et al., 2010; Corrigan et al., 2003), but we currently lack a coherent and cohesive understanding of the causes of these emotions. As reviewed, the sociofunctional approach to prejudice offers a way to systematically examine a broad range of intergroup threats and emotions and may therefore offer insight into how negative emotional reactions toward people with mental illness may be reduced. The current review also highlights how mental illness stigma across contexts is understudied. Specifically, workplaces and religious communities may be associated with specific and salient goals, potentially making people more attuned to certain threats in these contexts.

Therefore, the primary purpose of the current studies was to extend Cottrell and Neuberg's (2005) sociofunctional approach to prejudice to mental illness stigma, and the second purpose was to extend the sociofunctional approach to examine whether the threats posed by mental illness differ across social group contexts.

Study 1 determined how the sociofunctional approach to prejudice maps onto mental illness stigma and identified the threats and emotions relevant to mental illness stigma. The five primary emotions of the sociofunctional approach (i.e., anger, fear, disgust, pity, and guilt; Cottrell & Neuberg, 2005) and their related threats were assessed. Of note, disgust was broken into physical disgust and moral disgust because research has distinguished between these two emotions and their threats utilizing the sociofunctional framework (Cook et al., 2015). Cottrell & Neuberg (2005) also identified envy as an intergroup emotion that is secondary to anger, but research has not found envy to be strong in the context of mental illness stigma (Sadler et al., 2015) and was therefore not a focus of the current studies. In Study 1, I determined whether specific threats map onto theoretically corresponding emotions, and also determined whether threats and emotions that have not previously been connected to mental illness stigma are endorsed. I also determined the overall utility of assessing a broad range of threats and emotions by examining whether a single measure of general threat better predicts emotion than specific threats and also by determining how well the various emotional reactions predict social distance toward people with mental illness.

Study 1 also examined and compared two specific mental illness target groups: people with schizophrenia and people with depression. The various labels can inform how people with mental illness, as a whole, are perceived as threats, but also highlights

the potential differences between the schizophrenia and depression diagnoses.

Schizophrenia and depression are the two most commonly studied and compared disorders in the mental illness stigma literature (Angermeyer & Dietrich, 2006) and are also consistently perceived differently by the public (e.g., Angermeyer et al., 2010; Angermeyer & Matschinger, 2003a; Norman et al., 2010; Schomerus et al., 2012; Wood et al., 2014). In particular, schizophrenia is typically associated with more perceived dangerousness, fear responses, and other negative stereotypes such as unpredictability, but depression is typically associated with more perceived controllability of illness (Angermeyer et al., 2010; Norman et al., 2010; Wood et al., 2014). Schizophrenia and depression do not represent the spectrum of all mental illness diagnoses, but reflect two differently perceived diagnoses and the most commonly compared diagnoses in the literature. Therefore, the two diagnoses offer a starting point for determining whether and how threats and emotional reactions may differ across diagnoses.

Lastly, context may impact perceptions of people with mental illness because different social groups have different group goals, and therefore may perceive different group threats. Study 2 determined if threats and emotions toward people with mental illness differed based on different salient contexts. I examined contexts of the company workplace, religious community, and local community, which correspond to specific goals and relevant threats salient in these contexts.

Specifically, the workplace is a group often centered on economic goals. Some workplaces may be more ambiguous than others in terms of group goals or in terms of offering an economical good or service for monetary exchange (e.g., independent contractors or artists may not have clear group goals; public school teachers do offer a

valuable service, although the payment for service is not by individual consumer). To disambiguate the group goals and resource-related functions of the workplace in the current research, I specified my workplace term as “the company workplace.” The reference to a company workplace more clearly identifies the presence of a group with cohesive goals, especially resource-related goals. Furthermore, the corporate workplace may more clearly function to boost revenues and company value (Campbell, 2007). Due to the economic orientation of company workplaces, the company workplace context was hypothesized to be most associated with obstacle threats and their related emotion (anger). Religious communities, groups centered on morality (Graham & Haidt, 2010), purity (Preston & Ritter, 2012), and religion-based goals, were hypothesized to be most associated with contamination and morality-related threats and their related emotions (physical disgust, moral disgust, pity, and guilt). Lastly, these groups were compared to the local community, which is an ingroup that has varying goals, and so represented a more general prejudice context. Local communities are a general context that have a variety of functions, from keeping people safe (such as through law enforcement) and socializing people to comply with normative behavior (through laws, schooling, and general group conforming), to being a cohesive and functioning group in terms of overarching community goals. In sum, the local community context is a non-specific context in terms of perceiving threats and emotions, and so is an ideal control group.

Neuberg and colleagues (Neuberg & Cottrell, 2002; Neuberg et al., 2000) have also proposed moderators of perceived threats under the sociofunctional approach. Of particular relevance, they posit that individual dependence on and investment in the group could moderate perceived threats (Neuberg & Cottrell, 2002; Neuberg et al., 2000).

Therefore, not only group context, but also one's identification with the group (resembling intergroup emotions theory) may impact to what extent threats are perceived and emotions are experienced. Indeed, research has found that intergroup emotions (although specific threats were not measured) depended on strength of identification with an ingroup (van Zomeren et al., 2008). Therefore, the current studies also controlled for participants' personal identification with their experimentally assigned group.

The aims of the current studies were (a) to determine the threat and emotion profiles of mental illness and show the effectiveness of using specific threats and emotions to study mental illness stigma, (b) to compare perceived threats and emotions across depression and schizophrenia diagnoses, and (c) to determine if perceived threats and emotions differ across social contexts. Study 1 utilized a within-subjects, cross-sectional design to determine the threat and emotion profiles of prejudice toward people with mental illness (generally), schizophrenia, and depression. Study 1 also informed the second aim, as differences across specific diagnoses were examined. Study 2 utilized a between-subjects design to examine differences in threat and emotion profiles across randomly assigned contexts of company workplace, religious community, and local community. Together, these studies helped to answer questions concerning why mental illness is threatening and how social factors may change perceived threats of mental illness. Utilizing the sociofunctional approach to prejudice offers specificity and new insight to mental illness stigma, which can ultimately be used in stigma reduction interventions.

CHAPTER TWO

Study 1

The purpose of Study 1 was to extend the sociofunctional approach to prejudice to describe perceived threats and emotional reactions toward people with mental illness. Study 1 informed Aim 1 by determining relevant threats and emotions toward people with mental illness and showing the utility of using specific threats and emotions to examine mental illness stigma. Study 1 also informed Aim 2 to determine differences in perceived threats and emotions between targets with schizophrenia and depression diagnoses. Overall, the sociofunctional approach to prejudice is based on principles that specific emotional reactions to outgroup members correspond to specific threats to group functioning and create motivation to alleviate the perceived threats (Cottrell & Neuberg, 2005). I intended to uncover ways in which people with mental illness threaten group functioning by utilizing the threat-based, cohesive framework for emotional reactions.

Previous research on emotions toward people with mental illness primarily focused on fear, anger, and pity responses (e.g., Angermeyer et al., 2010, 2004; Corrigan et al., 2003). Furthermore, the precursors of these emotions are typically framed in terms of illness attributions or controllability of illness, and perceived dangerousness (Angermeyer et al., 2004, 2014; Corrigan et al., 2003, 2002). The current study determined whether other threats and emotions are relevant to mental illness stigma. In particular, disgust, guilt, their associated threats, and additional threats that fall under obstacle threats have not been directly studied in how people perceive people with mental illness. The current

study also showed the utility of using the variety of specific threats by determining how the specific threats may predict emotion better than a measure of general threat alone. In addition, it showed how previously unexplored emotions of mental illness stigma (e.g., disgust and guilt) impact social distance more than fear, anger, and pity, alone.

Covariates were also examined to examine whether the effects held when controlling for variables that may impact stigma of mental illness and emotion (familiarity with mental illness, sex, age, and ethnicity).

The current study also examined different mental illness diagnoses under the threat-based approach to gather information on how perceived threats and emotional reactions may differ across specific diagnoses. In particular, I determined whether and how perceived threats and emotional reactions toward “people with schizophrenia” differed from those of “people with depression.” Schizophrenia and depression, two often studied and compared mental illnesses in stigma research, tend to evoke different reactions from people. In particular, schizophrenia is associated with greater perceived dangerousness and fear responses, and depression is associated with more perceived controllability (e.g., Angermeyer et al., 2010; Norman et al., 2010; Wood et al., 2014). Therefore, different threat and emotion profiles between diagnostic labels were expected to be uncovered. The primary study hypotheses, which were preregistered on Open Science Framework were as follows:

1. Within each mental illness label (i.e., the general label, schizophrenia label, and depression label), I hypothesized that obstacle-related threats would predict anger, safety related threats would predict fear, physical contamination threats would predict physical disgust, value contamination threats would

predict moral disgust, reciprocity threats by inability would predict pity, and threats to group morality would predict guilt when controlling for the other classes of threat and covariates. These predictions would replicate some of Cottrell and Neuberg's (2005) work, but in a new outgroup: people with mental illness.

2. I hypothesized that specific perceived threats would account for significant additional variance of the emotional reactions than a measure of general threat alone, further showing utility of examining specific threats.
3. I hypothesized that, as the current literature would suggest, mental illness stigma would generally be characterized by fear, anger, pity, and threats related to controllability and physical safety; however, I also hypothesized that previously unexamined threats and emotional reactions would be uncovered. Mainly, I hypothesized that people would perceive threats to group cooperation, group resources, values, physical health, and ingroup morality, and express physical disgust, moral disgust, and guilt at levels greater than zero.
4. If physical disgust, moral disgust, and/or guilt were found to be relevant to mental illness stigma, I further hypothesized that these emotions would explain additional variance in a measure of social distance than using fear, anger, and pity alone, showing further utility of researching a broader range of emotional reactions to mental illness.
5. I hypothesized that people would perceive different threats and express different emotions toward people with schizophrenia relative to people with

depression. Specifically, I hypothesized that schizophrenia would be associated with more fear and safety threat and more pity and its related threat, and that people with depression would be the target of more threat to reciprocity by choice. Exploratory comparisons were made of other threats and emotions that have not yet been tied to stigma of mental illness.

Exploratory Hypotheses

In addition to the primary hypotheses listed above, I explored whether there were threats currently not included in the sociofunctional approach that are relevant to people with mental illness. I based several new threats off existing literature to see if these additional threats predicted emotion beyond the specific threats currently outlined by the sociofunctional approach. Specifically, I explored spiritual threats to explore whether people view mental illness as a spiritual problem (i.e., Stanford, 2007; Wesselmann & Graziano, 2010), work-specific and alternative resource threats to explore if people with mental illness are perceived as a problem at work or are seen as requiring a lot of time (as a resource). Social awkwardness is also a common stereotype or concern that people have when interacting with people with mental illness (Norman et al., 2010), or people may feel uncertain of how to interact with or help a person with mental illness. Moreover, some people may have concerns that mental illness is contagious (Overton & Medina, 2008).

I also explored positive emotion in the current study. In the sociofunctional approach to prejudice, positive emotion is not represented as emotion that is relevant to prejudice. However, some theories would suggest that negative emotion and positive emotion are independent in relation to prejudice. For example, people may feel

negatively toward a group of people, but also positively (e.g., admiration and envy toward Asians; Fiske et al., 2002). Thus, I explored how positive emotion may relate to stigma of mental illness and the threats outlined by the sociofunctional approach to prejudice.

Lastly, I explored a competing hypothesis that attributions (e.g., attribution theory; Weiner, Perry, & Magnusson, 1988) and other commonly held beliefs about mental illness may better predict emotions toward people with mental illness.

Attributions are commonly studied in the mental illness literature, and perhaps this is because of its utility as a theory and strong effects. Other beliefs commonly held and studied in the literature include perceived differentness, perceived dangerousness, and perceived prognosis for people with mental illness (e.g., Norman et al., 2010; Schomerus et al., 2014). To determine whether the sociofunctional approach to prejudice would contribute to our understanding of mental illness stigma beyond attributions, I explored whether specific threats would predict emotional reactions toward people with mental illness when controlling for attributions and other commonly held and studied beliefs.

Method

Participants

Study 1 had 394 participants who were workers on Amazon's Mechanical Turk (MTurk). MTurk workers were appropriate participants for the current study because they are more diverse than college student samples and are similar to other internet-based samples (Buhrmester, Kwang, & Gosling, 2011). A large portion of the sample indicated that they had been diagnosed with some mental illness by a professional at some time in

their life (48.5%). The most frequently endorsed diagnoses were generalized anxiety disorder (22%), major depression (21%), and social anxiety disorder (13%), and participants could indicate more than one diagnosis. However, only approximately 24% of the sample indicated that they believed they currently had a mental illness. About four percent of participants also indicated they identified as a person with schizophrenia, and 25% believed they were a person with depression. People who both indicated that they had been diagnosed with a mental illness and indicated that they identified as a person with mental illness were removed from analyses (people who indicated they were a person with depression, but not a person with mental illness were retained). Additionally, one individual who did not indicate that they were male or female was removed from analyses for consistency among analyses that used gender as a covariate.

Final sample. In the final sample, there were 305 participants who did not indicate both a history of mental illness and currently identify as a person with mental illness. Age ranged from 20 to 77 ($M = 40.65$, $SD = 12.26$) and 54% of the sample identified as female. Seventy-six percent of the sample identified as White/Caucasian, 9% of the sample identified as Black/African American, 6% identified as Asian/Pacific Islander, 4% identified as Hispanic/Latino, 1% identified as Native American, and 3% identified as Other or biracial. All participants indicated that they had completed high school or earned their GED and 55% completed at least a bachelor's degree.

Quality of data was increased in a variety of ways. First, I utilized a supplemental platform for the MTurk HIT, Turk Prime (Litman, Robinson, & Abberbock, 2016). Turk Prime hosts MTurk HITs and allows researchers to utilize specific features that help assure data quality. For example, I utilized the feature to block multiple IP address and

suspicious geolocations. These features were utilized in response to recent concerns that workers on MTurk may be exploiting the platform by using scripts and robot-assistance to complete HITs and/or may be utilizing multiple accounts and virtual private networks (VPNs; Dennis, Goodson, & Pearson, 2018). Certain locations for the hosting servers for these VPNs have been identified in certain geolocations (i.e., the suspicious geolocations). Additionally, the sample included workers who had at least a 95% acceptance rate on MTurk, increasing data quality (Peer, Vosgerau, & Acquisti, 2014). The sample size also does not include workers who missed more than 50% of attention checks (e.g., “How many hours are in a day?” “Mental illness is not for robots, please click strongly agree.”) and participants who provided nonsensical responses to two or more short answer questions (e.g., Q: “What other challenges, if any, do people with mental illness pose to people like you?” A: “Good” “yes” “1,” etc.). Free response answers that do not make sense are the best way to catch responders who may be cheating the MTurk platform (Dennis et al., 2018).

Power. Prior to data collection, I conducted a power analysis using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007). To detect the presence of a small effect (Cohen’s $d = 0.20$; compare to 1 on the threat and emotion scales) of the various threats and emotions, 328 participants were needed. Power under these conditions would be adequate and would allow for a conservative correction for multiple one-tailed tests ($1-\beta = .80$, $\alpha = .05/17 = .0029$). To detect small to medium differences (Cohen’s $d = .35$, Norman et al., 2010; Wood et al., 2014) between mental illness labels using a within-subjects design, 124 participants were needed ($1-\beta = .80$, $\alpha = .05/17 = .0029$). Therefore, I aimed for 328 participants by oversampling by 20% (obtaining $328*1.20 = 394$

participants), which was needed to account for excluding participants who identified as a person with mental illness and therefore may not have recognized people with mental illness as an outgroup. Recent twelve-month prevalence rates of any mental illness in adults in the United States is approximately 18% (Substance Abuse and Mental Health Services Administration, 2017). In actuality, the final sample had 305 participants who did not indicate that they were not a person with mental illness. With 305 participants, it was possible to detect small effects on endorsement of threats and emotion and small differences between the schizophrenia and depression targets (Cohen's d s = .21) and with adequate power and conservative corrections. It was also possible to detect associations as small as .16 between variables, which are similar in size to those found by Cottrell and Neuberg (2005).

Materials

Threats. Perceived threats to people with mental illness, schizophrenia, and depression were measured using a revised measurement based on that of Cottrell and Neuberg (2005). Several of the revised items have been used by Cook et al. (2015). There were 11 threats with two items measuring each. The threats included threat to reciprocity by choice (e.g., "People with mental illness, as a group, choose to take more from people like me than they give back."), threats to reciprocity by inability (e.g., "People with mental illness, as a group, are unable to contribute to people like me as much as they take."), threats to physical safety (e.g., "People with mental illness, as a group, endanger the physical safety of people like me."), threats to property (e.g., "People with mental illness, as a group, take and/or damage the personal property or resources of people like

me.”), threats to values (e.g., “People with mental illness, as a group, possess values that directly oppose the values of people like me.”), threats to personal freedoms (e.g., “People with mental illness, as a group, limit the personal freedoms of people like me.”), threats to physical health (e.g., “People with mental illness, as a group, increase the risk of physical illness for people like me.”), threats to economic resources (e.g., “People with mental illness, as a group, take economic opportunities away from people like me.”), threats to ingroup morality (e.g., “People with mental illness, as a group, remind people like me of our previous wrong doings.”), threats to group cooperation (e.g., “People with mental illness, as a group, make it difficult for things to run smoothly for people like me.”), and threats to trust (e.g., “People like me cannot trust people with mental illness, as a group.”). General threat was also measured with two items (e.g., “People with mental illness, as a group, pose a challenge to people like me.”). Items were rated on a scale from 1 (*Not at all*) to 9 (*Extremely*) and averaged such that a higher score indicated more perceived threat. Correlations between items of each threat in the current sample were similar to those reported in previous research ($r_s > .62$ across all labels).

Additional threats were also included. These were, “People with mental illness, as a group, pose a spiritual threat to people like me; are dangerous on a spiritual level for people like me; make people like me vulnerable to spiritual attack; create more work for people like me; make people like me look inferior in our work; are socially awkward around people like me; make people like me aware of our lack of helping; represent a large financial expense for people like me; take too much time from people like me; increase the risk of mental illness for people like me.” These additional threats were rated on the same scale such that a higher score indicated more perception of these threats.

