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ATTRIBUTIONS

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KEVIN RYAN BELL
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WHO AM I TO JUDGE? INTELLECTUAL HUMILITY AND DISPOSITIONAL
ATTRIBUTIONS

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

BY THE COMMITTEE CONSISTING OF

Dr. Mauricio Carvallo, Chair

Dr. Carolin Showers

Dr. Robert Terry

Dr. Jennifer Barnes

Dr. Scott Gronlund

Dr. Alisa Hicklin Fryar

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Abstract

According to the attribution-value model, a great deal of stigmatization and prejudice stem from the belief that an individual's character is to blame for their "negative" traits or qualities. Such dispositional attributions are also known to predict less forgiveness after a transgression. While investigations into the antecedents of such dispositional attributions have been numerous, a positive psychology approach has been underutilized, especially in the case of intellectual humility. In three investigations, I examine the hypothesis that those high in intellectual humility will be more likely to make complex attributions about the reason behind an individual's behavior or appearance, leading to lower levels of dispositional blame. This model is examined in the context of one's attitudes toward a hypothetical roommate showing signs of alcohol use disorder, obesity prejudice, and forgiveness after a hypothetical transgression. Internal motivation to control prejudice and perspective taking serve as additional mediators in the context of obesity prejudice and forgiveness, respectively. Results from these investigations show that intellectual humility displays significant indirect effects on these outcomes through lower blame, internal motivation to respond without prejudice and attributional judgments. Implications of these findings are discussed.

Who am I to judge? Intellectual Humility and Dispositional Attributions

For much of the twentieth century, researchers were cautious about studying traits considered virtuous, as a result of their desire to remain objective and unbiased in their scientific approach (Hill & Sandage, 2016; Leary, 2018). Because of this, the vast majority of psychology literature has focused on negative aspects of human behavior instead of ways to enhance general wellbeing (Seligman & Csikszentmihalyi, 2000). It is only within the last 20 years that many positive psychological concepts have been identified and explored (Leary, 2018). Such investigations have recently given rise to a new movement in the field, known as positive psychology, which focuses on characteristics, virtues, and experiences that foster human flourishing (Seligman & Csikszentmihalyi, 2000). Rather than advocating adherence to certain virtues, the goal of positive psychology is to describe the effects such characteristics have on the self and society. In doing so, positive psychology is not only devoted to characteristics that lead to greater happiness, but also those that can buffer against distress, anger, and aggression (Seligman & Csikszentmihalyi, 2000). Despite the relevance of such studies, this field, and the many traits and virtues it encapsulates, are still in early stages of investigation.

Intellectual Humility

One such virtue encapsulated by positive psychology is humility (Hill & Sandage, 2016). While historically, humility was perceived as dwelling on one's shortcomings, it has since been viewed as a beneficial trait, linked to a series of positive attitudes, including a willingness to see oneself accurately, an other-oriented interpersonal approach that appreciates the skills of others, and an openness to learn from others (Hill & Sandage, 2016). Some theorizations even point to humility serving as a master virtue, which facilitates several other virtues by regulating the ego

(Lavelock et al., 2017; Seligman, 2002). Despite the importance of humility, its defining characteristics are broad and difficult to confine into a single construct (Davis et al., 2010). As such, specific offshoots of humility research have emerged to conceptualize certain aspects of this virtue. Intellectual humility is one such construct, which distinguishes itself from general humility in its focus on personal awareness that one's understanding of the world could be wrong, coupled with a willingness to investigate information that may counter one's personal opinions (Leary, 2018). As such, intellectual humility alerts one to the potential blind spots inherent in their viewpoint and creates a desire to hold an accurate view of one's social world (Hill & Sandage, 2016; Krumrei-Mancuso, et al., 2019; Leary et al., 2017). Thus, intellectual humility, at its core, is a cognitive phenomenon that relies on metacognitive thinking (Leary, 2018).

The existing literature on intellectual humility has shown that this construct may affect how individuals react to arguments that counter their worldview, judge others who disagree on a particular topic, respond to criticism, learn new information, and perceive others who change their minds (Krumrei-Mancuso, et al., 2020; Leary et al., 2017; Porter & Schumann, 2018; Van Tongeren, 2016). For instance, Van Tongeren and colleagues (2016) found that those high in intellectual humility displayed lower aggression toward an individual who wrote an essay criticizing their religion. High intellectual humility is also associated with raters assigning positive qualities to essay writers and showing them respect, even if the essays advocated a position contrary to their own opinions (Leary et al., 2017; Porter & Schumann, 2018). In other words, those high in intellectual humility can recognize the quality of an argument even when they disagree with the advocated position. Furthermore, Krumrei-Mancuso, et al., (2020) associated intellectual humility with an intrinsic motivation to acquire general knowledge and

less social vigilantism. This indicates that those high in intellectual humility are motivated to learn about other perspectives without feelings of superiority or the need to defend their own worldview through aggressive emotions or acts of derogation.

As a construct, intellectual humility correlates positively with traits such as openness, agreeableness, need for cognition, and general humility, whereas it shares a negative correlation with narcissism and intolerance for ambiguity (Brienza et al., 2012; Krumrei-Mancuso & Rouse, 2016; Leary et al., 2017; Porter and Schumann, 2018). Furthermore, intellectual humility is associated with higher levels of gratitude and empathy, which can lead to greater benevolence and altruism (Krumrei-Mancuso & Rouse, 2016). Such findings suggest that those high in intellectual humility are more likely to appreciate and show concern for the viewpoints of others.

Attributional Complexity

As a metacognitive trait, intellectual humility affects how people think about and perceive their social world. Individuals high in intellectual humility are more likely to question their understanding and seek multiple perspectives (Leary, 2018). This cognitive pattern is closely aligned to attributional complexity, a cognitive preference for complex explanations over simple ones and a willingness to place effort into understanding the reasons for a particular behavior (Brienza et al., 2018; Fletcher et al, 1986; Joireman, 2004). Individuals high in attributional complexity are less likely to fall victim to the correspondence bias as they do not intuitively blame a person after a single behavioral display (Gilbert & Malone, 1995; Joireman, 2004). Such individuals are more likely to look at a situation from multiple angles before making an attribution and prefer explanations that contain higher levels of nuance.

Differences in attributional complexity have been linked to various outcomes concerning treatment and consideration of others. Pope and Meyer (1999) found that when placed as a juror

in a mock trial, those high in attributional complexity were more likely to look for external causes of the defendant's behavior and were more likely to judge them as not guilty. Additionally, attributional complexity is correlated with lower endorsement of capital punishment, less racism, and increased support for criminal rehabilitation (Tam, Au, & Leung, 2008). Even when measuring responses to the September 11th attacks, attributional complexity predicted less anger, more sadness, and more blame directed towards U.S. foreign policy than any particular group of people for the attacks (Sadler, et al, 2005). Conceptually, it is believed that those high in attributional complexity are more willing to consider reasons for an outgroup's behavior, which may lessen intergroup tensions (Stephan, 2014).

Attribution-Value Model

The connection between intellectual humility and attributional complexity may hold relevance in predicting less judgmental attitudes toward individuals. According to the attribution-value model of prejudice, a large portion of negative beliefs directed toward groups or individuals stem from holding them personally responsible for their negative stereotypes or characteristics (Crandall, 2001; Sakalli, 2002; Weiner 1996). Herein, when an individual is believed to be blameworthy for an undesirable quality, they are often treated as if those negative qualities reflect their character. Such thinking creates the mindset that people get what they deserve, wherein individuals who display socially desirable characteristics deserve praise, admiration, and respect but those who display undesirable characteristics deserve their discrimination, stigmatization, and ostracism (Crandall, 2001; Feather, 1996). Such attributions of blame can lead to increased irritation, greater desire for social distancing, less pity, more anger, and less prosocial behavior directed toward individuals who are associated with perceived

negative outcomes or characteristics (Angermeyer et al., 2003; Corrigan et al., 2000; 2002; Dijker & Kooman, 2003; Mantler et al., 2003; Rodin, et al., 1989; Weiner 1996).

Based on the extant literature, I expect that intellectual humility and attributional complexity will work in conjunction to predict less internal judgments of others across a variety of contexts. Herein, the intellectually humble individual, realizing their perspective is limited, will feel less able to judge others for their characteristics or behaviors, as they realize they do not have the full picture (Krumrei-Mancuso, et al., 2020; Leary et al., 2017; Porter & Schumann, 2018; Van Tongeren et al., 2016). As such, they will rely on more complex attributions when explaining others' behavior or characteristics (Brienza et al., 201). This should lead to a lower likelihood of engaging in the fundamental attribution error and its associated negative outcomes (Crandall, 2001; Gilbert & Malone, 1995; Joireman, 2004; Sakalli, 2002; Pope & Meyer, 1999; Tam, Au, & Leung, 2008 Weiner 1996). To investigate this proposed pathway, this study focuses on three contexts that are often associated with making judgments based on limited information.