Emotions. Emotions were measured using a revised measurement based on Cottrell and Neuberg's (2005) instrument. Some of the revised items have since been used by Cook et al. (2015). Of note, disgust was measured using both physical and moral disgust items for greater specificity, and have shown differentiation (e.g., Cook et al., 2015). Each emotion was measured with two to four items and I measured the emotions that corresponded to my hypotheses: anger (e.g., "How mad are you at people with mental illness, as a group"), fear (e.g., "How frightened are you at people with mental illness, as a group"), physical disgust (e.g., "How physically sickened are you at people with mental illness, as a group"), moral disgust (e.g., "How morally disgusted are you at people with mental illness, as a group"), pity (e.g., "How much do you pity people with mental illness, as a group"), and guilt (e.g., "How guilty do people with mental illness, as a group, make you feel"). General negative emotion was also measured (e.g., "How much do you dislike people with mental illness, as a group?"). Items were rated on scales from 1 (*Not at all*) to 9 (*Extremely*) and averaged such that a higher score indicated more expressed emotion. Correlations between anxiety and fear items ($r_s > .76$) and anger and resentment items ($r_s > .86$) were high and were combined as they were in previous research (Cottrell & Neuberg, 2005). Correlations between items of each emotion in the current sample were moderate to strong ($r_s > .52$ across all labels).

For exploratory analyses, positive emotions were also assessed. General positive emotion was measured with two items ("How positive do you feel..." and "How much do you like...") and sympathy was measured with two items ("How much compassion..." and "How much sympathy...") that were also used by Cottrell and Neuberg (2005), but were used as distractor items. Other positive emotions were determined based on feeling

happy and feeling admiration and respect for people with mental illness (e.g., “How happy do you feel when you think about people with mental illness as a group” and “How much do you respect people with mental illness as a group?”).

Social distance. A social distance scale was used to measure social or behavioral avoidance of people with mental illness. The social distance items were originally developed by Link, Cullen, Frank, and Wozniak (1987) and have since been used in several studies as a dependent variable of negative emotion (e.g. Angermeyer & Matschinger, 2003b; Angermeyer et al., 2004). Seven items measure behavioral intentions to interact with an outgroup member, with items such as “How would you feel about renting a room in your home to someone with mental illness?” rated from 1 (*in any case*) to 4 (*in no case at all*), such that a high score indicates more desired social distance. Internal consistency for the items was high ($\alpha = .89$).

Familiarity with mental illness. A measure of familiarity of mental illness (Holmes, Corrigan, Williams, Canar, & Kubiak, 1999) used a checked-box format where participants indicated levels of familiarity of mental illness ranging from 1 (*I have never observed a person that I was aware had a severe mental illness*) to 12 (*I have a severe mental illness*). Participants could check multiple boxes, but the highest box checked indicated an individual’s score, with a higher score indicating more familiarity with mental illness.

History of mental illness diagnosis. To determine which participants needed to be excluded based on mental illness diagnoses, I asked not only about diagnosis history, but also about one’s identification with having a mental illness. The items were “Have you

been previously diagnosed with a mental illness by a doctor or mental health professional?” (answered yes/no), and “Do you identify as a person with mental illness; a person with schizophrenia; a person with depression?” (three separate questions answered yes/no). Participants had to respond “yes” to the first two questions to be excluded. This method was expected to preserve sample size, as exclusion based on any mental illness diagnosis may drastically reduce sample size. Furthermore, the reason why people with mental illness should be excluded is so that people with mental illness are considered an outgroup to the participants. Therefore, asking about one’s personal identification as a person with mental illness was meant to retain participants that have perhaps been diagnosed with a mental illness a long time ago, but no longer experience symptoms, or people who have been prescribed medicine for mental health issues but do not identify as having a mental illness.

Attributions and beliefs. Items previously used by Schomerus and colleagues (2014) were included to measure participants’ endorsement of onset responsibility of illness (“*People with mental illness have themselves to blame for getting their condition.*”), offset responsibility (“*People with mental illness have to pull themselves together to get well again.*”), perceived differentness (“*Somewhat people with mental illness are complete different from other people.*”), perceived dangerousness (“*People with mental illness are dangerous.*”), and prognosis (“*With treatment, the condition of people with mental illness can improve markedly.*”). Items were rated on a likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Procedure

Participants were recruited online from Amazon's Mechanical Turk (MTurk). Participants provided consent online and were given a small monetary compensation (\$1.05) in exchange for participation. Participants first responded to threat and emotion questions with "people with mental illness" as the target group. They then responded to the threats and emotions of "people with schizophrenia" and "people with depression" in a randomized order. The general category went first in all cases because people's schema of "mental illness" could be influenced by prior thinking about people with schizophrenia and people with depression. Participants then indicated other beliefs about mental illness, including attributions and other measures not used in analyses for the current study. Participants also indicated their familiarity with mental illness. Lastly, participants responded to demographic questions and indicated whether they have ever been diagnosed with a mental illness and/or identify as a person with mental illness. Participants were debriefed.

Data Analysis

Analyses were performed in R (version 3.5.1, R Core Team, 2018). Participants who indicated having been diagnosed with a mental illness and identified as a person with mental illness were excluded from analyses, as these individuals may not see people with mental illness as an outgroup.

Hypothesis 1. I looked at the mental illness target label separately. I mirrored some of the analyses of Cottrell and Neuberg (2005) and performed one multiple regression for each emotion. Each class of threat (obstacle, physical safety, physical contamination,

moral contamination, reciprocity by inability, and ingroup morality threats) was simultaneously entered as predictors in each regression, and it was determined which type of threat best predicts each emotion (anger, fear, physical disgust, moral disgust, pity, and guilt), controlling for the other types of threats. I tested my hypothesis by determining which threats were significant predictors of each emotion ($p < .05$, two-tailed) when controlling for the other types of threats.

Hypothesis 2. I performed multiple regression with each emotion as a dependent variable. I compared the variance explained with the general threat entered first as a single predictor, to the variance explained when all of the emotion-specific threats were included with the general threat. It was expected that the specific threats would add significant variance (ΔR^2) over the general threat alone.

Hypothesis 3. I looked at the general “mental illness” label only and used one-sample t tests to determine whether people endorse specific perceived threats and emotions above zero. I compared the sample value to 1.00 (the lower end point) for the specific threats and emotions. There were seventeen tests in total, and I used a Bonferroni correction for each test ($p < .05/17 = .0029$). Specifically, I tested threats to resources, property, freedoms, reciprocity by choice, social coordination, trust, physical safety, physical health, values, reciprocity by inability, and perceived ingroup morality, as well as anger, fear, physical disgust, moral disgust, pity, and guilt toward people with mental illness. One-sample t tests provided the information necessary to determine whether specific threats and emotions are endorsed toward people with mental illness.

Hypothesis 4. I used multiple regression to predict social distance scores. I compared variance explained when fear, anger, and pity were entered as predictors of social distance (as these are currently the primary emotions studied in the literature) to the variance explained when physical disgust, moral disgust, and guilt were also included. If disgust and/or guilt were found to be relevant to mental illness stigma (Hypothesis 3), then it was expected that they would account for additional variance (ΔR^2) in social distance above fear, anger, and pity alone. If disgust and/or guilt were found to be irrelevant to mental illness stigma, then I did not expect that they would explain variance in social distance.

Hypothesis 5. I planned for dependent samples *t* tests to determine whether the schizophrenia and depression target groups differed across the threats and emotions. However, the differences between the paired data were not normally distributed for any comparisons, suggesting that an assumption freer test was more appropriate and would preserve power. Therefore, Wilcoxon T comparisons were used to test whether there were differences between the schizophrenia and depression targets ($p < .05/17 = .0029$).

Results

Missing Data

There were a small number of cases with missing data on an item-level for the threat and emotion measures. Because the very small amount of missing data was missing at random (three or fewer missing values on 13 total items across all participants and items) it was deemed adequate to utilize expectation maximization (EM), a single

imputation method. This technique may be acceptable for various degrees of missingness, including missingness found in the present study, and has advantages over more conventional missing data techniques (Musil, Warner, Yobas, & Jones, 2002; Rubin, Witkiewitz, Andre, & Reilly, 2007).

Descriptive Statistics

Means, standard deviations, skew, and kurtosis for the threat and emotion variables are in Table 2.1. The descriptive statistics suggest that there was positive skew in the variables ($sk > 0$), especially in the emotion variables; many people responded that they did not (at all) have these perceptions of or emotions toward people with mental illness. While a few variables were outside of the acceptable range of skew ($sk > 1$), standard analyses were performed assuming robustness of the statistics to non-normality, and patterns of results with transformed variables are also discussed when appropriate.

Additionally, Table 2.2 shows large correlations among variables. For each regression model described, variance inflation factors (VIFs) were calculated to measure multicollinearity. In models involving the obstacle, safety, health, values, reciprocity, and ingroup morality threats entered as simultaneous predictors, there was problematic multicollinearity (i.e., $VIFs > 10$; Cohen, Cohen, West, & Aiken, 2003). In particular, the obstacle threat showed redundancy with the other threats ($VIF = 10.79$). However, the correlations observed among the variables indicated that the individual obstacle threats did not consistently correlate with another class of threats. Generally, each obstacle threat shared different patterns of correlations with the other variables and sometimes correlated more strongly with threats of other classes than threats within the obstacle class. This made it difficult to determine whether the multicollinearity could be reduced by

combining certain threat variables. Therefore, threat variables were not combined and were interpreted according to the original theory; however, multicollinearity will be discussed throughout the results, as relevant to the hypotheses.

Table 2.1

Descriptive Statistics for Threats and Emotion toward People with Mental Illness

Variable	<i>M</i>	<i>SD</i>	Skew	Kurtosis
General Threat	3.13	2.14	0.72	-0.76
Trust	3.20	2.11	0.71	-0.56
Social Coordination	2.89	2.07	1.01	-0.02
Resources	2.52	1.91	1.28	0.85
Property	2.90	1.95	0.90	-0.18
Freedoms	2.64	2.04	1.14	0.08
Reciprocity by Choice	3.07	1.98	0.69	-0.66
Obstacles ¹	2.87	1.82	0.88	-0.22
Safety	3.20	2.08	0.73	-0.54
Health	2.43	1.87	1.33	0.89
Values	2.60	1.89	1.09	0.13
Reciprocity by Inability	3.53	2.08	0.45	-0.82
Perceived Ingroup Morality	2.42	1.91	1.28	0.55
General Dislike	2.25	1.81	1.68	2.10
Anger	1.96	1.70	1.97	2.88
Fear	3.05	1.93	0.84	-0.10
Physical Disgust	1.94	1.68	1.98	3.01
Moral Disgust	1.97	1.82	1.96	2.80
Pity	5.33	2.26	-0.24	-0.83
Guilt	2.40	1.79	1.25	0.58
Social Distance	19.92	6.65	-0.03	-0.48

Note. *N* = 305. *M* = mean. *SD* = standard deviation. ¹Obstacle threat was an average of trust, social coordination, resources, property, freedoms, and reciprocity by choice threats.

Hypothesis 1: Specific Threats Predict Specific Emotions

To determine which group threats predicted each emotion toward people with mental illness, each threat was entered as a predictor. As described above, there was evidence of multicollinearity when obstacles were entered as a single class of predictors, but combining predictors would not help the theoretical model. Thus, for each criterion, I used the classes of threats as predictors, as planned. The planned model is shown without

(Model 1) and with the inclusion of relevant covariates (Model 2; familiarity with mental illness, age, sex, and ethnicity).

Diagnostics on each model were also performed. The distributions of residuals and heteroscedasticity were examined for each model. For most models, residuals were normally distributed, although some were not normally distributed when plotted. This was probably due to skewness in some of the variables and heteroscedasticity. To determine heteroscedasticity, the non-constant variance score test was performed. All models showed heteroscedasticity except for the models involving pity as the dependent variable (i.e., Breusch-Pagan χ^2 s > 37.92, $p < .001$; Breusch & Pagan, 1979). Overall, because of some skew present in all variables, I decided to use HC3 robust standard errors for all regression analyses, which are shown in each table below. Even when heteroscedasticity is not present, these robust standard errors have been shown to be similar to using the ordinary least squares standard errors (Long & Ervin, 2000). Using log-transformed variables also did not change the main pattern of results, nor did they show better fit for each model in terms of R^2 .

Additionally, I examined the results when cases who were multivariate outliers (i.e., +/- 3 on studentized residuals), high in leverage, and high in influence in each model were removed. The general patterns of results were similar with and without these cases; however, about 70 cases were removed from each model when problematic cases were removed. This high proportion of cases suggests that being a “problematic” case by standard conventions was not necessarily uncommon in this sample and that it may be more problematic to remove such a large number of cases from analyses. Removing the cases tended to increase model fit and increase regression coefficients, suggesting that

Table 2.2

Correlations among Threats and Emotions

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. General Threat																				
2. Trust	.67																			
3. Social Coordination	.66	.79																		
4. Resources	.60	.68	.78																	
5. Property	.67	.80	.85	.77																
6. Freedoms	.68	.75	.82	.83	.80															
7. Reciprocity by Choice	.69	.79	.80	.78	.80	.77														
8. Obstacles ¹	.73	.89	.92	.89	.92	.91	.91													
9. Safety	.68	.82	.76	.71	.85	.79	.76	.86												
10. Health	.61	.69	.75	.80	.76	.81	.71	.83	.73											
11. Values	.72	.75	.79	.83	.81	.85	.78	.88	.76	.82										
12. Reciprocity by Inability	.63	.68	.68	.63	.69	.62	.79	.75	.65	.59	.62									
13. Perceived Ingroup Morality	.61	.67	.73	.80	.71	.82	.68	.81	.66	.79	.83	.55								
14. General Dislike	.59	.67	.69	.71	.66	.71	.70	.76	.66	.63	.73	.59	.64							
15. Anger	.54	.60	.69	.72	.65	.71	.65	.74	.60	.69	.75	.49	.69	.84						
16. Fear	.59	.70	.59	.52	.62	.58	.60	.67	.70	.48	.59	.56	.49	.69	.61					
17. Physical Disgust	.57	.63	.69	.74	.64	.75	.62	.75	.63	.75	.75	.52	.76	.82	.84	.63				
18. Moral Disgust	.55	.58	.63	.73	.62	.72	.63	.72	.61	.74	.75	.45	.71	.78	.86	.56	.84			
19. Guilt	.44	.46	.50	.53	.45	.52	.47	.54	.45	.56	.54	.44	.62	.59	.67	.53	.71	.64		
20. Pity	.15	.14	.09	.01	.10	.03	.08	.08	.15	-.01	.06	.14	.02	.11	.09	.33	.09	.05	.22	
21. Social Distance	.38	.59	.45	.38	.49	.42	.48	.52	.50	.34	.39	.46	.32	.38	.28	.49	.31	.28	.23	.19

Note. $N = 305$. ¹Obstacle threat was an average of trust, social coordination, resources, property, freedoms, and reciprocity by choice threats.

results shown here are perhaps more conservative. Removing these cases also did not tend to improve heteroscedasticity nor multicollinearity.

Anger. As shown in Table 2.3, obstacle and value threats were statistically significant predictors of anger when controlling for the other threat class predictors. When covariates were included, the results remained similar. Additionally, females endorsed significantly less anger, and increases in age were also associated with less anger. The hypothesized threat class was obstacle threat, thus, the hypothesis regarding anger was supported. Obstacle threats did predict anger when controlling for covariates, although threat to values was also a strong predictor.

Fear. As shown in Table 2.4, threat to group safety was a statistically significant predictor of fear when controlling for the other threat class predictors, as hypothesized. The effect held when covariates were included. Thus, the hypothesis regarding fear was supported. Additionally, threat to health was associated with less fear.

Physical disgust. As shown in Table 2.5, threats to health and perceived ingroup morality were statistically significant predictors of physical disgust when controlling for all classes of threats. These positive associations held when covariates were included. Additionally, females endorsed significantly less physical disgust. The hypothesized threat class was threat to health; thus the hypothesis was supported, although it was not expected that threat to perceived ingroup morality would also be a strong predictor.

Table 2.3

Regression Results of Threats Predicting Anger

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.12	[-0.11, 0.34]	0.85*	[0.18, 1.52]
Obstacles	0.40*	[0.08, 0.73]	0.40*	[0.09, 0.72]
Safety	-0.09	[-0.23, 0.05]	-0.07	[-0.20, 0.07]
Health	0.09	[-0.11, 0.30]	0.11	[-0.09, 0.31]
Values	0.32**	[0.10, 0.55]	0.32**	[0.10, 0.55]
Reciprocity by Inability	-0.07	[-0.20, 0.05]	-0.10	[-0.24, 0.04]
Perceived Ingroup Morality	0.07	[-0.13, 0.27]	0.02	[-0.17, 0.21]
Familiarity			0.02	[-0.02, 0.06]
Female			-0.45**	[-0.72, -0.18]
Age			-0.01*	[-0.02, -0.00]
Non-White			-0.29	[-0.62, 0.04]
<i>R</i> ²	.61***		.63***	
<i>AIC</i>	918.54		906.83	
<i>BIC</i>	948.31		951.48	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown. **p* < .05, ***p* < .01, ****p* < .001.

Table 2.4

Regression Results of Threats Predicting Fear

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.74***	[0.48, 1.00]	0.63	[-0.18, 1.44]
Obstacles	0.26	[-0.11, 0.64]	0.26	[-0.11, 0.64]
Safety	0.46***	[0.24, 0.68]	0.46***	[0.24, 0.68]
Health	-0.29*	[-0.57, -0.00]	-0.29*	[-0.58, -0.00]
Values	0.19	[-0.09, 0.48]	0.19	[-0.10, 0.48]
Reciprocity by Inability	0.10	[-0.05, 0.26]	0.11	[-0.05, 0.27]
Perceived Ingroup Morality	-0.04	[-0.26, 0.18]	-0.03	[-0.25, 0.19]
Familiarity			-0.02	[-0.07, 0.03]
Female			0.11	[-0.22, 0.45]
Age			0.00	[-0.01, 0.02]
Non-White			-0.02	[-0.42, 0.39]
<i>R</i> ²	.53***		.54***	
<i>AIC</i>	1048.80		1055.64	
<i>BIC</i>	1078.56		1100.29	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown. **p* < .05, ***p* < .01, ****p* < .001.

Moral disgust. As shown in Table 2.6, threats to health and values were statistically significant predictors of moral disgust when controlling for all classes of threats. When covariates were included, the pattern of results were the same. Additionally, females endorsed significantly less moral disgust. The hypothesized threat class was threat to values; thus the hypothesis was supported. However, threat to health was also a predictor of moral disgust.