Mental Illness Stigma

The first context this study investigates is mental illness stigma (MIS), or the collection of negative social attitudes about those with a mental illness (Rüsch et al., 2005). These negative attitudes include beliefs that individuals with a mental illness are dangerous, flawed, or lack intelligence (Angermeyer, et al., 2003; Corrigan & Kosyluk, 2014; Fox et al., 2019; González-Torres, et al., 2007; Hengartner et al., 2013; Weiner, Perry, & Magnusson, 1988; Weiss, 1994). Such appraisals stem from the assumption that a mental illness is controllable and those with them are responsible for their condition (Mantler, et al., 2003). As such, this often leads to the belief that an individual's mental illness is a reflection of their character (Corrigan et al., 2000). These attributions of blame are associated with increased irritation, greater desire for social

distancing, less pity, more anger, and less prosocial behavior directed towards mentally ill individuals (Angermeyer et al., 2013; Corrigan et al., 2000; 2002; Dijker & Kooman, 2003; Mantler et al., 2003; Rodin, et al., 1989; Weiner et al., 1988; Weiner, 1995). While those with a mental illness often face greater stigmatization and are believed to be more dangerous than those with a physical disorder, some mental illnesses face greater negative attitudes than others (Corrigan, Kuwabara, and O'shaughnessy, 2009). For instance, when compared to individuals who have depression or schizophrenia, individuals who have an alcohol use disorder (AUD) elicit stronger negative emotional reactions, an increase desire for social distancing, and lower support of rehabilitation programs, (Schomerus et al., 2011). Thus, the perceived cause of a mental illness appears to be instrumental in predicting attitudes and behaviors directed at individuals with mental illnesses.

Obesity Prejudice

Not only can internal attributions lead to stigmatization, but the literature also supports the notion that such thinking can lead to prejudicial attitudes. Whereas stigma holds an individual responsible for their personal characteristics, prejudice holds the individual responsible for the characteristics of the entire group they are associated with (Crandall, 2001). This prejudice can occur without contact and only requires that the perceiver holds negative beliefs toward a certain group associated with the target. While prejudice can occur based on gender, sexual orientation, race, and religion, one group that is commonly the victim of prejudicial attitudes are obese individuals. It is estimated that approximately 42% of American adults over the age of 20 qualify as obese (Frar, Carroll, & Afful, 2020), with similar rates among the traditional college population (Pope, Hansen, & Harvey, 2016). Despite obesity affecting a large portion of the population, obese individuals, especially women, report facing

discrimination and mistreatment on a similar level to that of racial or gender discrimination (Puhl, Andreyeva, & Brownell, 2008). Despite obesity rates steadily growing over recent years, anti-fat attitudes are also increasing and exist across cultures (Crandall, 2001; O'Brien et al., 2013). Herein, obese individuals are often believed, as a collective, to be lazy, devoid of self-control, gluttonous, and lacking intelligence (Puhl & Heuer, 2009). Not only is this prejudice derived from the idea that obese individuals lack psychological character, but it is also coupled with the belief that such individuals are unappealing to have around (van Leeuwen, Hunt, & Park, 2015). As such, O'Brien and colleagues (2013) found that anti-fat prejudice predicted lower willingness to hire an obese individual or promote them to a leadership position. In support of the attribution-value model, Crandall and colleagues (2001) found that the more personally responsible an individual was believed to be for their weight, the more prejudice they faced. Furthermore, Pearl and Lebowitz (2014) found that biological attributions for obesity were associated with less blame but also lower beliefs in malleability, whereas personal responsibility attributions were associated with high prejudice blame. This study also found that focusing on the food-environment promoted greater food policy support and malleability beliefs, without any negative beliefs, indicating that taking a complex approach to the cause of obesity may lead to the greatest outcomes. This notion is supported by the existence of a negative relationship between attributional complexity and anti-fat attitudes (Jackson et al., 2015).

Forgiveness

While the previous two contexts focus on using intellectual humility and attributional complexity as buffers against negative attitudes, the final context will use these metacognitive traits as predictors of forgiveness. Forgiveness entails a desire to set aside negative emotions, thoughts, and attitudes after a wrongdoing and re-establish a relationship (Davis et al., 2015;

Exline et al., 2008). However, because forgiveness can be costly in terms of pride and immediate self-interest, several factors are often considered before one makes the decision to forgive (Exline & Baumeister, 2000; Davis et al., 2015). As such, the offended party undergoes a sense-making process after a transgression occurs in which they consider the intentions and circumstances they believe lead to the event (Fehr, Gelfand, & Nag, 2010). One's attributions can starkly impact their willingness to forgive transgressors. Research suggests that the more responsible, blameworthy, and intentional the offender is perceived to be, the harder it is to forgive them (Boon & Sulsky, 1997; Furman et al., 2017; McCullough et al., 1998; Merolla & Zhang, 2011). Furthermore, Furman and colleagues, (1997) found that attributions of intent, selfishness, blame, and globality were associated with lower levels of forgiveness. Such attributions are also associated with greater anger, antisocial attitudes, and avoidance in the wake of an offense (Davis et al., 2015; Fehr et al., 2015). Ironically, Struthers and colleagues (2008) suggest once one is believed to have acted intentionally in an offense, apologies may actually decrease the likelihood of forgiveness. Such attributions can even alter the effect of characteristics that are often thought to predict greater forgiveness. For instance, Lucas, Galinsky, and Murnighan (2016) found that when one assigned malevolent intention to a transgressor, perspective taking served to increase condemnation, whereas perspective taking lead to greater forgiveness when it was believed a transgressor carried benevolent intentions.

Intellectual Humility and Withholding Judgment

Outside of attributions, other personal characteristics are also instrumental in predicting unforgiveness, stigmatization, and prejudice. For example, social dominance orientation, right wing authoritarianism, pride, and self-aggrandizement are associated with each of these outcomes (Ashton-James, & Tracy, 2012; Khoury et al., 2012; de Zavala et al., 2009; Exline et

al., 2004; Khoury, et al., 2012; Mantler et al., 2003; Phelan & Basow, 2007; Szeto, et al., 2015; Sibley & Duckitt, 2008; Yuan et al., 2018). In the context of stigma and prejudice, much of the psychological literature has focused on traits such as these that are known to exacerbate negative reactions (Sibley & Duckitt, 2008). While investigations into forgiveness have utilized positive psychology approach, this approach has been underutilized in studying characteristics associated with lower levels of stigma and prejudice. Despite this limited scope, such research has revealed that the traits of agreeableness, openness, perspective taking, kindness, and empathy share associations with lower levels of stigma and prejudice, along with higher levels of forgiveness (Brown, 2012; Exline et al., 2008; Mantler et al., 2003; Phelan and Basow, 2007; Economou et al., 2019; Sibley & Duckitt, 2008; Szeto et al., 2015; Vertilo & Gibson, 2014). These traits are also commonly associated with intellectual humility, suggesting that this trait may also serve a role in these processes (Krumrei-Mancuso, et al., 2020; Leary et al., 2017; Porter & Schumann, 2018; Van Tongeren, 2016).

Although past research has not directly tested the association between intellectual humility and MIS or antifat prejudice, Zhange and colleagues (2015) previously found a relationship between intellectual humility and forgiveness of a religious leader who had left a congregation. However, this study was correlational and did not investigate forgiveness in the context of a personal transgression. As such, I propose that intellectual humility's specific link with attributional complexity should predict lower levels of MIS, anti-fat prejudice, and greater forgiveness, as both traits pertain to a desire to withhold judgment and seek information from multiple sources (Sadler et al., 2005; Krumrei-Mancuso, 2017; Leary et al., 2017; Porter & Schumann, 2018; Roberts & Wood, 2003; Tam, et al., 2008).

Perspective Taking and Motivation to Respond Without Prejudice

It is possible that other personal characteristics may mediate the link between intellectual and attributional complexity to these outcomes aside from blame. Two likely candidates are perspective taking and internal motivation to respond without prejudice. Perspective taking was selected because this trait has been associated with both intellectual humility and lower internal attributions (Fletcher et al., 1986; Joireman, 2004; Krumrei-Mancuso, 2018; Leary et al., 2017). Herein, variations of intellectual humility have been shown to predict individual levels of perspective taking and intellectual humility interventions were associated with greater compromise and consideration of others' goals (Krumrei-Mancuso, 2018; Meagher et al., 2018). Furthermore, perspective taking mediates the connection between attributional complexity and empathy, indicating that this trait may serve to connect metacognitive traits to emotional responses (Joireman, 2004). Perspective taking has also been associated with a greater ability to find situational factors that may affect outgroup behavior (Galinsky & Moskowitz, 2000). As a predictor, Economou and colleagues (2019) found that perspective taking was linked to less social distancing and more positive beliefs about those with a mental illness. Similarly, perspective taking interventions have been linked with more positive attitudes toward overweight individuals (Gloor et al., 2016; Meadows et al., 2017). As previously mentioned, while perspective taking is generally associated with forgiveness, it can also serve to increase condemnation if the wronged party perceives the transgressor to be intentional in their actions (Lucas, Galinsky, & Murnighan, 2016).