Pity. As shown in Table 2.7, threat to safety positively predicted pity when controlling for all classes of threats. When covariates were included, familiarity with mental illness and age were positively associated with pity, and safety threats remained a statistical predictor of pity. The hypothesized threat class for pity was threat to reciprocity due to inability, which was not a significant predictor and which only shared a trivial positive correlation with pity. The hypothesis for pity was not supported.

Guilt. As shown in Table 2.8, threats to reciprocity due to inability and perceived ingroup morality were statistically significant predictors of guilt when controlling for all classes of threats. When covariates were included, the pattern of results was the same, and females endorsed significantly less guilt. The hypothesis for guilt was supported, although the association with threat to reciprocity due to inability was unexpected.

Table 2.5

Regression Results of Threats Predicting Physical Disgust

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	-0.00	[-0.23, 0.22]	0.36	[-0.32, 1.04]
Obstacles	0.17	[-0.10, 0.44]	0.17	[-0.10, 0.44]
Safety	-0.03	[-0.18, 0.11]	-0.01	[-0.16, 0.14]
Health	0.24*	[0.02, 0.45]	0.24*	[0.02, 0.46]
Values	0.14	[-0.05, 0.33]	0.13	[-0.06, 0.32]
Reciprocity by Inability	-0.01	[-0.12, 0.11]	-0.02	[-0.14, 0.09]
Perceived Ingroup Morality	0.26**	[0.09, 0.43]	0.24**	[0.06, 0.41]
Familiarity			-0.00	[-0.04, 0.03]
Female			-0.36**	[-0.61, -0.11]
Age			-0.00	[-0.01, 0.01]
Non-White			-0.13	[-0.41, 0.14]
<i>R</i> ²	.65***		.66***	
<i>AIC</i>	874.47		872.16	
<i>BIC</i>	904.23		916.80	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.6

Regression Results of Threats Predicting Moral Disgust

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.05	[-0.17, 0.27]	0.84*	[0.12, 1.55]
Obstacles	0.20	[-0.09, 0.49]	0.19	[-0.10, 0.49]
Safety	-0.01	[-0.17, 0.14]	0.01	[-0.15, 0.18]
Health	0.29*	[0.04, 0.54]	0.29*	[0.05, 0.54]
Values	0.28*	[0.05, 0.52]	0.28*	[0.04, 0.51]
Reciprocity by Inability	-0.11	[-0.24, 0.02]	-0.12	[-0.26, 0.02]
Perceived Ingroup Morality	0.14	[-0.05, 0.34]	0.10	[-0.10, 0.30]
Familiarity			0.00	[-0.04, 0.05]
Female			-0.37*	[-0.66, -0.08]
Age			-0.01	[-0.02, 0.00]
Non-White			-0.18	[-0.51, 0.16]
<i>R</i> ²	.62***		.64***	
<i>AIC</i>	950.86		946.13	
<i>BIC</i>	980.62		990.78	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.7

Regression Results of Threats Predicting Pity

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	4.72***	[4.17, 5.27]	1.92***	[0.95, 2.89]
Obstacles	-0.14	[-0.67, 0.40]	-0.12	[-0.63, 0.38]
Safety	0.35*	[0.06, 0.64]	0.30*	[0.03, 0.58]
Health	-0.34	[-0.69, 0.02]	-0.25	[-0.56, 0.06]
Values	0.08	[-0.27, 0.42]	0.12	[-0.18, 0.42]
Reciprocity by Inability	0.16	[-0.03, 0.35]	0.10	[-0.09, 0.28]
Perceived Ingroup Morality	-0.03	[-0.29, 0.23]	0.03	[-0.22, 0.28]
Familiarity			0.09*	[0.01, 0.17]
Female			0.06	[-0.44, 0.57]
Age			0.05***	[0.03, 0.07]
Non-White			-0.14	[-0.74, 0.46]
<i>R</i> ²	.07**		.17***	
AIC	1356.92		1328.35	
BIC	1386.68		1373.00	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.8

Regression Results of Threats Predicting Guilt

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.73***	[0.43, 1.04]	1.07*	[0.23, 1.92]
Obstacles	-0.16	[-0.49, 0.16]	-0.16	[-0.50, 0.17]
Safety	0.00	[-0.16, 0.17]	0.03	[-0.15, 0.20]
Health	0.18	[-0.05, 0.40]	0.19	[-0.03, 0.42]
Values	0.02	[-0.20, 0.24]	0.02	[-0.21, 0.24]
Reciprocity by Inability	0.15*	[0.03, 0.27]	0.12*	[0.00, 0.25]
Perceived Ingroup Morality	0.46***	[0.27, 0.66]	0.43***	[0.22, 0.64]
Familiarity			0.01	[-0.04, 0.07]
Female			-0.41*	[-0.77, -0.05]
Age			-0.00	[-0.02, 0.01]
Non-White			-0.25	[-0.65, 0.16]
<i>R</i> ²	.41***		.42***	
AIC	1073.59		1073.87	
BIC	1103.35		1118.51	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Separating the predictors. Multicollinearity was also assessed with all of the threat predictors entered separately (separating out the obstacle predictors) and multicollinearity was reduced (VIFs 2.79 to 6.15). Thus, I explored how the threats individually predicted each emotion, as shown in Table 2.9. While multicollinearity was reduced in these models, it did not shed light on many nuances in the data. Overall, it appears that when predicting fear, trust was masked in the planned model, but that was the only specific threat that predicted an emotion in this analysis over the planned analysis. In general, each model had few statistically significant predictors and large standard errors, even for the theoretically consistent specific threats for each emotion. The high R^2 values paired with few statistically significant predictors suggest that multicollinearity was still an issue in these models.

Hypothesis 2: Specific Threats Account for More Variance than General Threat

For each emotion, general threat was entered as a predictor in Model 1, followed by a multiple regression with the specific threats included for Model 2. R^2 , AIC, and BIC values were compared between the models. Overall, the specific threats accounted for a significant amount of variance in each emotion above and beyond general threat alone, supporting Hypothesis 2.

For anger, general threat was a significant predictor and accounted for 29% of the variance, while 61% of the variance was accounted for when general threat and the specific threats were included. This was a statistically significant increase in R^2 ($\Delta R^2 = .32, p < .001$) and fit indices also preferred the second model ($AIC_1 = 1087.60$, $AIC_2 = 920.18$, $BIC_1 = 1098.76$, $BIC_2 = 953.66$). For fear, general threat was a significant predictor and accounted for 35% of the variance, while 54% of the variance was

Table 2.9

Regression Results of All Specific Threats Predicting Each Emotion

Predictor	Anger <i>b</i>	95% CI [LL, UL]	Fear <i>b</i>	95% CI [LL, UL]	Physical Disgust <i>b</i>	95% CI [LL, UL]	Moral Disgust <i>b</i>	95% CI [LL, UL]	Pity <i>b</i>	95% CI [LL, UL]	Guilt <i>b</i>	95% CI [LL, UL]
Intercept	0.14	[-0.09, 0.36]	0.69***	[0.42, 0.97]	0.02	[-0.20, 0.24]	0.07	[-0.15, 0.29]	4.68**	[4.11, 5.26]	0.72***	[0.41, 1.02]
Freedoms	0.06	[-0.14, 0.25]	-0.00	[-0.28, 0.27]	0.09	[-0.12, 0.31]	0.11	[-0.13, 0.36]	-0.18	[-0.54, 0.18]	-0.13	[-0.37, 0.12]
Trust	-0.04	[-0.21, 0.14]	0.31**	[0.09, 0.53]	0.07	[-0.10, 0.23]	-0.02	[-0.21, 0.17]	0.10	[-0.19, 0.39]	0.04	[-0.15, 0.23]
Social Coordination	0.15	[-0.02, 0.32]	0.05	[-0.18, 0.28]	0.10	[-0.06, 0.26]	-0.06	[-0.22, 0.11]	0.11	[-0.19, 0.40]	0.08	[-0.11, 0.27]
Property	-0.05	[-0.30, 0.20]	-0.10	[-0.35, 0.15]	-0.16	[-0.35, 0.03]	-0.10	[-0.36, 0.15]	-0.02	[-0.36, 0.32]	-0.22	[-0.45, 0.01]
Resources	0.15	[-0.07, 0.36]	-0.02	[-0.25, 0.21]	0.16	[-0.04, 0.36]	0.20	[-0.08, 0.48]	-0.11	[-0.45, 0.22]	0.02	[-0.22, 0.26]
Reciprocity Choice	0.10	[-0.09, 0.30]	-0.03	[-0.27, 0.21]	-0.10	[-0.26, 0.06]	0.12	[-0.10, 0.34]	-0.12	[-0.39, 0.14]	-0.04	[-0.23, 0.15]
Safety	-0.02	[-0.20, 0.16]	0.42***	[0.17, 0.66]	0.01	[-0.16, 0.19]	0.05	[-0.14, 0.24]	0.32	[-0.02, 0.66]	0.05	[-0.14, 0.24]
Health	0.07	[-0.14, 0.28]	-0.24	[-0.65, 0.16]	0.21	[-0.01, 0.43]	0.26	[-0.00, 0.52]	-0.30	[-0.79, 0.18]	0.18	[-0.09, 0.46]
Values	0.32**	[0.09, 0.55]	0.23	[-0.08, 0.53]	0.15	[-0.03, 0.33]	0.25*	[0.02, 0.48]	0.12	[-0.25, 0.50]	0.05	[-0.19, 0.28]
Reciprocity Inability	-0.08	[-0.22, 0.06]	0.11	[-0.04, 0.25]	0.03	[-0.10, 0.17]	-0.12	[-0.26, 0.03]	0.17	[-0.05, 0.38]	0.14*	[0.01, 0.28]
Perceived Ingroup Morality	0.05	[-0.15, 0.25]	-0.02	[-0.24, 0.19]	0.20*	[0.02, 0.38]	0.09	[-0.10, 0.29]	0.02	[-0.23, 0.27]	0.47***	[0.24, 0.69]
<i>R</i> ²	.62***		.56***		.67***		.64***		.08*		.42***	
<i>AIC</i>	921.02		1040.90		868.98		945.01		1362.77		1078.07	
<i>BIC</i>	969.38		1089.27		917.34		993.37		1411.13		1126.44	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

accounted for when general threat and the specific threats were included. This was a statistically significant increase in explained variance ($\Delta R^2 = .20, p < .001$) and fit indices also preferred the second model ($AIC_1 = 1142.08, AIC_2 = 1046.12, BIC_1 = 1153.24, BIC_2 = 1079.60$). For physical disgust, general threat was a significant predictor and accounted for 33% of the variance, while 65% of the variance was accounted for when general threat and the specific threats were included. This was a statistically significant increase in R^2 ($\Delta R^2 = .32, p < .001$) and fit indices also preferred the second model ($AIC_1 = 1065.07, AIC_2 = 876.11, BIC_1 = 1076.23, BIC_2 = 909.59$). For moral disgust, general threat was a significant predictor and accounted for 30% of the variance, while 62% of the variance was accounted for when general threat and the specific threats were included. This was a statistically significant increase in variance explained ($\Delta R^2 = .32, p < .001$) and fit indices preferred the second model ($AIC_1 = 1126.80, AIC_2 = 952.62, BIC_1 = 1137.96, BIC_2 = 986.10$). For pity, general threat was a significant predictor and accounted for 2% of the variance, while 8% of the variance was accounted for when general threat and the specific threats were included. This was a statistically significant increase in explained variance ($\Delta R^2 = .05, p < .05$) and fit indices somewhat preferred the second model ($AIC_1 = 1360.67, AIC_2 = 1356.13, BIC_1 = 1371.83, BIC_2 = 1389.61$). For guilt, general threat was a significant predictor and accounted for 19% of the variance, while 41% of the variance was accounted for when general threat and the specific threats were included. This was a statistically significant increase in variance explained ($\Delta R^2 = .22, p < .001$) and fit indices preferred the second model ($AIC_1 = 1158.47, AIC_2 = 1075.00, BIC_1 = 1169.63, BIC_2 = 1108.48$).

Hypothesis 3: Threats and Emotions Endorsed

Table 2.10 shows the means, standard deviations, confidence intervals, and effect sizes for the endorsement of each perceived threat and emotion toward people with mental illness. Supporting the hypothesis, all specific threats and emotions presented were statistically different from 1, which was the low point on the measurement (endorsing “*Not At All*”), and were significant with a conservative p-value correction ($ts > 9.28, ps < .001$). The confidence intervals represent one-sided confidence intervals, which correspond to the one-sided t -tests. When variables with high skew and kurtosis were square root transformed to improve the variable distributions, the pattern of results were unchanged.

Hypothesis 4: Emotions Predict Social Distance

As with the threats, the emotions were highly correlated, and so regression models that contained all emotions as predictors did show some multicollinearity (VIFs < 5.18). Because no VIFs were greater than 10 (i.e., conventional cutoff for problematic multicollinearity; Cohen et al., 2003), models were performed and interpreted as planned. Diagnostics were also performed, showing that residuals were fairly normally distributed, but that heteroscedasticity was present (Breusch-Pagan $\chi^2 = 13.36, p < .001$). HC3 robust standard errors were used in the results below to account for the heteroscedasticity. Removing problematic cases tended to increase model fit and increase regression coefficients, suggesting that results shown here are perhaps conservative estimates.

Table 2.11 shows the regression models with emotions predicting social distance. Overall, Model 2 showed that physical disgust, moral disgust, and guilt accounted for some additional variance beyond anger, fear, and pity alone (Model 1), but not a

Table 2.10

Descriptive Statistics, One-Sided Confidence Intervals, and Effect Sizes For Threats and Emotions

Perception	<i>M</i> (<i>SD</i>)	95%CI [LL,]	Cohen's <i>d</i>
Resource Threat	2.52 (1.91)	[2.34,]	0.80
Property Threat	2.90 (1.95)	[2.72,]	0.97
Freedom Threat	2.64 (2.04)	[2.45,]	0.80
Reciprocity by Choice Threat	3.07 (1.98)	[2.88,]	1.05
Social Coordination Threat	2.89 (2.07)	[2.69,]	0.91
Trust Threat	3.20 (2.11)	[3.00,]	1.04
Physical Safety Threat	3.20 (2.08)	[3.01,]	1.06
Physical Health Threat	2.43 (1.87)	[2.25,]	0.76
Value Threat	2.60 (1.89)	[2.42,]	0.85
Reciprocity by Inability Threat	3.53 (2.08)	[3.33,]	1.27
Perceived Morality of Ingroup Threat	2.42 (1.91)	[2.24,]	0.74
Anger	1.96 (1.70)	[1.80,]	0.56
Fear	3.05 (1.93)	[2.86,]	1.06
Physical Disgust	1.94 (1.68)	[1.78,]	0.56
Moral Disgust	1.97 (1.82)	[1.80,]	0.53
Pity	5.33 (2.26)	[5.12,]	1.92
Guilt	2.40 (1.79)	[2.23,]	0.78

Note. *N* = 305. *M* = mean. *SD* = standard deviation. All means were statistically different from 1 (*ts* > 9.28; *df* = 304, *ps* < .001). *LL* indicates the lower limit of a one-sided confidence interval.

statistically significant amount. Fear was the only predictor of social distance. Results were consistent when covariates were added (Model 3). Thus, the hypothesis that disgust and guilt would help explain social distance toward people with mental illness was not supported.

Hypothesis 5: Differences Between Schizophrenia and Depression Targets

Table 2.12 shows the means and standard deviations of each threat and emotion toward the schizophrenia and depression targets. Planned analyses were dependent samples *t*-tests to determine the differences between targets. However, due to the differences in the targets being non-normally distributed, Wilcoxon T comparisons were deemed more appropriate to test the differences between the paired data. There is no intuitive effect size for Wilcoxon T statistics, so Cohen's *d* statistics were included in Table 2.12 to show differences in means between schizophrenia and depression targets.

Table 2.11

Regression Results of Emotions Predicting Social Distance

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]	Model 3 <i>b</i>	95% CI [LL, UL]
Intercept	14.52***	[12.41, 16.64]	14.48***	[12.33, 16.64]	12.00***	[9.02, 14.98]
Anger	-0.13	[-0.62, 0.37]	-0.42	[-1.46, 0.61]	-0.38	[-1.47, 0.72]
Fear	1.73***	[1.20, 2.25]	1.69***	[1.17, 2.21]	1.69***	[1.16, 2.21]
Pity	0.07	[-0.31, 0.45]	0.12	[-0.28, 0.52]	0.01	[-0.42, 0.43]
Physical Disgust			0.34	[-0.87, 1.55]	0.31	[-0.93, 1.56]
Moral Disgust			0.26	[-0.86, 1.38]	0.33	[-0.84, 1.49]
Guilt			-0.29	[-0.82, 0.24]	-0.24	[-0.77, 0.28]
Familiarity					0.09	[-0.13, 0.31]
Female					0.17	[-1.28, 1.61]
Age					0.05	[-0.01, 0.11]
Non-White					0.46	[-1.43, 2.35]
<i>R</i> ²	.24***		.25***		.26***	
<i>AIC</i>	1946.28		1950.22		1954.34	
<i>BIC</i>	1964.88		1979.98		1998.98	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Tests showed that threats to property, trust, freedoms, reciprocity by choice and inability, safety, health, and values were higher toward people with schizophrenia compared to people with depression. Fear was also expressed more toward people with schizophrenia compared to people with depression. A conservative threshold was used to control for multiple tests. Overall, the hypothesis was partially supported. There was evidence that people with different diagnostic labels may be perceived differently, although it was expected that people with depression would be perceived as more of a threat to reciprocity by choice. It was also expected that people would feel more pity toward people with schizophrenia. When individuals who identified as a person with depression or schizophrenia were removed, the pattern of results was consistent.

Table 2.12

Comparisons Between Schizophrenia and Depression Targets

Variable	Schizophrenia <i>M (SD)</i>	Depression <i>M (SD)</i>	Cohen's <i>d</i>
Resources	2.38 (1.90)	2.23 (1.87)	0.12
Property ^a	3.07 (2.16)	2.33 (1.93)	0.39
Social Coordination	2.82 (2.08)	2.61 (2.05)	0.14
Trust ^a	3.61 (2.36)	2.56 (2.00)	0.53
Freedom ^a	2.51 (1.94)	2.20 (1.83)	0.24
Reciprocity by Choice ^a	3.05 (2.19)	2.73 (2.06)	0.19
Safety ^a	3.77 (2.29)	2.39 (1.88)	0.63
Health ^a	2.51 (1.93)	2.10 (1.81)	0.29
Values ^a	2.52 (1.98)	2.29 (1.91)	0.16
Reciprocity by Inability ^a	3.46 (2.25)	2.87 (2.03)	0.34
Perceived Ingroup Morality	2.17 (1.84)	1.99 (1.66)	0.15
Anger	1.89 (1.62)	2.00 (1.78)	-0.10
Fear ^a	3.55 (2.25)	2.40 (1.78)	0.64
Pity	5.40 (2.49)	5.16 (2.44)	0.13
Physical Disgust	1.92 (1.69)	1.83 (1.66)	0.10
Moral Disgust	1.89 (1.72)	1.91 (1.74)	-0.02
Guilt	2.17 (1.72)	2.06 (1.66)	0.10

Note. $N = 305$. ^aSignificant differences between schizophrenia and depression targets using Wilcoxon T test, $p < .0029$ (corrected cutoff).