Internal motivation to respond without prejudice (IMS) may also play a role in withholding judgment toward individuals who are obese or possess a mental illness. This individual difference represents a self-motivated standard against prejudice, as opposed to being motivated by normative influences (Plant & Devine, 1998). Evidence even shows that those high

in IMS display different physiological and neurological responses when exposed to outgroups, which allows for greater stereotype suppression and implicit prejudice regulation (Amodio et al., 2006; Legault et al., 2009; Li et al., 2016). As such, this trait is associated with high quality intergroup contact, successful prejudice control, and positive intergroup interactions (Plant & Devine, 1998). While most studies have utilized IMS in a racial context, it has been used in the context of LGBTQ+ prejudice and in diversity training interventions, indicating this trait may be applicable to many groups commonly discriminated against (Lindsey et al., 2014; Ratcliff et al., 2006). As a trait, IMS is associated with higher levels of perspective taking, empathy, and respect (LaCrosse & Plant, 2020) and mediates the link between gender and prejudice toward gay or lesbian individuals (Ratcliff et al., 2006).

Rationale and Hypotheses

While intellectual humility has been linked to greater levels of attributional complexity and withholding negative judgments toward those who contradict one's worldview, this trait has seldomly been explored outside the context of belief-based differences (Brienza et al., 2018; Gilbert & Malone, 1995; Joireman, 2004; Leary et al., 2017; Porter & Schumann, 2018; Van Tongeren et al., 2016). In this study, I predicted that intellectual humility would work through attributional complexity to predict lower levels of blame, which would be associated with less stigmatization, prejudice, and unforgiveness. While I believed that this mechanism would be predictive with each outcome, I believed that an additional mediator will further explain this model in the contexts of prejudice and forgiveness.

First, I investigated this model in the context of mental illness stigmatization. Although a great deal of stigmatization revolves around one's perception of others, it also possesses a behavioral component, as people display increased irritation, greater social distancing, less pity,

and less prosocial behavior towards those who are stigmatized. (Angermeyer et al., 2013; Corrigan et al., 2000; 2002; Dijker and Kooman, 2003; Mantler et al., 2003; Rodin, Price, Sanchez, & McElligot, 1989; Weiner 1996). With this in mind, I sought to determine the indirect effects of intellectual humility on behavioral intentions towards a hypothetical individual with the mental illness of AUD, as this mental illness elicits particularly high levels of stigma and blame (Schomerus et al., 2011). Despite the high level of stigma attached to AUD, this disorder is fairly common on college campuses, with estimates that 20% of college students meet the criteria for AUD and nearly 37% of college students have engaged in binge drinking (Blanco et al., 2008; NIAAA, 2020). Given the connections between intellectual humility and attributional complexity (Brienza et al., 2018), attributional complexity and blame (Gilbert & Malone, 1995; Joireman, 2004), and blame with stigmatization (Weiner, Perry, & Magnusson, 1988), I predicted that intellectual humility would work through attributional complexity to predict lower levels of mental illness blame. This lower mental illness blame should not only predict less stigmatizing beliefs and attitudes, but should also lead to more prosocial behavior and comfortability directed towards stigmatized individuals, (Mitchell & Kovera, 2006). In this context, I did not expect that perspective taking or internal motivation to respond without prejudice would contribute significantly to the model, as mental illness stigma is largely predicted by perceived blame, which is strongly associated with differences in attributional complexity (Joireman, 2004; Schomerus et al., 2011).

In the context of obesity prejudice, I proposed that the metacognitive approach shared by intellectual humility and attributional complexity should not only lead to lower levels of blame but should also be associated with a higher internal motivation to respond without prejudice. While dispositional attributions of blame play a large role in exacerbating prejudicial attitudes

(Crandall, 2001; O'Brien et al., 2013; Jackson et al., 2015; Weiner et al., 1988), the desire to seek information from multiple sources and the recognition that one's perspective is limited should also internally motivate an individual to respond in an unprejudiced manner (Joireman, 2004; Leary et al., 2017; Sherman et al., 2006). As previous literature shows that prejudiced individuals show bias in the how they process information and what they pay attention to, it would follow that individuals who have a strong desire to avoid bias should have an internal motivation to respond without prejudice (Vescio & Biernat, 1999; Wittenbrink, Gist, & Hilton, 1997). Ratcliff and colleagues (2006) utilized IMS to mediate the link between gender and LGBTQ+ prejudice, furthering the notion that this variable may vary based on personal characteristics. Although attributional complexity has already been linked with lower levels of anti-fat prejudice, variables that may mediate this process remain unexplored. Additionally, this will be the first study to apply intellectual humility to the context of obesity prejudice. Herein, I predict that intellectual humility through attributional complexity should lead to lower levels of blaming obese individuals for their condition, along with a higher internal motivation to respond without prejudice, and more positive attitudes toward obese individuals in general.