Exploratory Results

Additional threats. Included in the study were additional exploratory threats toward people with mental illness. These threats were entered as predictors in multiple regression models of each emotion to see if they predicted emotion when controlling for the original classes of threats. Because 10 exploratory threats were tested for each emotion, a p-value correction was used ($p = .05/10 = .005$), and only those threats meeting this statistical criteria are reported. When using robust standard errors to account for heteroscedasticity, no additional threats predicted anger, physical disgust, or moral disgust above the original classes of threats. Threat to social awkwardness predicted fear above the other predictors ($b = .26$, $SE = .07$, $p < .001$), threat to being aware of one's lack of helping predicted pity ($b = .28$, $SE = .07$, $p < .001$), and threat to being aware of one's lack of helping predicted guilt ($b = .15$, $SE = .05$, $p = .001$) when controlling for the

original classes of threats. Taken together, it appears that other specific threats may be somewhat relevant to each emotion expressed toward people with mental illness. The additional threats did explain additional variance in each emotion: 6% additional variance in anger, 10% in fear, 5% in physical disgust, 7% in moral disgust, 10% in pity, 9% in guilt (not accounting for covariates).

Positive emotion. When general positive emotion and general negative emotion were entered as predictors of social distance, general negative emotion positively predicted social distance ($b = 1.25$, 95%CI [0.89, 1.62], $p < .001$) and general positive emotion negatively predicted social distance ($b = -0.92$, 95%CI [-1.31, -0.53], $p < .001$). General positive emotion was also a statistical predictor of social distance beyond the six specific negative emotions ($b = -0.97$, 95%CI [-1.43, -0.50], $p < .001$).

When happiness, sympathy, and admiration were explored as specific positive emotions, happiness predicted social distance above and beyond the six specific negative emotions ($b = -0.64$, 95%CI [-1.13, -0.15], $p = .011$), and admiration did as well ($b = -0.50$, 95%CI [-0.98, -0.01], $p = .044$). Taken together, it appears that positive emotion is relevant to prejudice toward people with mental illness. While negative emotions tended to predict more social distance, more positive emotion tended to predict less social distance.

Because results showed that general positive emotion, feelings of happiness, and feelings of admiration may be especially relevant to mental illness stigma, I also explored whether the classes of threats predicted these positive emotions. Table 2.13 shows that the positive emotions were generally associated with less perceived obstacle threats, but more perceived threats to health and perceived ingroup morality.

Table 2.13

Regression Results of Threats Predicting Positive Emotions

Predictor	General Positive <i>b</i>	95% CI [LL, UL]	Happy <i>b</i>	95% CI [LL, UL]	Admire <i>b</i>	95% CI [LL, UL]
Intercept	6.04***	[5.53, 6.56]	2.27***	[1.76, 2.79]	5.23***	[4.68, 5.77]
Obstacles	-0.64***	[-0.98, -0.31]	-0.28	[-0.59, 0.03]	-0.86***	[-1.25, -0.46]
Safety	0.03	[-0.15, 0.21]	0.01	[-0.19, 0.22]	0.11	[-0.09, 0.32]
Health	0.29**	[0.09, 0.50]	0.43**	[0.11, 0.76]	0.35*	[0.07, 0.63]
Values	-0.21	[-0.47, 0.05]	0.08	[-0.21, 0.38]	0.00	[-0.29, 0.30]
Reciprocity by Inability	-0.06	[-0.22, 0.09]	-0.18	[-0.32, -0.04]	-0.02	[-0.19, 0.16]
Perceived Ingroup Morality	0.38***	[0.20, 0.56]	0.33**	[0.11, 0.56]	0.28*	[0.05, 0.51]
<i>R</i> ²	.14***		.21***		.11***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Attributions and other beliefs. While the sociofunctional theory did somewhat map onto stigma of mental illness in that certain theoretically relevant classes of threats predicted the corresponding emotions, a competing hypothesis was explored. To determine whether attributions and other commonly held beliefs about mental illness better predicted emotional reactions toward people with mental illness, five common stigmatizing beliefs were entered as predictors in multiple regression analyses predicting each emotion. In a second model, the specific threat corresponding to each emotion was entered as an additional predictor. Overall, these five perceptions did account for a sizable amount of variance of each emotion, although not as much variance as the specific threats. When the corresponding class of specific threat was included, the specific threat did account for additional variance in each emotion beyond the common attitudes.

Tables 2.14 to 2.19 show how the common beliefs predicted each emotion without (Model 1) and with the specific threat included (Model 2). Of note, blaming

people with mental illness for acquiring mental illness predicted anger, physical disgust, moral disgust, pity, and guilt beyond the specific threat corresponding to each emotion. Specifically, placing more blame on people with mental illness for mental illness onset was associated with more anger, physical disgust, moral disgust, and guilt, and was associated with less pity toward people with mental illness. This suggests that emotions toward people with mental illness may be predicted by specific group threats, but attributions (i.e., attribution theory; Weiner et al., 1988) may additionally contribute to our understanding of emotions. Perceiving a more positive prognosis and believing people with mental illness to be dangerous were associated with more pity when controlling for the relevant reciprocity threat. Only perceived safety threat and beliefs of dangerousness predicted fear.

Table 2.14

Regression Results of Beliefs Predicting Anger

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.34	[-0.47, 1.15]	-0.04	[-0.67, 0.60]
Onset Responsibility	0.63***	[0.38, 0.88]	0.41***	[0.21, 0.61]
Offset Responsibility	-0.01	[-0.16, 0.14]	-0.07	[-0.21, 0.06]
Differentness	0.09	[-0.08, 0.27]	-0.05	[-0.20, 0.11]
Dangerousness	0.42***	[0.23, 0.60]	0.04	[-0.13, 0.21]
Prognosis	-0.16*	[-0.30, -0.01]	-0.05	[-0.17, 0.08]
Obstacle Threat			0.59***	[0.45, 0.73]
<i>R</i> ²	.37***		.59***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, ** *p* < .01, **p* < .001.

Table 2.15

Regression Results of Beliefs Predicting Fear

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.49	[-0.47, 1.45]	0.07	[-0.80, 0.95]
Onset Responsibility	0.13	[-0.13, 0.39]	0.00	[-0.22, 0.22]
Offset Responsibility	-0.02	[-0.19, 0.16]	-0.06	[-0.22, 0.11]
Differentness	0.28*	[0.07, 0.49]	0.16	[-0.03, 0.35]
Dangerousness	0.77***	[0.53, 1.01]	0.34*	[0.07, 0.61]
Prognosis	-0.01	[-0.18, 0.17]	0.08	[-0.09, 0.25]
Safety Threat			0.53***	[0.40, 0.65]
<i>R</i> ²	.32***		.53***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.16

Regression Results of Beliefs Predicting Physical Disgust

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.46	[-0.39, 1.30]	-0.14	[-0.79, 0.51]
Onset Responsibility	0.77***	[0.50, 1.04]	0.44***	[0.19, 0.70]
Offset Responsibility	-0.03	[-0.15, 0.10]	-0.04	[-0.16, 0.08]
Differentness	0.10	[-0.05, 0.25]	-0.01	[-0.17, 0.15]
Dangerousness	0.26**	[0.09, 0.43]	0.07	[-0.12, 0.26]
Prognosis	-0.15*	[-0.30, -0.01]	-0.01	[-0.14, 0.12]
Health Threat			0.54***	[0.39, 0.70]
<i>R</i> ²	.38***		.62***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.17

Regression Results of Beliefs Predicting Moral Disgust

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.18	[-0.62, 0.98]	-0.46	[-1.11, 0.19]
Onset Responsibility	0.81***	[0.54, 1.09]	0.48***	[0.25, 0.72]
Offset Responsibility	0.00	[-0.14, 0.15]	-0.02	[-0.16, 0.12]
Differentness	0.06	[-0.10, 0.22]	-0.10	[-0.24, 0.05]
Dangerousness	0.35***	[0.15, 0.56]	0.10	[-0.08, 0.29]
Prognosis	-0.14	[-0.28, 0.00]	0.03	[-0.10, 0.15]
Value Threat			0.59***	[0.47, 0.72]
<i>R</i> ²	.38***		.61***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.18

Regression Results of Beliefs Predicting Pity

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	3.04***	[1.87, 4.21]	2.85***	[1.72, 3.97]
Onset Responsibility	-0.49***	[-0.77, -0.22]	-0.50***	[-0.76, -0.23]
Offset Responsibility	-0.06	[-0.29, 0.17]	-0.09	[-0.32, 0.14]
Differentness	0.01	[-0.25, 0.28]	-0.04	[-0.30, 0.23]
Dangerousness	0.51***	[0.22, 0.81]	0.40*	[0.09, 0.71]
Prognosis	0.54***	[0.31, 0.78]	0.56***	[0.33, 0.78]
Reciprocity Threat Due to Inability			0.17*	[0.03, 0.32]
<i>R</i> ²	.15***		.16***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 2.19

Regression Results of Beliefs Predicting Guilt

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	1.16*	[0.22, 2.11]	0.64	[-0.15, 1.42]
Onset Responsibility	0.61***	[0.34, 0.89]	0.26*	[0.01, 0.50]
Offset Responsibility	0.04	[-0.13, 0.21]	0.02	[-0.14, 0.18]
Differentness	0.11	[-0.09, 0.30]	-0.01	[-0.20, 0.17]
Dangerousness	0.08	[-0.14, 0.30]	-0.04	[-0.24, 0.16]
Prognosis	-0.09	[-0.27, 0.09]	0.04	[-0.12, 0.19]
Perceived Ingroup Morality Threat			0.53***	[0.39, 0.66]
<i>R</i> ²	.19***		.40***	

Note. *N* = 305. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Discussion

Study 1 extended the sociofunctional approach to a novel group: people with mental illness. The specific threats somewhat mapped onto the correct theoretically relevant emotions, partially supporting Hypothesis 1, and specific threats better predicted each emotion than general threat, supporting Hypothesis 2. When controlling for covariates, obstacle threats did map onto anger, although values threat did as well; safety threat predicted fear, although health did too (negative relationship); health threat predicted physical disgust, although perceived ingroup morality threat did too; value threat predicted moral disgust, although health threat did too; reciprocity threats did not predict pity, but safety threat did; and perceived threat to ingroup morality did predict guilt, although reciprocity threat due to inability did as well. These results suggest that specific threats may engender specific emotions toward outgroups; however, the specificity of these connections may not be as strong as originally thought, at least when people with mental illness is the target group.

The specific threats and emotions measured in the current study were endorsed at levels greater than zero, supporting Hypothesis 3. Of note, all threats and emotions had a medium to large effect size (difference from one, or endorsing “*Not at all*” for threats and emotions). Although many of the threats and emotions were not endorsed on the high end of the measurement scale, this may indicate a non-trivial and impactful amount of stigma overall. Additionally, the measurements used measured explicit prejudice. Because there was evidence of explicit prejudice, there could be a greater amount of underlying implicit prejudice that people hold, but perhaps refrain from acknowledging or admitting. In the current study, the most endorsed threats toward people with mental illness were threats to safety, trust, and reciprocity (both due to inability and choice) and the most endorsed emotions were fear and pity. While these most endorsed threats and emotions are supported in the mental illness literature, the current results suggest that other threats and emotions are relevant to study in relation to people with mental illness. People may be concerned about damage to property, economic resources that people with mental illness may require, or how people with mental illness could spread illness or undesirable values. There is evidence that people are concerned about more than only dangerousness and illness attributions.

Results also showed that fear was the strongest predictor of social distance toward people with mental illness. While Hypothesis 4 was not supported because disgust and guilt did not significantly contribute to our understanding of social distance, it is still plausible that disgust and guilt are relevant emotions that may predict other outcomes that researchers should continue to explore. Physical disgust, moral disgust, and guilt were all endorsed at levels greater than zero and, interestingly, they were endorsed at levels

similar to or higher than anger. Anger is one of the three main emotions that research has previously tied to stigma of mental illness (i.e., Angermeyer et al., 2010, 2004; Corrigan et al., 2003) and the results of Study 1 suggest that it is possible that disgust and guilt are just as important as anger in stigma of mental illness. There are two possible explanations here.

It is possible that anger, disgust, and guilt are indistinguishable from each other and represent a general negative emotionality. This explanation is plausible because anger and disgust may be difficult to distinguish and may be easily combined in prejudice research (e.g., Hutcherson & Gross, 2011; Fiske et al., 2002; Sadler et al., 2015). The high correlations between both types of disgust and anger in Study 1 support this explanation. Study 1 also showed high correlations between disgust, anger, and guilt; however, researchers do not commonly lump guilt with other emotions such as anger and disgust. Guilt is a social emotion and is more inwardly focused (i.e., wanting to right one's wrongs; Cottrell & Neuberg, 2005; Lazarus, 1991; Neuberg & Cottrell, 2002). So, it is not necessarily the case that *all* of these emotions are similar enough to be considered a general negativity felt toward people with mental illness. While it is plausible that moral disgust, physical disgust, and anger are similar enough to be studied as a single emotion along the lines of anger-contempt-disgust, as has been done in other studies (i.e., Sadler et al., 2015), future researchers should carefully consider the advantages of studying these emotions combined versus distinctly. There are functional differences between anger, physical disgust, and moral disgust that are supported in the literature (Hutcherson & Gross, 2011; Molho, Tybur, Güler, Balliet, & Hofmann, 2017) and should not be easily dismissed.

A second explanation is that these emotions are all somewhat less endorsed in comparison to fear and pity toward “people with mental illness,” but that the emotions would be more distinguishable toward other mental illness targets. For example, people may experience more anger and disgust toward people with certain types of mental illness or in certain situations. This possibility was supported by the current study. People with schizophrenia and people with depression were perceived differently. While the current study did not find differences in anger, disgust, and guilt between schizophrenia and depression targets, the differences could appear between different target groups and/or with a higher-powered analysis. People may also experience different emotions toward certain people with mental illness. In other words, toward “people with mental illness, as a group,” people may experience less anger, disgust, or guilt, but toward other types of targets, such as “my spouse with anxiety” or “my parent with depression,” people may feel more anger, disgust, and guilt. Ultimately, it may be a function of the term “people with mental illness” that causes people to endorse a lot of fear and pity, but not as much anger, disgust, and guilt.

Lastly, Hypothesis 5 was generally supported in that people with schizophrenia and depression were perceived differently. People with schizophrenia were perceived as a greater threat to property, trust, freedom, reciprocity by choice and inability, safety, health, and values. People also expressed more fear toward people with schizophrenia. Thus, people with different mental illnesses may elicit specific perceived threats and emotions. However, other differences that were expected were not found; it was expected that people with depression would be the target of more threat to reciprocity due to inability, but the opposite was found. Ultimately, the findings in the current study support

stigma literature that suggests that schizophrenia is one of the most stigmatized mental illness due to common misconceptions and strong perceptions of dangerousness and violence (e.g. Angermeyer et al., 2010; Angermeyer & Matschinger, 2003a; Norman et al., 2010; Schomerus et al., 2012; Wood et al., 2014).

Exploratory Results

Exploratory results showed that there may be additional threats outside of the ones originally outlined by the sociofunctional approach that may be relevant to people with mental illness. The exploratory threats contributed additional variance to each emotion. In particular, threat to social awkwardness predicted fear, and threat to being aware of one's lack of helping predicted pity and guilt. While social awkwardness is not a safety threat, it may represent a threat of feeling anxious or unsure of how to behave. The threat to being aware of one's lack of helping somewhat corresponds to perceived ingroup morality, but seemed to capture something slightly different and independent. Perhaps if people don't know how to help people with mental illness and/or are aware of their lack of helping, it creates feelings of guilt and pity for the group that is not receiving aid.

Additionally, positive emotion may also be relevant to mental illness stigma. Positive emotion showed independence from the negative emotions and predicted social distance beyond negative emotions alone. Specifically, feeling happy about oneself when considering people with mental illness and also admiring people with mental illness were associated with less social distance. The positive emotions were generally predicted by perceiving less obstacle threat, but more threats to health and ingroup morality. It makes sense that perceiving that one's group resources, freedoms, social coordination, and

property are not threatened by another group is associated with more positive feelings toward that group. Moreover, if people with mental illness are potentially harming the perceived morality of the ingroup, this may lead to more positive emotion in an attempt to remedy the situation. Perhaps experiencing more positive and reconciliatory emotion could repair the perceived morality of the ingroup. The finding that threat to health predicted positive emotions was somewhat surprising. If someone perceived threats to physical health, it is unexpected that positive emotion would follow. This finding may need to be explored further in future research.

Other exploratory results were that believing that people with mental illness are to blame for having their mental illness was associated with more anger, physical disgust, moral disgust, and guilt, as well as less pity, controlling for other commonly held beliefs about mental illness. When the specific threat for each emotion was included, blaming a person for their mental illness was still associated with more anger, physical disgust, moral disgust, and guilt, and less pity. Fear was not predicted by attributional beliefs. Attribution theory suggests that how people attribute illness in terms of responsibility impacts the way that people feel toward stigmatized groups (Weiner et al., 1988). Uncontrollable stigmas may generally predict more pity and less anger, whereas controllable stigmas may evoke less pity and more anger (Weiner et al., 1988), and attributions have been studied in relation to mental illness stigma (i.e., Corrigan & Watson, 2004). Because both the specific threats and beliefs about attributions predicted emotions in the current study, it is not clear from these results that one theory better explains emotions over the other; both attributions and specific threats may be important to our understanding of negative emotions toward people with mental illness.

Limitations

A significant limitation when interpreting the results of Hypotheses 1 and 2 is that multicollinearity was present in the regression models. Overall, the various threats were highly correlated. Interpretation of predictors is more tentative when multicollinearity is high, and standard errors become less stable. For example, to say that increases in value and obstacle threats predict an increase in anger when controlling for the other threats – when the other threats would naturally be increasing as well – makes exact linear interpretations more difficult. However, because significant predictors did emerge in the models in expected ways, it may be possible to interpret these as significant predictors *in spite of* the multicollinearity (O’Brien, 2007). In other words, because it is common that multicollinearity produces statistically insignificant predictors, even when R^2 is high, it is impressive that theoretically consistent predictors did emerge and showed independence from the other predictors.

While multicollinearity was seemingly reduced when the obstacle threats were broken down in each regression model, it was apparent that multicollinearity was also affecting these models. Variance explained was high, but with few statistically significant predictors, and estimates even switched signs in unexpected ways. This is challenging because the zero order correlation between the threat and dependent variables were strong and positive, making a change in sign difficult to explain, especially when the threat predictors also shared positive correlations.

Overall, the high correlations between threat and emotion variables suggest that there may be some important individual differences to explore as causes of negative perceptions toward people with mental illness. For example, it may be possible that there

is a qualitative difference between people who do and do not endorse explicit prejudice toward people with mental illness. Interestingly, familiarity with mental illness and demographic variables were not consistent predictors in these models. Instead, there may be differences in how people recognize their negative emotions or feel negative emotions in general. These potential subgroups could also explain the presence of heteroscedasticity throughout the models.

Also relevant to the sociofunctional theory is how people feel toward outgroups relative to a specific ingroup, and the specific goals of an ingroup may affect perceived threats. Study 2 builds on Study 1 by evoking a more clear ingroup with specific functions and goals. Study 2 determined whether these threats and emotions differed across social settings and whether specific group goals impacted how people perceived people with mental illness. Furthermore, Study 2 served as a replication for some of the analyses of Study 1.

CHAPTER THREE

Study 2

The purpose of Study 2 was to determine if threat profiles differed across social contexts. Study 2 determined how threats changed across contexts of company workplace, religious community, and local community due to the different group goals and needs that may be relevant in each context. These contexts represent important, everyday contexts, and also contexts in which people with mental illness experience stigma (e.g., Jones, 2011; Stanford, 2007). Comparing the company workplace and religious community to a general local community context provided information about whether and how stigma differs across these important contexts.

Certain individual characteristics or environmental cues could make people more attuned to specific threats (Neuberg & Cottrell, 2002; Neuberg et al., 2000). There is evidence that different social group contexts make individual characteristics more or less desirable in group members (Cottrell et al., 2007), and that threats and emotions may differ across salient social identities (e.g., Kuppens & Yzerbyt, 2012). However, direct comparisons across salient social contexts to see how specific contexts may impact a variety of threats and emotions has not yet been explored.

Because corporate workplaces generally function in terms of economic goals (Campbell, 2007), it is expected that people would be more concerned by anger-related economic and goal threats when considering a company workplace context. Similarly, church communities may be more concerned by purity, value, morality, and reciprocity

threats (due to prosocial expectations), and so disgust-, pity-, and guilt-related threats may be more salient for people considering a religious community context. The current study also examined participants' identification with the manipulated social group, because one's dependence on and investment in the group may impact perceived threats to the group (Neuberg & Cottrell, 2002; Neuberg et al., 2000). Controlling for individual identification also helped control for the fact that not all participants engage with a corporate workplace setting, religious community, nor local community. Therefore, I hypothesized that threats and emotions would differ across contexts when accounting for individual identification with the group. Specifically:

1. When considering a company workplace (compared to local community), people would perceive more resource and social coordination threats toward people with mental illness when controlling for individual identification with the group. Thus, anger was expected to be higher in the company workplace context relative to the local community context.
2. When considering a religious community (compared to local community), people would perceive more value and contamination threats, reciprocity threats, and threats to ingroup morality when controlling for individual identification with the group. Thus, physical disgust, moral disgust, pity, and guilt were expected to be higher in the religious context than the local community context.

Exploratory /Replication

In addition to the main hypotheses above, I also explored whether general religiosity predicted perceptions of mental illness. It was possible that the experimental manipulation would not show differences across contexts but that religious people would

hold different views of mental illness. I also examined whether identification with the group would interact with experimental condition such that identification with certain groups would be important for predicting threats and emotions in certain groups over others.

I also used Study 2 to replicate some of the findings in Study 1. In particular, I expected to replicate the findings that specific threats would map onto specific emotions, that specific threats would account for additional variance over general threat alone, and that the various threats and emotions would be endorsed at levels greater than zero. I also sought to replicate the exploratory findings from Study 1 that additional threats not specified by the original sociofunctional approach to prejudice (Cottrell & Neuberg, 2005) would be relevant to mental illness stigma and that the specific threats would predict emotions above attributions and other commonly studied beliefs. I also examined whether the classes of threat would predict positive emotions in order to replicate some of the findings from Study 1 that positive emotions are important and may be independent from negative emotions in mental illness stigma.

Method

Participants

Study 2 had 665 participants who were workers on MTurk. The same standards from Study 1 applied here (e.g., workers had 95% approval rating; no duplicate IP addresses, etc.). Overall, a sizable portion of the sample indicated that they had been diagnosed with at least one mental illness by a professional at some time in their life (47%). The most common diagnoses indicated—and some people indicated more than

one—were major depression (19%), generalized anxiety disorder (19%), and social anxiety disorder (11%). However, only approximately 19% of the sample indicated that they believed they currently had a mental illness. People who both indicated that they had been diagnosed with a mental illness and indicated that they identified as a person with mental illness were removed from analyses. Additionally, two individuals who did not indicate that they were male or female were removed from analyses for consistency among analyses that used sex as a covariate. Therefore, there were 538 total participants who were used in analyses.

Final sample. In the final sample, there were 538 participants who did not indicate both a history of mental illness and currently identify as a person with mental illness. Fifty-seven percent of the final sample was female. Ages ranged from 18 to 82 ($M = 42.11$, $SD = 13.22$). Seventy-seven percent of participants identified as White, 9% identified as African American, 5% identified as Asian, 4% identified as Hispanic, 1% identified as Middle Eastern, 1% identified as Native American, and 4% identified as Other, Bi-racial, or Multi-racial. A majority of the sample identified with a monotheistic tradition, including Christianity, Islam, and Judaism (62%), and participants also indicated they were Agnostic (15%), Atheist (8%), Hindu or Buddhist (2%), or had no religion or another religion (12%). Almost all of the final sample indicated they had completed high school or a GED (99.6%), and 58.5% had completed at least a bachelor's degree. Quality of data was increased by using the Turk Prime platform to block multiple IP address and suspicious geolocations, as in Study 1. Additionally, the sample included workers who had at least a 95% acceptance rate on MTurk, increasing data quality (Peer et al., 2014).

Power. Using the sociofunctional approach, Cottrell et al. (2007) found moderate to large effects in their within-subjects design examining how desired traits differed across contexts. Also using the sociofunctional approach, Kuppens and Yzerbyt (2012) used a between-subjects design and found that among women rating Muslims, experimentally manipulating social identity led to small to moderate effects. Specifically, they found that social identity group predicted threats with standardized betas ranging from .06 to .34, with the smallest statistically significant effect being $b^* = 0.20$ (Cohen's $d = .40$). Therefore, I used G*Power (Faul et al., 2007) and determined that 185 participants per group (555 total) were needed to find small to moderate effects across the threats and emotions (Cohen's $d = 0.40$; $1-\beta = .80$, $\alpha = .05/17$). Like Study 1, the initial sample size (665) reflected 20% oversampling and exclusion of participants who had mental illness and identified as a person with mental illness. In actuality, the final sample of participants who did not indicate a history of mental illness was 538, which provided power to detect small to medium effect sizes (Cohen's $d = .41$).

Materials

Threats and emotions. Study 2 utilized the same threat and emotion measure as Study 1, but the threat and emotion items were prefaced with context information. Directions for the threat items were “The following questions inquire about your impressions of people with mental illness in a corporate workplace/religious community/local community. If the particular setting is unfamiliar to you, respond as you think you would in that setting.” Directions for the emotion items were “In a corporate workplace/in a religious community/in a local community...” Correlations between the

two items for each threat correlated highly ($r_s > .57$). Items for each emotion also correlated highly ($r_s > .61$), except guilt which had a moderate correlation between items ($r = .45$). The same exploratory additional threats and positive emotions from Study 1 were also included to attempt to replicate results across studies.

Identification with the group. Participants were asked four questions based on those used in Van Zomeren et al. (2008) to measure identification with the group (e.g., “I see myself as a member of a local community/company workplace/religious community.”). Responses ranged from 1 (*not at all*) to 7 (*very much*). The four items were summed to measure individual identification with their assigned group. Internal consistency of the items was high ($\alpha = .97$).

Familiarity with mental illness. Participants took the same familiarity with mental illness measure as in Study 1. Participants indicated in what capacity, if any, they had ever interacted with someone with mental illness. Scores ranged from 1 to 12, with 12 indicating the most familiarity with mental illness.

History of mental illness diagnosis. As in Study 1, participants were asked if they have been diagnosed with a mental illness and whether they identify as a person with mental illness. Participants who affirmed both questions were excluded from analyses.

Attributions and other beliefs. As in Study 1, attributions and beliefs about differentness, dangerousness, and prognosis were measured.

Religiosity. Religiosity was measured with a four-item measure of general religiousness (Rowatt, LaBouff, Johnson, Froese, & Tsang, 2009). Items measured how

religious participants considered themselves, frequency of religious service attendance, frequency of scripture or sacred text reading, and frequency of prayer or meditation. Items showed high internal consistency ($\alpha = .87$). Items were standardized and added such that a higher score indicated more general religiosity.

Procedure

Participants were recruited online from MTurk. Participants provided consent online and were given a small monetary compensation (\$0.50) in exchange for participation. Participants were randomly assigned to a context condition (workplace, religious community, or local community). Participants rated threats and emotions in relation to people with mental illness. All ratings were within only one of the social contexts. Following the ratings, participants indicated their identification with their assigned group, other beliefs about people with mental illness, and familiarity with mental illness. They then indicated whether they have ever been diagnosed with a mental illness and responded to demographic questions. Participants read an online debriefing form last.

Data Analysis

Analyses were performed in R (version 3.5.1, R Core Team, 2018). As in Study 1, participants who indicated that they have had a mental illness diagnosis and see themselves as a person with mental illness were excluded from analyses.

To assess differences in threats and in emotions across social contexts, I compared the company workplace context to the local community context, and the religious community context to the local community context. I created one dummy coded

condition variable for the company workplace context analyses, coded 1 for the company workplace condition and 0 for the local control condition. I created another dummy coded condition variable for the religious context analyses, coded 1 for religious context and 0 for local control context. I used a series of multiple regression analyses for each context. Each specific threat and emotion were a dependent variable in a regression model with the dummy-coded context variable, group identification variable, and covariates entered as predictors. I was able to determine which threats and emotions differed across contexts when controlling for identification with the group and covariates. Within each context (workplace and religious community), I controlled for Type 1 error from multiple tests using a Bonferroni correction ($p < .05/17 = .0029$).

Results

Missing Data

As in Study 1, there was very little missing data (2 or fewer values on items from 5 variables), so these missing data points on the item-level were dealt with by expectation maximization, as in Study 1.

Hypotheses 1 and 2

Overall, the hypothesis that people with mental illness would be perceived differently in specific social contexts was not supported. The social context did not predict any specific threat or emotion when controlling for identification with the group, familiarity with illness, sex, age, and ethnicity (*bs* range from -0.57 to 0.58, *ts* < 2.57, *ps* > .011; see Table 3.1). Due to evidence of heteroscedasticity in most of the models, robust standard errors were used. Some effects did approach statistical significance, such

as workplace context was associated with more threat to social coordination ($b = 0.58$, $SE = .22$, $p = .011$), less pity ($b = -0.57$, $SE = .24$, $p = .017$), and less guilt ($b = -0.40$, $SE = .18$, $p = .022$), but did not meet the conservative cutoff.

Table 3.1

Means and Standard Deviations of Threats and Emotion in Each Social Context

Variable	Workplace <i>M (SD)</i>	Religious Community <i>M (SD)</i>	Local Community <i>M (SD)</i>
	<i>N</i> = 184	<i>N</i> = 178	<i>N</i> = 176
General Threat	3.97 (2.18)	3.53 (2.01)	3.35 (2.07)
Trust	3.44 (2.25)	3.34 (2.24)	3.31 (2.18)
Social Coordination	3.47 (2.22)	3.00 (1.98)	2.83 (1.94)
Resources	2.61 (1.95)	2.33 (1.81)	2.32 (1.79)
Property	3.00 (1.99)	3.02 (2.01)	3.04 (1.93)
Freedoms	2.80 (1.97)	2.49 (1.95)	2.40 (1.81)
Reciprocity by Choice	3.11 (2.02)	3.21 (2.11)	3.09 (2.00)
Safety	3.45 (2.07)	3.36 (2.17)	3.25 (1.98)
Health	2.59 (1.86)	2.38 (1.85)	2.26 (1.73)
Values	2.80 (1.92)	2.69 (1.90)	2.69 (1.89)
Reciprocity by Inability	3.72 (1.96)	3.99 (2.08)	3.94 (2.09)
Perceived Ingroup Morality	2.27 (1.62)	2.28 (1.78)	2.24 (1.70)
Anger	1.99 (1.70)	1.97 (1.63)	1.77 (1.38)
Fear	3.23 (2.01)	3.44 (1.94)	3.15 (1.89)
Physical Disgust	1.86 (1.56)	1.97 (1.64)	1.78 (1.43)
Moral Disgust	1.82 (1.57)	1.95 (1.72)	1.67 (1.44)
Guilt	2.20 (1.54)	2.31 (1.61)	2.54 (1.73)
Pity	4.96 (2.19)	5.45 (2.14)	5.55 (2.30)
Identification with the group	21.39 (6.45)	14.88 (8.61)	21.03 (6.21)

Note. $N = 538$. M = mean. SD = standard deviation. There were no differences in specific threats and emotions between the local community group and the workplace or religious community contexts.

Exploratory Results

While the experimental condition had no effect, I examined whether religiosity in general predicted perceived threats and emotions. More religiosity was associated with more threat to reciprocity due to choice ($b = .07$, $SE = .03$, $p = .015$), threat to safety ($b = 0.07$, $SE = .03$, $p = .022$), threat to health ($b = 0.06$, $SE = 0.03$, $p = .013$), threat to ingroup morality ($b = .06$, $SE = .02$, $p = .006$), anger ($b = .05$, $SE = .02$, $p = .012$), fear ($b = .08$,

$SE = .03, p = .004$), physical disgust ($b = .04, SE = .02, p = .045$), moral disgust ($b = .05, SE = .02, p = .017$), and pity ($b = .09, SE = .03, p = .003$) when controlling for condition, identification with the group, familiarity with mental illness, sex, age, and ethnicity. There were no differences in religiosity across conditions ($F(1, 536) = 1.38, p = .241$).

Additionally, I examined whether identification with the group would predict more threats and emotions within certain contexts more than others. Using multiple regression, I examined interactions between group identification and the dummy variables. It was found that group identification interacted with the religious community condition in predicting perceptions of people with mental illness. Specifically, the interaction was present in resource threat ($b = 0.45, 95\% \text{ CI } [0.02, 0.88], p = .039$), property threat ($b = 0.64, 95\% \text{ CI } [0.19, 1.09], p = .006$), social coordination threat ($b = 0.59, 95\% \text{ CI } [0.12, 1.06], p = .014$), trust threat ($b = 0.84, 95\% \text{ CI } [0.28, 1.40], p = .004$), threat to freedoms ($b = 0.51, 95\% \text{ CI } [0.07, 0.95], p = .024$), threat to reciprocity by choice ($b = 0.75, 95\% \text{ CI } [0.23, 1.27], p = .005$), threat to safety ($b = 0.65, 95\% \text{ CI } [0.21, 1.10], p = .004$), threat to health ($b = 0.52, 95\% \text{ CI } [0.15, 0.89], p = .006$), value threat ($b = 0.71, 95\% \text{ CI } [0.22, 1.21], p = .005$), threat to ingroup morality ($b = 0.43, 95\% \text{ CI } [0.01, 0.84], p = .043$), anger ($b = 0.35, 95\% \text{ CI } [0.04, 0.67], p = .028$), physical disgust ($b = 0.44, 95\% \text{ CI } [0.07, 0.81], p = .021$), and moral disgust ($b = 0.49, 95\% \text{ CI } [0.12, 0.85], p = .009$). Simple slopes suggested that identification with the group was positively associated with more of these perceived threats and emotional reactions in the religious community condition, but negatively associated with perceived threats and emotional reactions in the local community condition. Not all simple slopes reached

statistical significance, but the trends were present in the interactions listed above.

Representative results are shown in Figures 3.1 and 3.2.

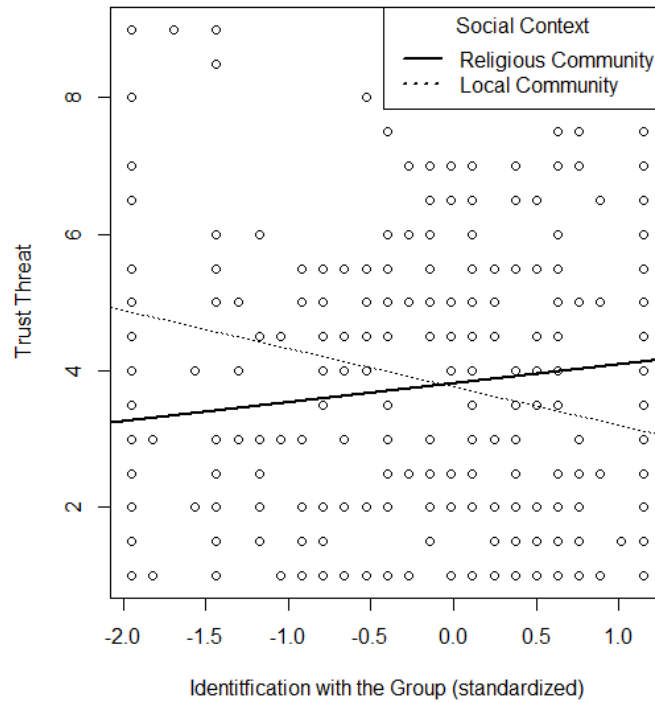


Figure 3.1. Interaction between group context and identification with the group on perceived trust threat.