While intellectual humility has been linked to greater forgiveness of a religious leader who offended their congregation (Zhange et al., 2015), this relationship has not been tested in the context of personal transgression. Because attributions of intentionality are strongly linked to unwillingness to forgive (Davis et al., 2015; Furman et al., 2017), I proposed that intellectual humility will predict greater forgiveness, as it predisposes an individual to consider all the factors that may have led to an action, including the perspective of a transgressor (Brienza et al., 2018; Fletcher et al, 1986; Joireman, 2004; Leary et al., 2017). Thus, I predicted that intellectual humility and attributional complexity's association with perspective taking should predict lower

levels of blame and negative attributions toward a transgressor, which will predict forgiveness in the form of greater benevolence, less avoidance, and a lower desire for revenge. Herein, perspective taking is known to amplify how one perceives an offender. If one is prone to making dispositional attributions, then perspective taking will increase the level of judgment and blame directed at the offender, whereas perspective taking can serve to reduce judgment and blame when situational attributions are made. Additionally, Takaku (2001) found that after a hypothetical transgression, being asked to think about the transgressor's motives, thoughts, and feelings lead to more positive attributions of the transgressor and greater forgiveness. As those high in attributional complexity are more likely to consider external reasons behind an action (Pope & Meyer, 1999), it follows that they will be less likely to assign attributions of intentionality and malevolence toward the offender (Davis et al., 2015; Furman et al., 2017). Herein, perspective taking is also believed to play a large role, as the nature of one's attributions of the offender determine if perspective taking will lead to greater forgiveness or condemnation (Lucas et al., 2016).

Hypothesis 1: In the context of mental illness stigma, intellectual humility will work indirectly through higher levels of attributional complexity and lower levels of mental illness blame to have an effect on lower mental illness stigma, along with higher levels of prosociality, social closeness, and comfortability.

Hypothesis 2: In the context of obesity prejudice, internal motivation to respond without prejudice will serve as an additional mediator through which intellectual humility will have an indirect effect on views of obese individuals in addition to attributional complexity and blame.

Hypothesis 3: In the context of forgiveness, perspective taking will serve as an additional mediator beyond attributional complexity and blame through which intellectual has an indirect effect on lower levels of revenge and avoidance, along with higher levels of benevolence.

Overview of Proposed Studies

The goal of this research was to test the assumption that intellectual humility is associated with lower dispositional judgments toward an individual, which will be associated with greater forgiveness, less stigmatization, and less prejudice. To test Hypothesis 1, I utilized a vignette-based approach wherein participants read about and responded to a hypothetical roommate (“Bill” for males, “Susan” for females) who displays symptoms of AUD. Hypothesis 2 was tested using measures of obesity prejudice and bias against obese individuals. Finally, hypothesis 3 utilized a vignette once more to test the extent that the participant would forgive a hypothetical coworker named Sam told an embarrassing story about them to fellow coworkers.

Method

Participants

A total of 220 undergraduates (137 females) at the University of Oklahoma participated in this study as partial fulfillment of a course requirement. The average participant age was 19.58 ($SD = 3.17$). The majority of this sample was Caucasian (67.6%), while the remainder identified as Latino or Hispanic (10.5%), African American (9.1%), Asian (8.2%), Native American (1.8%), Native Hawaiian or Pacific Islander (0.5%).

Materials

Predictor Variables

Intellectual Humility. The General Intellectual Humility Scale (Leary et al., 2017) assesses participants' capacity to recognize that their knowledge and viewpoints are based on limited information and subject to being wrong. This scale consists of 6 items on a scale ranging from 1 (*not at all like me*) to 5 (*very much like me*) and included statements such as "I recognize value in opinions that are not my own" and "I question my own opinions, positions, and viewpoints because they could be wrong" ($\alpha = .795$).

Attributional Complexity. This scale was used to measure participants' propensity to seek complex explanations for behaviors rather than simple ones, (Fletcher et al., 1986) and is made up of 28 items on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample Items include "I think a lot about the influence that society has on other people" and "I really enjoy analyzing the reasons or causes for people's behavior" ($\alpha = .894$).

Perspective Taking (PT). This measure was developed by Davis (1980) as part of the interpersonal reactivity index (IRI) and is designed to assess one's propensity to adopt the psychological point of view of others. Perspective taking is measured using 7-items out of the 28 items on the (IRI) and includes statements such as "I try to look at everybody's side of a disagreement before I make a decision". Statements are answered on a scale of 1 (does not describe me very well) to 5 (describes me very well) ($\alpha = .797$).

Mental Illness Variables

Internal Motivation to Respond without Prejudice (IMS). Adapted from the scale used by Plant and Devine (1998) to measure prejudice against African Americans, items were reworded to use "people with a mental illness" as the target. Participants answered 5 items on a scale of 1 (very false) to 9 (very true) detailing the personal importance of acting and behaving non-

prejudiced. A sample item included “Because of my personal values, I believe using stereotypes about people with a mental illness is wrong”. ($\alpha = .854$).

Mental Illness Blame. Attributions of blame towards individuals with mental illnesses was adapted from a scale used by Mantler et al. (2003) to assess levels of blame directed towards an individual with AIDS. Participants answered four questions on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Items included “A person with a mental illness is to blame for having mental illness” and “It is a person’s own fault that they are mentally ill”. Endorsement of this measure was believed to represent the fundamental attribution/correspondence bias, as this measure stresses personal, as opposed to situational factors, in the ascription of blame ($\alpha = .721$).

Mental Illness Stigma. The Beliefs towards Mental Illness Scale (BtMI; Hirai et al., 2006) was used to assess three components of mental illness stigma -- dangerousness, interpersonal skills, and recurrence -- which were combined to form a global measure of mental illness stigma. Items were answered on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items are: “A mentally ill person is more likely to harm others than a normal person”, “It might be difficult for mentally ill people to follow social rules such as being punctual or keeping promises”, and “I do not believe that psychological disorders are ever completely cured” ($\alpha = .895$)

Social Closeness. This measure was constructed to assess the degree of social affiliation participants would desire regarding the hypothetical roommate. Responses to the 8-item scale ranged from 1 (*not at all*) to 7 (*very much*). It included items such as “How comfortable would you be if Bill/Susan married into your family?” and “How comfortable would you be if Bill/Susan were part of the group of friends you usually hang out with”. Other items in the scale

assessed how comfortable participants would be living with their roommate, being a partner for class, or being employed together. ($\alpha = .879$).

Comfortability. This measure assessed the degree of comfort participants would feel being around the hypothetical roommate. Responses to the 7-item scale ranged from 1 (*not at all*) to 7 (*very much*). Items included “How embarrassed are you of Bill/Susan?” and “How comfortable would you be being seen out in public with Bill/Susan?” ($\alpha = .874$)

Prosocial Behavior. Two items were used to assess prosocial behavior towards the roommate. These were “To what extent would you be willing to offer Bill/Susan personal assistance?” and “To what extent would you be willing to drive Bill/Susan to counseling (once a week)?” Participants responded on a 7-point scale ranging from 1 (*not at all willing*) to 7 (*very willing*). ($\alpha = .761$)

Obesity Variables

Obesity Blame. As in mental illness blame, attribution of blame towards obese individuals was measured by adapting the scale created by Mantler et al. (2003), to change the target to obese individuals. Herein, participants answered four questions on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), such as “An obese person is to blame for their obesity” and “It is a person’s own fault that they are obese”. ($\alpha = .763$)

Anti-obese Prejudice. This scale was developed by Crandall (1994) as a measurement of prejudice based on weight. While the Crandall (1994) scale uses “fat people” as the target, this scale used “obese individuals” instead. Sample items included “I have a hard time taking obese people seriously” and “If I were an employer looking to hire, I might avoid hiring an obese person”. Participants endorsed 7 such statements on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). ($\alpha = .865$).

Bias against Obese Individuals. Bias against obese individuals was measured using an adaptation of the Universal Measure of Bias-Fat (UMB-Fat) scale developed by Latner and colleagues (2014). For this study “obese” was substituted for “fat” in each item. This scale consisted of 20 items on a scale ranging from 1 (strongly disagree) to 7 (strongly agree) and contained 4 subscales. Negative feelings toward obese individuals were assessed using the *adverse judgment* and *social distance* subscales, which included items such as “obese people tend toward bad behavior” and “I wouldn’t like having an obese person at my place of worship or community”, respectively. Positive associations with obese individuals were assessed with the *equal rights* subscale, which included items such as “special effort should be taken to make sure that obese people have the same housing opportunities as other people”. The *attractive* subscale of this measure was not utilized for this study. (Adverse judgment, $\alpha = .840$; social distance, $\alpha = .823$; equal rights, $\alpha = .890$).

Internal Motivation to Respond without Prejudice (IMS) Participants completed an adaptation of Plant and Devine scale measuring one’s motivation to refrain from prejudicial behavior, which used “obese people” as the target for 5 items on a scale of 1 (very false) to 9 (very true). Items included “Because of my personal values, I believe using stereotypes about obese people is wrong” $\alpha = .913$).

Forgiveness Variables

Negative Attributions of Sam. Dispositional judgments about Sam’s character were assessed using items adapted from the relationship attribution measure (Furman et al., 2017). Herein, participants answered the extent they agreed to a series of statements about Sam’s disposition on a scale of 1 (strongly disagree) to 7 (strongly agree). These items included statements such as “Sam is not a good person” and “Sam is unkind” ($\alpha = .881$).