Replications

Specific threats predicted specific emotions. Study 1 results were replicated in that specific threats somewhat mapped onto specific emotions. Correlations among variables are shown in Table 3.2. Correlations among predictor variables were not as high as in Study 2, which reduced multicollinearity ($VIFs < 6.47$). Regression results for threats predicting each emotion are shown in Table 3.3. Anger was predicted by obstacle threats, although health and ingroup morality threats were also associated with more anger and reciprocity threat by inability was associated with less anger. Fear was predicted by

safety threat, although there was also a positive association with obstacle threats and a negative association with value threat. Physical disgust results did not replicate well. Physical disgust was predicted by obstacle, reciprocity by inability (negative relationship), and ingroup morality threats, but not health threat. Moral disgust was predicted by value threat, but also obstacle, health, reciprocity by inability (negative relationship), and ingroup morality. Unlike in Study 1, reciprocity threat by inability did predict pity, although safety threat and health threat (negative relationship) did as well. Guilt was predicted by threat to perceived ingroup morality, but also was predicted by reciprocity threat by inability.

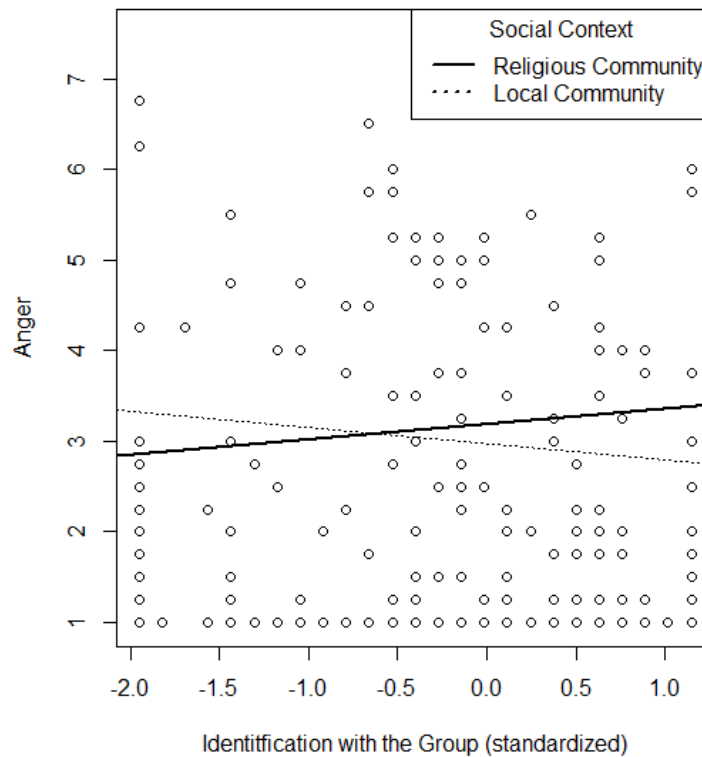


Figure 3.2. Interaction between group context and identification with the group on anger toward people with mental illness.

Specific threat utility and threats/emotions endorsed. The result that specific threats explained significant variance in emotions beyond general threat alone was also replicated ($\Delta R^2s > .06$, $ps < .01$). All threats and emotions were also endorsed at levels greater than zero ($ts > 11.97$; $ps < .001$; Cohen's $ds > 0.52$).

Additional threats. The additional threats were entered as predictors of each emotion to see if they predicted emotion when controlling for the original classes of threats. The additional threats found in Study 1 were tested at $p < .05$ since they were replications, and all other threats were tested at the $p = .005$ cutoff, as in Study 1. No additional threats predicted anger, physical disgust, or moral disgust, as in Study 1. Threat to social awkwardness predicted fear above the other predictors ($b = 0.11$, $SE = 0.05$, $p = .025$). Threat to being aware of one's lack of helping predicted pity ($b = 0.22$, $SE = 0.05$, $p < .001$) predicted pity when accounting for other threats. Threat of social awkwardness ($b = 0.12$, $SE = 0.04$, $p = .003$) and threat to lack of helping ($b = 0.15$, $SE = 0.03$, $p < .001$) predicted guilt when controlling for the original classes of threats. Taken together, it appears that other specific threats, especially threat to social awkwardness and being aware of one's lack of helping, may be somewhat relevant to emotion expressed toward people with mental illness. The additional threats also explained additional variance in each emotion: 11% additional variance in anger, 3% in fear, 10% in physical disgust, 10% moral disgust, 9% in pity, 11% in guilt (not accounting for covariates).

Table 3.2

Means, Standard Deviations, and Correlations across Context Conditions

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. General Threat	3.62	2.10																			
2. Trust	3.36	2.22	.65																		
3. Social Coordination	3.11	2.07	.70	.74																	
4. Resources	2.42	1.85	.56	.60	.74																
5. Property	3.02	1.97	.68	.77	.82	.75															
6. Freedoms	2.57	1.92	.64	.63	.78	.80	.77														
7. Reciprocity by Choice	3.13	2.04	.65	.73	.74	.71	.79	.72													
8. Obstacles	2.94	1.78	.73	.85	.91	.86	.92	.88	.88												
9. Safety	3.36	2.07	.72	.77	.77	.67	.85	.70	.71	.84											
10. Health	2.41	1.82	.59	.63	.76	.79	.78	.80	.71	.84	.73										
11. Values	2.73	1.90	.62	.70	.73	.75	.79	.80	.79	.86	.72	.75									
12. Reciprocity by Inability	3.88	2.04	.57	.60	.59	.50	.60	.51	.66	.65	.58	.52	.55								
13. Perceived Ingroup Morality	2.26	1.70	.48	.51	.61	.72	.65	.74	.59	.71	.58	.77	.69	.42							
14. General Dislike	2.26	1.75	.54	.64	.68	.63	.69	.69	.69	.76	.63	.62	.67	.48	.53						
15. Anger	1.91	1.58	.49	.54	.64	.62	.64	.69	.60	.70	.57	.69	.63	.40	.64	.82					
16. Fear	3.27	1.95	.56	.60	.60	.47	.60	.52	.51	.62	.67	.54	.49	.43	.41	.62	.58				
17. Physical Disgust	1.87	1.54	.46	.54	.60	.66	.64	.67	.59	.70	.55	.67	.65	.39	.64	.81	.84	.55			
18. Moral Disgust	1.82	1.58	.42	.50	.58	.65	.60	.70	.57	.68	.54	.67	.66	.36	.64	.77	.84	.51	.89		
19. Guilt	2.35	1.63	.26	.28	.37	.41	.38	.37	.30	.39	.31	.43	.34	.30	.53	.46	.56	.45	.57	.52	
20. Pity	5.31	2.22	.18	.18	.15	.04	.12	.04	.07	.12	.19	.05	.09	.22	.05	.07	.06	.35	.08	.05	.25

Note. *N* = 538. *M* = mean. *SD* = standard deviation. Obstacle threat was an average of trust, social coordination, resources, property, freedoms, and reciprocity by choice threats.

Table 3.3

Regression Results of Threats Predicting Emotions

Predictor	Anger <i>b</i>	95% CI [LL, UL]	Fear <i>b</i>	95% CI [LL, UL]	Physical Disgust <i>b</i>	95% CI [LL, UL]	Moral Disgust <i>b</i>	95% CI [LL, UL]	Pity <i>b</i>	95% CI [LL, UL]	Guilt <i>b</i>	95% CI [LL, UL]
Intercept	0.80**	[0.32, 1.28]	0.69*	[0.07, 1.30]	0.68**	[0.22, 1.15]	0.87***	[0.40, 1.34]	2.82***	[1.92, 3.72]	1.04**	[0.38, 1.70]
Obstacles	0.35***	[0.16, 0.54]	0.35*	[0.05, 0.65]	0.37**	[0.14, 0.60]	0.24*	[0.02, 0.47]	-0.19	[-0.50, 0.12]	0.05	[-0.17, 0.27]
Safety	-0.05	[-0.15, 0.05]	0.45***	[0.30, 0.59]	-0.08	[-0.20, 0.04]	-0.07	[-0.19, 0.05]	0.35***	[0.19, 0.51]	-0.05	[-0.15, 0.05]
Health	0.22**	[0.06, 0.38]	0.06	[-0.12, 0.24]	0.15	[-0.04, 0.34]	0.21*	[0.04, 0.38]	-0.24*	[-0.45, -0.03]	0.07	[-0.08, 0.22]
Values	0.05	[-0.09, 0.20]	-0.16*	[-0.32, -0.00]	0.11	[-0.03, 0.26]	0.21**	[0.06, 0.36]	-0.04	[-0.25, 0.17]	-0.12	[-0.26, 0.02]
Reciprocity by Inability Perceived	-0.06*	[-0.11, -0.00]	0.02	[-0.07, 0.11]	-0.06*	[-0.12, -0.00]	-0.09**	[-0.14, -0.03]	0.25***	[0.11, 0.39]	0.10*	[0.02, 0.19]
Ingroup Morality	0.16*	[0.03, 0.29]	-0.04	[-0.17, 0.09]	0.17*	[0.01, 0.32]	0.15*	[0.01, 0.30]	0.10	[-0.09, 0.29]	0.49***	[0.32, 0.65]
Familiarity	0.02	[-0.01, 0.05]	0.00	[-0.04, 0.05]	0.00	[-0.03, 0.04]	-0.01	[-0.04, 0.03]	0.02	[-0.04, 0.07]	0.03	[-0.01, 0.06]
Female	-0.34***	[-0.52, -0.15]	0.12	[-0.14, 0.38]	-0.25**	[-0.44, -0.06]	-0.25*	[-0.45, -0.05]	0.06	[-0.31, 0.43]	-0.17	[-0.41, 0.08]
Age	-0.01**	[-0.02, -0.00]	0.00	[-0.00, 0.01]	-0.01*	[-0.01, -0.00]	-0.01**	[-0.02, -0.00]	0.03***	[0.01, 0.04]	-0.00	[-0.01, 0.01]
Non-White	-0.23*	[-0.45, -0.02]	0.14	[-0.18, 0.45]	-0.20	[-0.41, 0.01]	-0.11	[-0.33, 0.11]	0.01	[-0.43, 0.45]	-0.03	[-0.34, 0.28]
<i>R</i> ²	.57***		.47***		.55***		.55***		.12***		.30***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Positive emotion. It was also possible to again examine which sociofunctional threats predicted positive emotions. As in Study 1, general positive feelings, happiness, and admiration were generally predicted by perceiving less obstacle threats, and more health threat and threat to ingroup morality. Unlike Study 1, safety threats were also associated with less positive emotion (Table 3.4).

Table 3.4

Regression Results of Threats Predicting Positive Emotion

Predictor	General Positive <i>b</i>	95% CI [LL, UL]	Happy <i>b</i>	95% CI [LL, UL]	Admire <i>b</i>	95% CI [LL, UL]
Intercept	6.34***	[5.97, 6.72]	2.65***	[2.25, 3.06]	5.24***	[4.81, 5.66]
Obstacle	-0.41**	[-0.69, -0.13]	-0.05	[-0.35, 0.25]	-0.54***	[-0.83, -0.26]
Safety	-0.26***	[-0.39, -0.13]	-0.22**	[-0.37, -0.07]	-0.19*	[-0.33, -0.04]
Health	0.29***	[0.15, 0.43]	0.19*	[0.04, 0.33]	0.29***	[0.12, 0.47]
Values	-0.08	[-0.23, 0.07]	-0.06	[-0.22, 0.10]	-0.04	[-0.21, 0.14]
Reciprocity by Inability	-0.04	[-0.14, 0.07]	-0.10	[-0.22, 0.03]	-0.00	[-0.12, 0.12]
Perceived Ingroup Morality	0.20*	[0.04, 0.36]	0.48***	[0.33, 0.63]	0.35***	[0.20, 0.49]
<i>R</i> ²	.19***		.15***		.14***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Tables 3.5 to 3.10 show that many commonly held and studied beliefs predicted emotions beyond the emotion's specific threat alone. Specifically, attributing blame to people with mental illness for having their mental illness was associated with more anger, physical disgust, and moral disgust, and less pity. Additionally, seeing people with mental illness as different predicted physical disgust beyond beliefs of responsibility and threat to health, and beliefs about more blame for the individuals to overcome mental

illness was associated with less moral disgust. Beliefs that people with mental illness are dangerous and have better prognoses were associated with pity beyond blame for illness and reciprocity threat due to inability. Lastly, believing that people with mental illness are responsible for overcoming their mental illness was associated with less guilt beyond threat to perceived ingroup morality alone.

Table 3.5

Regression Results of Beliefs Predicting Anger

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.24	[-0.30, 0.77]	0.02	[-0.43, 0.47]
Onset Responsibility	0.64***	[0.42, 0.85]	0.37***	[0.17, 0.56]
Offset Responsibility	0.02	[-0.08, 0.13]	-0.06	[-0.16, 0.03]
Differentness	0.19**	[0.05, 0.32]	0.04	[-0.07, 0.15]
Dangerousness	0.33***	[0.19, 0.47]	0.04	[-0.08, 0.16]
Prognosis	-0.15**	[-0.26, -0.05]	-0.05	[-0.14, 0.04]
Obstacle Threat			0.51***	[0.40, 0.62]
<i>R</i> ²	.36***		.53***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown. **p* < .05, ***p* < .01, ****p* < .001.

Table 3.6

Regression Results for Beliefs Predicting Fear

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.52	[-0.18, 1.23]	0.39	[-0.22, 1.01]
Onset Responsibility	0.05	[-0.15, 0.26]	-0.12	[-0.30, 0.07]
Offset Responsibility	0.05	[-0.09, 0.20]	-0.02	[-0.15, 0.11]
Differentness	0.17*	[0.01, 0.32]	0.09	[-0.05, 0.23]
Dangerousness	0.91***	[0.72, 1.10]	0.36***	[0.15, 0.56]
Prognosis	-0.00	[-0.14, 0.14]	0.09	[-0.03, 0.21]
Safety Threat			0.51***	[0.42, 0.60]
<i>R</i> ²	.33***		.47***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown. **p* < .05, ***p* < .01, ****p* < .001.

Table 3.7

Regression Results of Beliefs Predicting Physical Disgust

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.45	[-0.11, 1.02]	0.23	[-0.26, 0.72]
Onset Responsibility	0.56***	[0.35, 0.76]	0.29**	[0.10, 0.49]
Offset Responsibility	0.03	[-0.08, 0.14]	-0.01	[-0.11, 0.10]
Differentness	0.22***	[0.09, 0.35]	0.12*	[0.01, 0.23]
Dangerousness	0.30***	[0.16, 0.44]	0.11	[-0.01, 0.23]
Prognosis	-0.19***	[-0.30, -0.09]	-0.09	[-0.18, 0.00]
Health Threat			0.42***	[0.32, 0.53]
<i>R</i> ²	.35***		.49***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 3.8

Regression Results of Beliefs Predicting Moral Disgust

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	0.05	[-0.51, 0.61]	-0.20	[-0.68, 0.29]
Onset Responsibility	0.71***	[0.49, 0.94]	0.53***	[0.34, 0.72]
Offset Responsibility	-0.00	[-0.12, 0.11]	-0.12*	[-0.22, -0.02]
Differentness	0.18*	[0.04, 0.32]	0.02	[-0.09, 0.13]
Dangerousness	0.26***	[0.13, 0.40]	0.05	[-0.06, 0.17]
Prognosis	-0.10	[-0.21, 0.01]	0.02	[-0.07, 0.12]
Value Threat			0.45***	[0.35, 0.54]
<i>R</i> ²	.34***		.51***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, *p* < .01, ****p* < .001.

Table 3.9

Regression Results of Beliefs Predicting Pity

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	2.90***	[2.01, 3.79]	2.69***	[1.81, 3.58]
Onset Responsibility	-0.40***	[-0.62, -0.17]	-0.46***	[-0.69, -0.23]
Offset Responsibility	-0.12	[-0.31, 0.08]	-0.13	[-0.32, 0.06]
Differentness	0.16	[-0.05, 0.37]	0.05	[-0.16, 0.26]
Dangerousness	0.43***	[0.20, 0.66]	0.31**	[0.08, 0.54]
Prognosis	0.51***	[0.33, 0.69]	0.49***	[0.31, 0.67]
Reciprocity Threat due to Inability			0.25***	[0.14, 0.35]
<i>R</i> ²	.10***		.14***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, ** *p* < .01, **p* < .001.

Table 3.10

Regression Results of Beliefs Predicting Guilt

Predictor	Model 1 <i>b</i>	95% CI [LL, UL]	Model 2 <i>b</i>	95% CI [LL, UL]
Intercept	1.42***	[0.75, 2.08]	0.93**	[0.36, 1.50]
Onset Responsibility	0.45***	[0.25, 0.65]	0.10	[-0.10, 0.29]
Offset Responsibility	-0.11	[-0.24, 0.03]	-0.13*	[-0.25, -0.01]
Differentness	0.18*	[0.03, 0.33]	0.06	[-0.08, 0.20]
Dangerousness	0.10	[-0.06, 0.26]	-0.02	[-0.15, 0.12]
Prognosis	-0.04	[-0.17, 0.09]	0.09	[-0.02, 0.21]
Perceived Ingroup Morality Threat			0.50***	[0.39, 0.62]
<i>R</i> ²	.11***		.29***	

Note. *N* = 538. *b* indicates the unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. Robust standard errors are shown.

p* < .05, ** *p* < .01, **p* < .001.

Discussion

Study 2 extended Study 1 by using the sociofunctional approach to prejudice (Cottrell & Neuberg, 2005) to determine how social contexts may change how people perceive mental illness. Specifically, Study 2 examined how social context, which frames group goals and salient threats, changed the perceived threats and emotional reactions of people with mental illness. The hypotheses that the contextual framing of the workplace

and religious community would change perceptions of sociofunctional threats and emotion was not supported. There were trending effects such that workplace was associated with more threat to social coordination and less feelings of pity and guilt toward people with mental illness, but the hypotheses were not fully supported. These results suggest that perceived specific threats may not relate to the overall goals and purposes of the social groups. Instead, people may have fixed perceptions of people with mental illness. Moreover, perceptions may be more dependent on individual differences rather than social context.

Exploratory Results

Additionally, it was found that general religiosity, regardless of experimental condition, was associated with more perceived threats to safety, health, perceived ingroup morality, and reciprocity due to choice and was associated with more anger, fear, physical disgust, moral disgust, and pity toward people with mental illness. This finding supports past research that suggests that people with mental illness are stigmatized by people who are religious. Religiousness may correspond to beliefs that mental illness is caused by spiritual or demonic forces or represents a personal failure of faith (Wesslemann & Graziano, 2010). In particular, the current findings support research that indicates that religious individuals may experience more disgust and guilt out of purity and moral concerns (e.g., Albertsen et al., 2006; Preston & Ritter, 2012) and also may experience more pity toward people with mental illness (Rose, 1997).

There was also evidence that identification with the group may be especially important to perceiving specific threats and emotions in the context of certain social groups. Exploratory results were that in the religious condition, identification with the

group tended to predict more perceived threats and emotions, whereas in the local community condition, identification with the group tended to have negative associations with perceived threats and emotions. The sociofunctional approach accounts for investment in and dependency on a group (Neuberg & Cottrell, 2002; Neuberg et al., 2000), but it was expected that identification with the group would uniformly relate to perceived threats toward ingroups – not impact certain ingroups more than others. Moreover, the pattern of findings does not necessarily support the sociofunctional theory because the interaction between condition and identification with the group was present for most perceived threats and emotional reactions and not only the threats and emotions that may be most theoretically relevant to religious group goals.

Instead, the interaction found between the religious context and group identification suggests that religious communities represent groups that, when important to individuals, may lead to more threat perception and negative emotions. Indeed, religion may be a social identity that people hold closer than other social identities and represents a strong and central worldview (Ysseldyk, Matheson, & Anisman, 2010). While social identity can make people think in terms of protecting the ingroup and differentiating from the outgroup (Tajfel & Turner, 1979), religious identity may be a particularly strong social identity that creates some division between groups (Ysseldyk et al., 2010). When people who identify strongly with a religious group respond in the context of their religious group (as in the current research), they may perceive more threat and have more negative emotion toward people who seem different. However, when people respond from the perspective of the local community context, which is not inherently tied to a specific worldview and may not represent a central social identity,

people may feel less negatively toward people with mental illness. More identification with the local community may potentially decrease perceived threats and negative emotion toward people with mental illness because communities partially function to offer various services to all members, including members who have mental illness.

Replications of Study 1

While primary hypotheses were not supported, replications of Study 1 hypotheses showed that specific threats, again, somewhat mapped onto the theoretically relevant specific emotions. For all emotions other than physical disgust, the theoretically relevant specific threat predicted the emotion. There were also other specific threats that statistically predicted each emotion. Furthermore, specific threats accounted for significant variance in each emotion over general threat alone. Of note, multicollinearity was not as high in Study 1, meaning that the coefficients in Study 2 were somewhat more stable in the regression analyses.

Some of the exploratory results from Study 1 were also supported in Study 2. It was found that positive emotions were generally associated with less perceived obstacle and safety threats, but more threat to health and perceived ingroup morality. It is logical that perceiving fewer negative threats such as threats to resources and safety would predict more positive emotion, and perhaps perceiving a threat to how the ingroup is perceived could also lead to more positive emotion to repair the reputation. However, the result that more health threat was associated with more positive emotion was also replicated from Study 1. This suggests that this surprising finding is not a simple anomaly and should be explored in future research.

Additional specific threats were also found to contribute to the variance in emotions. Specifically, threat to awkwardness again predicted fear, and threat to being aware of one's lack of helping predicted pity and guilt, replicating results in Study 1. Threat of social awkwardness also predicted guilt in Study 2.

Study 2 also found that blaming people with mental illness for mental illness onset predicted each emotion except fear and guilt, even when controlling for each emotion's corresponding specific threat. There were some additional beliefs that further predicted emotions beyond specific threats and attributions alone. Overall, this suggests that attribution theory (Weiner et al., 1988) contributes to our understanding of emotions toward people with mental illness, and this is in addition to the contribution of specific threats.

Limitations

Overall, there were limitations to consider. One limitation is that the experimental conditions were done online. This method therefore required that participants pay attention and really think about how they would perceive people with mental illness in a certain context. People may have been answering with a more general context in mind rather than consider their perceptions in a certain context. Moreover, explicit perceptions and emotions were measured, which may not accurately reflect how people think and feel in those real social contexts. Overall, the current study allowed for experimental manipulation of the social contextual framing, but future research may consider quasi-experimental methodology that targets participants in actual workplace or religious locations.

CHAPTER FOUR

General Discussion

Together, Studies 1 and 2 offer a novel approach to studying stigma of mental illness and a beginning investigation of how specific threats and emotions may differ across mental illness diagnoses and across social context. In particular, the studies offer a framework for why emotional reactions and prejudice may develop toward people with mental illness. The sociofunctional approach and threat approaches to prejudice (Cottrell & Neuberg, 2005; Neuberg & Cottrell, 2002; Stangor & Dovidio, 2000) offer an overarching theory that posits that emotional reactions are the consequence of perceived threats to social functioning and motivate behavior that might alleviate the threats. Social groups are adaptive to humans (Brewer, 2004), and so excluding certain people may have once been beneficial to maximize group effectiveness and survival (Kurzban & Leary, 2001). People with mental illness may represent an outgroup that people stigmatize in efforts to keep the ingroup healthy and functionable.

Extending the sociofunctional framework to mental illness stigma in the current research showed that specific threats and emotions may be helpful to our understanding of mental illness stigma for several reasons. First, specific threats and emotional reactions that have not yet been examined in mental illness stigma research were endorsed in the current studies. Second, specific threats accounted for a significant amount of variance in emotional reactions, and more variance than general threat alone. Third, specific threats did predict certain specific emotions somewhat consistently. In both studies, obstacle

threats predicted anger, safety threat predicted fear, value threat predicted moral disgust, and threat to perceived ingroup morality predicted guilt. Health threat predicted physical disgust in Study 1 but not Study 2, and threat to reciprocity by inability predicted pity in Study 2 and not Study 1. Other classes of threats also predicted each emotion consistently across studies: threat to perceived ingroup morality consistently predicted physical disgust, health threat consistently predicted moral disgust, safety threat consistently predicted pity, and reciprocity threat due to inability consistently predicted guilt.

Some of these additional threat classes predicting emotions may be explainable, in part, through the lens of the sociofunctional theory. The fact that health and value threats similarly predicted moral disgust suggests that physical and moral disgust may not be highly distinguishable and may function similarly toward people with mental illness. Disgust, in general, may arise out of a desire to stay away from both physical and moral contamination. Indeed, some research using the sociofunctional theory has not distinguished between moral and physical disgust (i.e., Cottrell & Neuberg, 2005). The current study also indicated that physical disgust was associated with concerns about the ingroup's morality being questioned. If the morality of the ingroup is threatened, this could create feelings of disgust toward people with mental illness if it is perceived that people with mental illness are contaminating the reputation of the ingroup. Additionally, it could create feelings of self-disgust (e.g., Powell, Overton, & Simpson, 2014), although it is worth noting that participants indicated how much they felt disgust toward people with mental illness, as a group, and not whether they felt disgust in general or disgust toward the self.

Threat to reciprocity due to inability also predicted guilt. While this is not accounted for by the sociofunctional approach, it may be explained by the fact that if people feel like a group cannot reciprocate by no fault of their own, there may be more guilt felt by not helping. People may not experience the same guilt if not helping people with mental illness is justified by blaming people with mental illness or believing that people with mental illness choose to contribute less and/or choose to take more. This was also supported by the supplemental analyses on the additional threats, which show that threat to being aware of one's lack of helping predicted pity and guilt beyond the original threat classes.

The result that pity was explained by threat to safety is not congruent with the sociofunctional approach. A threat to safety should theoretically elicit a fight or flight response. Pity is not usually associated with fear. It is possible that when people think about threats to safety and the idea that people with mental illness could harm others, they may also feel pity and endorse beliefs that people with mental illness should be taken care of [and potentially separated from the rest of society]. These results mirror other research that has found that beliefs about dangerousness are associated with pity and that pity may predict desire to separate people with mental illness from society (Corrigan et al., 2003). Overall, pity did not correlate as highly with the other emotions and threats, making pity toward people with mental illness a construct for further exploration.

Ultimately, the current research could inform stigma interventions. Adequate and reliable stigma interventions are still being pursued (Casados, 2017; Corrigan et al., 2012), and perhaps one reason why many interventions do not change long-term attitudes

is because interventions are not targeting a variety of perceived threats and emotions. These various threats and emotions, such as threat to resources, property, health, and values, are not often examined in the literature, and neither are emotions such as disgust and guilt; however, the current studies suggest that people do endorse these perceptions and emotional reactions toward people with mental illness.

Additionally, while it may be critical to cater stigma interventions to specific contexts (e.g., the medical field, Lawrence & Kisley, 2010; Sartorius, 2007), the current studies do not indicate that different social contexts elicit different perceptions. There was some evidence that the religious communities may require more stigma interventions. Religiosity may share a direct relationship with stigma of mental illness and people who strongly identify with a religious group may feel especially threatened by people with mental illness in their religious communities. However, it is not clear from the present studies that people are more or less stigmatizing in a religious context compared to a local community context; individual-level factors may be at play more than group functioning concerns. Interventions in religious communities could be effective to the extent that they would directly reach many people who are highly religious and/or strongly identify with a religious community.

The current studies were also the first to extend the sociofunctional approach to a clinically-relevant group. The current studies offer support that the sociofunctional theory may be used to study other clinically-relevant, stigmatized groups, such as people with physical disabilities, people who are homeless, or people with intellectual disabilities. If researchers can better understand perceived threats and emotional reactions toward

stigmatized groups, then we may be able to create and implement more effective interventions to reduce stigma and its consequences.

Limitations and Directions for Future Research

Overall, Study 1 and Study 2 shared many limitations. One limitation was the monomethod nature of the assessments, which may have artificially inflated estimates. Explicit measures were also used, which requires participants to be aware of and admit their true perceptions and feelings toward people with mental illness. While desirable responding is often found to be unrelated to mental illness stigma (e.g., Cashwell & Smith, 2011; Ebner & Latner, 2013) or be only a concern when people are interviewed face-to-face (Henderson, Evans-Lacko, Flach, & Thornicroft, 2012), it was a limitation that desirable responding was not examined. Lastly, it was a limitation that only a select few labels were used, and “people with mental illness” was the commonly used label. This is a broad label that represents a heterogeneous group. Depression and schizophrenia targets were examined in Study 1 and showed some differentiation, and it may be valid to examine each type of mental illness separately in future research.

Future research should also continue to examine the utility of the sociofunctional approach to prejudice to other clinical groups and also compare the sociofunctional approach to alternative theories, such as attribution theory. The current studies suggest specific threats predict emotions toward people with mental illness, but that attributions independently predict emotion and may also be important to our understanding of mental illness stigma. It was not clear from the current studies whether attributional beliefs or specific threats from the sociofunctional theory were definitively more important or useful, but they both consistently predicted emotions across studies.

Lastly, the current research points to the potential for interventions that target a variety of perceptions and emotional reactions toward people with mental illness. People with mental illness may be perceived as more than targets of blame and sources of danger, and people may express more than only anger, fear, and pity toward people with mental illness. As future research gives insight to these various perceptions, future interventions should aim to reduce a broader range of negative perceptions as well as emotions such as disgust and guilt. Perhaps interventions that seek to reduce a broader range of negative perceptions and emotions will be more effective than interventions that are narrower in scope. Moreover, interventions may need to take place in a variety of contexts or be considered for a variety of targets, such as targets with different mental illnesses. Overall, the affective component of mental illness stigma has important behavioral implications (Thornicroft et al., 2007), and more effective interventions may be developed to address and reduce this stigma.

BIBLIOGRAPHY

- Albertsen, E. J., O'Connor, L. E., & Berry, J. W. (2006). Religion and interpersonal guilt: Variations across ethnicity and spirituality. *Mental Health, Religion, & Culture*, 9(1), 67–84. <https://doi.org/10.1080/13694670500040484>
- Allport, G. W. (1954). *The nature of prejudice*. Oxford, England: Addison-Wesley.
- Angermeyer, M. C., & Dietrich, S. (2006). Public beliefs about and attitudes towards people with mental illness: a review of population studies. *Acta Psychiatrica Scandinavica*, 113, 163–179. <https://doi.org/10.1111/j.1600-0447.2005.00699.x>
- Angermeyer, M. C., Holzinger, A., & Matschinger, H. (2010). Emotional reactions to people with mental illness. *Epidemiology and Psychiatric Sciences*, 19(1), 26–32. <https://doi.org/10.1017/S1121189X00001573>
- Angermeyer, M. C., & Matschinger, H. (1997). Social distance towards the mentally ill: Results of representative surveys in the Federal Republic of Germany. *Psychological Medicine*, 27(1), 131–141.
- Angermeyer, M. C., & Matschinger, H. (2003a). Public beliefs about schizophrenia and depression: Similarities and differences. *Social Psychiatry and Psychiatric Epidemiology*, 38(9), 526–534. <https://doi.org/10.1007/s00127-003-0676-6>
- Angermeyer, M. C., & Matschinger, H. (2003b). The stigma of mental illness: Effects of labelling on public attitudes towards people with mental disorder. *Acta Psychiatrica Scandinavica*, 108(4), 304–309. <https://doi.org/10.1034/j.1600-0447.2003.00150.x>
- Angermeyer, M. C., & Matschinger, H. (2005). Labeling—stereotype—discrimination. *Social Psychiatry and Psychiatric Epidemiology*, 40(5), 391–395. <https://doi.org/10.1007/s00127-005-0903-4>
- Angermeyer, M. C., Matschinger, H., & Corrigan, P. W. (2004). Familiarity with mental illness and social distance from people with schizophrenia and major depression: Testing a model using data from a representative population survey. *Schizophrenia Research*, 69(2), 175–182. [https://doi.org/10.1016/S0920-9964\(03\)00186-5](https://doi.org/10.1016/S0920-9964(03)00186-5)

- Angermeyer, M. C., Millier, A., Kouki, M., Refaï, T., Schomerus, G., & Toumi, M. (2014). Biogenetic explanations and emotional reactions to people with schizophrenia and major depressive disorder. *Psychiatry Research*, 220(1), 702–704. <https://doi.org/10.1016/j.psychres.2014.07.038>
- Angermeyer, M. C., Millier, A., Rémuzat, C., Refaï, T., Schomerus, G., & Toumi, M. (2015). Continuum beliefs and attitudes towards people with mental illness: Results from a national survey in France. *International Journal of Social Psychiatry*, 61(3), 297–303. <https://doi.org/10.1177/0020764014543312>
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5), 1287–1294. <https://doi.org/10.2307/1911963>
- Brewer, M. B. (2004). Taking the social origins of human nature seriously: Toward a more imperialist social psychology. *Personality and Social Psychology Review*, 8(2), 107–113. https://doi.org/10.1207/s15327957pspr0802_3
- Brohan, E., Henderson, C., Wheat, K., Malcolm, E., Clement, S., Barley, E. A., ... Thornicroft, G. (2012). Systematic review of beliefs, behaviours and influencing factors associated with disclosure of a mental health problem in the workplace. *BMC Psychiatry*, 12, 11-24. <https://doi.org/10.1186/1471-244X-12-11>
- Brown, N. B., & Bruce, S. E. (2016). Stigma, career worry, and mental illness symptomatology: Factors influencing treatment-seeking for Operation Enduring Freedom and Operation Iraqi Freedom soldiers and veterans. *Psychological Trauma: Theory, Research, Practice, and Policy*, 8(3), 276–283. <https://doi.org/10.1037/tra0000082>
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3–5. <https://doi.org/10.1177/1745691610393980>
- Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, 32(3), 946–967. <https://doi.org/10.5465/amr.2007.25275684>
- Caporael, L. R., & Brewer, M. B. (1995). Hierarchical evolutionary theory: There is an alternative, and it's not creationism. *Psychological Inquiry*, 6(1), 31–34. https://doi.org/10.1207/s15327965pli0601_2
- Casados, A. T. (2017). Reducing the stigma of mental illness: Current approaches and future directions. *Clinical Psychology: Science and Practice*, 24(3), 306–323. <https://doi.org/10.1111/cpsp.12206>

- Cashwell, C. S., & Smith, A. L. (2011). Social distance and mental illness: Attitudes among mental health and non-mental health professionals and trainees. *The Professional Counselor: Research and Practice*, 1(1), 13–20.
- Cinnirella, M., & Loewenthal, K. M. (1999). Religious and ethnic group influences on beliefs about mental illness: A qualitative interview study. *British Journal of Medical Psychology*, 72(4), 505–524. <https://doi.org/10.1348/000711299160202>
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd ed.). New York: Routledge.
- Cook, C. L., Cottrell, C. A., & Webster, G. D. (2015). No good without God: Antiatheist prejudice as a function of threats to morals and values. *Psychology of Religion and Spirituality*, 7(3), 217–226. <https://doi.org/10.1037/rel0000013>
- Corrigan, P. W. (2000). Mental health stigma as social attribution: Implications for research methods and attitude change. *Clinical Psychology: Science and Practice*, 7(1), 48–67. <https://doi.org/10.1093/clipsy.7.1.48>
- Corrigan, P. W. (2004). How stigma interferes with mental health care. *American Psychologist*, 59(7), 614–625. <https://doi.org/10.1037/0003-066X.59.7.614>
- Corrigan, P. W., & Lam, C. (2007). Challenging the structural discrimination of psychiatric disabilities: Lessons learned from the American disability community. *Rehabilitation Education*, 21(1), 53–58. <https://doi.org/10.1891/088970107805059869>
- Corrigan, P. W., Larson, J. E., & Kuwabara, S. A. (2007). Mental illness stigma and the fundamental components of supported employment. *Rehabilitation Psychology*, 52(4), 451–457. <https://doi.org/10.1037/0090-5550.52.4.451>
- Corrigan, P. W., Markowitz, F. E., & Watson, A. C. (2004). Structural levels of mental illness stigma and discrimination. *Schizophrenia Bulletin*, 30(3), 481–491. <https://doi.org/10.1093/oxfordjournals.schbul.a007096>
- Corrigan, P. W., Markowitz, F. E., Watson, A. C., Rowan, D., & Kubiak, M. A. (2003). An attribution model of public discrimination towards persons with mental illness. *Journal of Health and Social Behavior*, 44(2), 162–179. <https://doi.org/10.2307/1519806>
- Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsch, N. (2012). Challenging the public stigma of mental illness: A meta-analysis of outcome studies. *Psychiatric Services*, 63(10), 963–973. <https://doi.org/10.1176/appi.ps.201100529>

- Corrigan, P. W., Rowan, D., Green, A., Lundin, R., River, P., Uphoff-Wasowski, K., ... Kubiak, M. A. (2002). Challenging two mental illness stigmas: Personal responsibility and dangerousness. *Schizophrenia Bulletin*, 28(2), 293–309. <https://doi.org/10.1093/oxfordjournals.schbul.a006939>
- Corrigan, P. W., & Watson, A. C. (2002). Understanding the impact of stigma on people with mental illness. *World Psychiatry*, 1(1), 16–20.
- Corrigan, P. W., & Watson, A. C. (2004). At issue: Stop the stigma: Call mental illness a brain disease. *Schizophrenia Bulletin*, 30(3), 477–479. <https://doi.org/10.1093/oxfordjournals.schbul.a007095>
- Corrigan, P. W., Watson, A. C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self-efficacy. *Journal of Social and Clinical Psychology*, 25(8), 875–884. <https://doi.org/10.1521/jscp.2006.25.8.875>
- Cottrell, C. A., & Neuberg, S. L. (2005). Different emotional reactions to different groups: A sociofunctional threat-based approach to “prejudice”. *Journal of Personality and Social Psychology*, 88(5), 770–789. <https://doi.org/10.1037/0022-3514.88.5.770>
- Cottrell, C. A., Neuberg, S. L., & Li, N. P. (2007). What do people desire in others? A sociofunctional perspective on the importance of different valued characteristics. *Journal of Personality and Social Psychology*, 92(2), 208–231. <https://doi.org/10.1037/0022-3514.92.2.208>
- Cottrell, C. A., Richards, D. A. R., & Nichols, A. L. (2010). Predicting policy attitudes from general prejudice versus specific intergroup emotions. *Journal of Experimental Social Psychology*, 46(2), 247–254. <https://doi.org/10.1016/j.jesp.2009.10.008>
- Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2007). The BIAS map: Behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology*, 92(4), 631–648. <https://doi.org/10.1037/0022-3514.92.4.631>
- Dennis, S. A. and Goodson, B. M. & Pearson, C., MTurk Workers' Use of Low-Cost 'Virtual Private Servers' to Circumvent Screening Methods: A Research Note (August 17, 2018). Available at SSRN: <https://ssrn.com/abstract=3233954> or <https://dx.doi.org/10.2139/ssrn.3233954>
- Ebneter, D. S., & Latner, J. D. (2013). Stigmatizing attitudes differ across mental health disorders: A comparison of stigma across eating disorders, obesity, and major depressive disorder. *The Journal of Nervous and Mental Disease*, 201(4), 281–285. <https://doi.org/10.1097/NMD.0b013e318288e23f>

- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/BF03193146>
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, 82(6), 878–902. <https://doi.org/10.1037/0022-3514.82.6.878>
- Fox, A. B., Smith, B. N., & Vogt, D. (2016). The relationship between anticipated stigma and work functioning for individuals with depression. *Journal of Social and Clinical Psychology*, 35(10), 883–897. <https://doi.org/10.1521/jscp.2016.35.10.883>
- Gervais, W. M., Shariff, A. F., & Norenzayan, A. (2011). Do you believe in atheists? Distrust is central to anti-atheist prejudice. *Journal of Personality & Social Psychology*, 101(6), 1189–1206. <http://dx.doi.org/10.1037/a0025882>
- Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. New York, NY: Simon & Schuster. Inc.
- Graham, J., & Haidt, J. (2010). Beyond beliefs: Religions bind individuals into moral communities. *Personality and Social Psychology Review*, 14(1), 140–150. <https://doi.org/10.1177/1088868309353415>
- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96(5), 1029–1046. <https://doi.org/10.1037/a0015141>
- Haidt, J., & Joseph, C. (2004). Intuitive ethics: How innately prepared intuitions generate culturally variable virtues. *Daedalus*, 133(4), 55–66. <https://doi.org/10.1162/0011526042365555>
- Hatzenbuehler, M. L., Phelan, J. C., & Link, B. G. (2013). Stigma as a fundamental cause of population health inequalities. *American Journal of Public Health*, 103(5), 813–821. <https://doi.org/10.2105/AJPH.2012.301069>
- Henderson, C., Evans-Lacko, S., Flach, C., & Thornicroft, G. (2012). Responses to mental health stigma questions: The importance of social desirability and data collection method. *The Canadian Journal of Psychiatry*, 57(3), 152–160. <https://doi.org/10.1177/070674371205700304>
- Holmes, E. P., Corrigan, P. W., Williams, P., Canar, J., & Kubiak, M. A. (1999). Changing Attitudes About Schizophrenia. *Schizophrenia Bulletin*, 25(3), 447–456. <https://doi.org/10.1093/oxfordjournals.schbul.a033392>

- Hutcherson, C. A., & Gross, J. J. (2011). The moral emotions: A social--functionalist account of anger, disgust, and contempt. *Journal of Personality & Social Psychology*, 100(4), 719–737. <https://doi.org/10.1037/a0022408>
- Johnston, B. M., & Glasford, D. E. (2014). A threat-emotion profile approach to explaining active versus passive harm in intergroup relations. *Social Psychology*, 45(5), 399–407. <https://doi.org/10.1027/1864-9335/a000199>
- Jones, A. N. (2011). Disclosure of mental illness in the workplace: A literature review. *American Journal of Psychiatric Rehabilitation*, 14(3), 212–229. <https://doi.org/10.1080/15487768.2011.598101>
- Kessler, R. C., Angermeyer, M., Anthony, J. C., De Graaf, R., Demyttenaere, K., Gasquet, I., ... Üstün, T. B. (2007). Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry*, 6(3), 168–176.
- Krupa, T., Kirsh, B., Cockburn, L., & Gewurtz, R. (2009). Understanding the stigma of mental illness in employment. *Work: Journal of Prevention, Assessment & Rehabilitation*, 33(4), 413–425. <https://doi.org/10.3233/WOR-2009-0890>
- Kuppens, T., & Yzerbyt, V. Y. (2012). Group-based emotions: The impact of social identity on appraisals, emotions, and behaviors. *Basic & Applied Social Psychology*, 34(1), 20–33. <https://doi.org/10.1080/01973533.2011.637474>
- Kuppens, T., Yzerbyt, V. Y., Dandache, S., Fischer, A. H., & van der Schalk, J. (2013). Social identity salience shapes group-based emotions through group-based appraisals. *Cognition & Emotion*, 27(8), 1359–1377. <https://doi.org/10.1080/02699931.2013.785387>
- Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin*, 127(2), 187–208. <https://doi.org/10.1037/0033-2909.127.2.187>
- Lawrence, D., & Kisley, S. (2010). Inequalities in healthcare provision for people with severe mental illness. *Journal of Psychopharmacology*, 24(11), 61–68. <https://doi.org/10.1177/1359786810382058>
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY: Oxford University Press.
- Levinson, C. M., & Druss, B. G. (2000). The evolution of mental health parity in American politics. *Administration and Policy in Mental Health*, 28(2), 139–146. <https://doi.org/10.1023/A:1026659524228>

- Link, B. G., Phelan, J. C., Bresnahan, M., Stueve, A., & Pescosolido, B. A. (1999). Public conceptions of mental illness: Labels, causes, dangerousness, and social distance. *American Journal of Public Health*, 89(9), 1328–1333. <https://doi.org/10.2105/AJPH.89.9.1328>
- Link, B. G., Cullen, F. T., Frank, J., & Wozniak, J. F. (1987). The social rejection of former mental patients: Understanding why labels matter. *American Journal of Sociology*, 92(6), 1461–1500. <https://doi.org/10.1086/228672>
- Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27(1), 363–385. <https://doi.org/10.1146/annurev.soc.27.1.363>
- Litman, L., Robinson, J., & Abberbock, T. (2016). TurkPrime. com: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behavior Research Methods*, 1–10. <https://doi.org/10.3758/s13428-016-0727-z>
- Livingston, J. D., & Boyd, J. E. (2010). Correlates and consequences of internalized stigma for people living with mental illness: A systematic review and meta-analysis. *Social Science & Medicine*, 71(12), 2150–2161. <https://doi.org/10.1016/j.socscimed.2010.09.030>
- Long, J. S., & Ervin, L. H. (2000). Using heteroscedasticity consistent standard errors in the linear regression model. *The American Statistician*, 54(3), 217–224. <https://doi.org/10.1080/00031305.2000.10474549>
- Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology*, 79(4), 602–616. <https://doi.org/10.1037/0022-3514.79.4.602>
- Mendel, R., Kissling, W., Reichhart, T., Bühner, M., & Hamann, J. (2015). Managers' reactions towards employees' disclosure of psychiatric or somatic diagnoses. *Epidemiology and Psychiatric Sciences; Verona*, 24(2), 146–149. <http://dx.doi.org/10.1017/S2045796013000711>
- Molho, C., Tybur, J. M., Güler, E., Balliet, D., & Hofmann, W. (2017). Disgust and anger relate to different aggressive responses to moral violations. *Psychological Science*, 28(5), 609–619. <https://doi.org/10.1177/0956797617692000>
- Musil, C. M., Warner, C. B., Yobas, P. K., & Jones, S. L. (2002). A comparison of imputation techniques for handling missing data. *Western Journal of Nursing Research*, 24(7), 815–829. <https://doi.org/10.1177/019394502762477004>
- Neuberg, S. L., & Cottrell, C. A. (2002). Intergroup emotions: A biocultural approach. In D. M. Mackie & E. R. Smith (Eds.), *From Prejudice to Intergroup Emotions: Differentiated Reactions to Social Groups* (pp. 265–284). New York, NY: Psychology Press.

- Neuberg, S. L., Smith, D. M., & Asher, T. (2000). Why people stigmatize: Toward a biocultural framework. In T. F. Heatherton, R. E. Kleck, M. R. Hebl, & J. G. Hull (Eds.), *The Social Psychology of Stigma* (pp. 31–61). New York, NY, US: Guilford Press.
- Norman, R. M. G., Windell, D., & Manchanda, R. (2010). Examining differences in the stigma of depression and schizophrenia. *International Journal of Social Psychiatry*, 58(1), 69–78. <https://doi.org/10.1177/0020764010387062>
- O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673–690. <https://doi.org/10.1007/s11135-006-9018-6>
- Overton, S. L., & Medina, S. L. (2008). The stigma of mental illness. *Journal of Counseling & Development*, 86, 143–151.
- Park, J. H., Faulkner, J., & Schaller, M. (2003). Evolved disease-avoidance processes and contemporary anti-social behavior: Prejudicial attitudes and avoidance of people with physical disabilities. *Journal of Nonverbal Behavior; New York*, 27(2), 65–87. <http://dx.doi.org/10.1023/A:1023910408854>
- Peer, E., Vosgerau, J., & Acquisti, A. (2014). Reputation as a sufficient condition for data quality on Amazon Mechanical Turk. *Behavior Research Methods*, 46(4), 1023–1031. <https://doi.org/10.3758/s13428-013-0434-y>
- Phelan, J., Link, B. G., & Dovidio, J. F. (2008). Stigma and prejudice: One animal or two? *Social Science & Medicine* (1982), 67(3), 358–367. <https://doi.org/10.1016/j.socscimed.2008.03.022>
- Powell, P. A., Overton, P. G., & Simpson, J. (2014). The revolting self: An interpretative phenomenological analysis of the experience of self-disgust in females with depressive symptoms. *Journal of Clinical Psychology*, 70(6), 562–578. <https://doi.org/10.1002/jclp.22049>
- Preston, J. L., & Ritter, R. S. (2012). Cleanliness and godliness: Mutual association between two kinds of personal purity. *Journal of Experimental Social Psychology*, 48(6), 1365–1368. <https://doi.org/10.1016/j.jesp.2012.05.015>
- R Core Team. (2018). R: A language and environment for statistical computing (Version 3.5.1). Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <https://www.R-project.org/>
- Ritter, R. S., & Preston, J. L. (2011). Gross gods and icky atheism: Disgust responses to rejected religious beliefs. *Journal of Experimental Social Psychology*, 47(6), 1225–1230. <https://doi.org/10.1016/j.jesp.2011.05.006>

- Rowatt, W. C., LaBouff, J., Johnson, M., Froese, P., & Tsang, J.-A. (2009). Associations among religiousness, social attitudes, and prejudice in a national random sample of American adults. *Psychology of Religion and Spirituality*, 1(1), 14–24. <https://doi.org/10.1037/a0014989>
- Rose, A. (1997). “Who causes the blind to see”: Disability and quality of religious life. *Disability & Society*, 12(3), 395–405. <https://doi.org/10.1080/09687599727245>
- Rozin, P., Lowery, L., Haidt, J., & Imada, S. (1999). The CAD triad hypothesis: a mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *Journal of Personality and Social Psychology*, 76(4), 574–586. <https://doi.org/10.1037/0022-3514.76.4.574>
- Rubin, L. H., Witkiewitz, K., Andre, J. S., & Reilly, S. (2007). Methods for handling missing data in the behavioral neurosciences: Don’t throw the baby rat out with the bath water. *Journal of Undergraduate Neuroscience Education*, 5, 71–77.
- Rüsch, N., Angermeyer, M. C., & Corrigan, P. W. (2005). Mental illness stigma: Concepts, consequences, and initiatives to reduce stigma. *European Psychiatry*, 20(8), 529–539. <https://doi.org/10.1016/j.eurpsy.2005.04.004>
- Rüsch, N., Todd, A. R., Bodenhausen, G. V., & Corrigan, P. W. (2010a). Biogenetic models of psychopathology, implicit guilt, and mental illness stigma. *Psychiatry Research*, 179(3), 328–332. <https://doi.org/10.1016/j.psychres.2009.09.010>
- Rüsch, N., Todd, A. R., Bodenhausen, G. V., & Corrigan, P. W. (2010b). Do people with mental illness deserve what they get? Links between meritocratic worldviews and implicit versus explicit stigma. *European Archives of Psychiatry and Clinical Neuroscience*, 260(8), 617–625. <https://doi.org/10.1007/s00406-010-0111-4>
- Sadler, M. S., Kaye, K. E., & Vaughn, A. A. (2015). Competence and warmth stereotypes prompt mental illness stigma through emotions: Emotions mediate mental illness stigma. *Journal of Applied Social Psychology*, 45(11), 602–612. <https://doi.org/10.1111/jasp.12323>
- Sadler, M. S., Meagor, E. L., & Kaye, K. E. (2012). Stereotypes of mental disorders differ in competence and warmth. *Social Science & Medicine*, 74(6), 915–922. <https://doi.org/10.1016/j.socscimed.2011.12.019>
- Sartorius, N. (2007). Stigmatized illnesses and health care. *Croatian Medical Journal*, 48(3), 396–397.
- Schomerus, G., Matschinger, H., & Angermeyer, M. C. (2014). Causal beliefs of the public and social acceptance of persons with mental illness: a comparative analysis of schizophrenia, depression and alcohol dependence. *Psychological Medicine*, 44(02), 303–314. <https://doi.org/10.1017/S003329171300072X>

- Schomerus, G., Schwahn, C., Holzinger, A., Corrigan, P. W., Grabe, H. J., Carta, M. G., & Angermeyer, M. C. (2012). Evolution of public attitudes about mental illness: a systematic review and meta-analysis: Evolution of public attitudes. *Acta Psychiatrica Scandinavica*, 125(6), 440–452. <https://doi.org/10.1111/j.1600-0447.2012.01826.x>
- Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In *Affect, Cognition and Stereotyping* (pp. 297–315). San Diego, CA: Academic Press. <https://doi.org/10.1016/B978-0-08-088579-7.50017-X>
- Stanford, M. S. (2007). Demon or disorder: A survey of attitudes toward mental illness in the Christian church. *Mental Health, Religion and Culture*, 10(5), 445–449. <https://doi.org/10.1080/13674670600903049>
- Stanford, M. S., & McAlister, K. R. (2008). Perceptions of serious mental illness in the local church. *Journal of Religion, Disability & Health*, 12(2), 144–153. <https://doi.org/10.1080/15228960802160654>
- Stangor, C., & Dovidio, J. F. (2000). Threat and the social construction of stigma. In T. F. Heatherton, R. E. Kleck, M. R. Hebl, J. G. Hull, & J. G. Hull (Eds.), *The Social Psychology of Stigma* (pp. 62–87). New York, NY: Guilford Press.
- Substance Abuse and Mental Health Services Administration. (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & W. Worsel (Eds.), *The Social Psychology of Intergroup Relations* (pp. 33–47). Monterey: Brooks-Cole.
- Thornicroft, G., Brohan, E., Kassam, A., & Lewis-Holmes, E. (2008). Reducing stigma and discrimination: Candidate interventions. *International Journal of Mental Health Systems*, 2(1), 3. <https://doi.org/10.1186/1752-4458-2-3>
- Thornicroft, G., Rose, D., Kassam, A., & Sartorius, N. (2007). Stigma: Ignorance, prejudice or discrimination? *The British Journal of Psychiatry*, 190(3), 192–193. <https://doi.org/10.1192/bjp.bp.106.025791>
- van Zomeren, M., Spears, R., & Leach, C. W. (2008). Exploring psychological mechanisms of collective action: Does relevance of group identity influence how people cope with collective disadvantage? *British Journal of Social Psychology*, 47(2), 353–372. <https://doi.org/10.1348/014466607X231091>

- Watson, A. C., Corrigan, P. W., Larson, J. E., & Sells, M. (2007). Self-stigma in people with mental illness. *Schizophrenia Bulletin*, 33(6), 1312–1318. <https://doi.org/10.1093/schbul/sbl076>
- Wesselmann, E. D., & Graziano, W. G. (2010). Sinful and/or possessed? Religious beliefs and mental illness stigma. *Journal of Social and Clinical Psychology; New York*, 29(4), 402–437. <https://doi.org/10.1521/jscp.2010.29.4.402>
- Weiner, B., Perry, R. P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology*, 55(5), 738–748. <https://doi.org/10.1037/0022-3514.55.5.738>
- Wood, L., Birtel, M., Alsawy, S., Pyle, M., & Morrison, A. (2014). Public perceptions of stigma towards people with schizophrenia, depression, and anxiety. *Psychiatry Research*, 220(1), 604–608. <https://doi.org/10.1016/j.psychres.2014.07.012>
- Ysseldyk, R., Matheson, K., & Anisman, H. (2010). Religiosity as identity: Toward an understanding of religion from a social identity perspective. *Personality and Social Psychology Review*, 14(1), 60–71. <https://doi.org/10.1177/1088868309349693>
- Yzerbyt, V., Dumont, M., Wigboldus, D., & Gordijn, E. (2003). I feel for us: The impact of categorization and identification on emotions and action tendencies. *The British Journal of Social Psychology; Leicester*, 42, 533–549. <https://doi.org/10.1348/014466603322595266>