Blame Directed at Sam. Also adapted from the relationship attribution measure (Furman et al., 2017) participants responded to five statements on a scale of 1 (strongly disagree) to 7 (strongly agree) about the intentionality of Sam's behavior. These items included statements such as "Sam's actions were taken on purpose rather than unintentionally" and "Sam deserves to be blamed for their behavior ($\alpha = .590$).

Transgression Related Interpersonal Motivations (TRIM). This scale developed by McCullough and colleagues (2006) assesses one's reaction toward a transgressor in terms of desire for revenge, avoidance, and benevolence. This scale uses 18 items on a scale ranging from 1 (strongly disagree) to 7 (strongly agree) to assess desire for revenge, avoidance, and benevolence towards a transgressor. This measure followed a vignette about Sam, a hypothetical former classmate who told an embarrassing story about the participant at their new job. Revenge towards the transgressor was measured by items such as "I would want to get even", avoidance used items such as "I'd want to keep as much distance between us as possible", and benevolence used items including "Even though Sam's actions hurt me, I would have goodwill for him/her. (Avoidance, $\alpha = .898$; Revenge, $\alpha = .907$; benevolence $\alpha = .757$).

Procedure

Participants voluntarily participated in this online study in exchange for course credit. Measures of intellectual humility, attributional complexity, perspective taking, internal motivation to respond without prejudice, mental illness blame, and obesity blame were assessed as part of a mass online survey at the beginning of the semester. In a separate online study, participants completed measures that assessed each of the outcome variables of this study. These outcomes variables were presented in a randomized order with distractor measures separating the different variables of interest.

Mental Illness Stigmatization

To assess mental illness outcomes, participants read a vignette about a hypothetical roommate whose gender was matched to their own (“Susan” for females, “Bill” for males). Other than names and gender pronouns, the vignette was identical for males and females. In the vignette, the roommate was described as a person who is typically outgoing and high energy. However, recently they had begun to act unlike him/herself and displayed characteristics of AUD. These symptoms were based on the Alcohol Use Disorders Identification Test (World Health Organization, 2001) and included behaviors such as forgetting what had happened the night before due to drinking, needing a first drink of alcohol in the morning and having trouble focusing. The vignette ended with a statement indicating that this person was displaying symptoms that typify alcohol use disorder. Following the vignette, participants completed measures of social closeness, comfortability, and prosocial behavior.

Obesity Prejudice

Participants completed measures assessing general levels anti-obese prejudice and obesity bias as part of the second survey.

Forgiveness

To assess forgiveness, participants read a vignette about Sam, a hypothetical former classmate, who works at a company that the participant was recently hired at. In the scenario, Sam and the participant become fast friends. However, Sam later tells coworkers an embarrassing story about the participant, which hurts his or her reputation. This vignette was adapted from a forgiveness vignette by Berry and colleagues (2001). Following the vignette, participants completed the negative attributions and blame scales toward Sam, followed by the revenge, avoidance, and benevolence subscales of the TRIM (McCullough et al., 2006).

Results

Mental Illness Stigmatization

Bivariate correlations were used to test for associations between intellectual humility, attributional complexity, mental illness blame, mental illness stigma and the outcomes of comfortability, social closeness, and prosocial behavior (Table 1). Intellectual humility and attributional complexity correlated positively with each other ($r = .381, p < .001$) and both displayed significant, negative correlations with mental illness blame ($|rs| > -.248$, all $ps < .001$) and stigma ($|rs| > -.216$, all $ps < .001$). Social closeness, prosocial behavior, and comfortability correlated positively with attributional complexity ($|rs| > .162$, all $ps < .021$). However, prosocial behavior and intellectual humility were not significantly correlated with each other ($r = .119, p < .090$), despite intellectual humility being significantly correlated with comfortability and social closeness ($|rs| > .225$, all $ps < .001$). As expected, mental illness blame and mental illness stigma were negatively correlated with the three outcome variables ($|rs| > -.173$, all $ps < .015$). Internal motivation to respond without prejudice and perspective taking showed positive correlations with all the outcome variables ($|rs| > .141$, all $ps < .045$). Because comfortability and social closeness shared a large correlation ($r = .715, p < .001$), these variables were combined for further analyses into a variable labeled as “social closeness” ($\alpha = .921$) to avoid multicollinearity.

Next, I conducted structural equation modeling (SEM) using Mplus Version 5.21 (Muthén & Muthén, 1998–2016), with bias corrected bootstrapping of 95% confidence intervals to test my hypothesis that intellectual humility would work through attributional complexity and mental illness blame to predict lower levels of mental illness stigmatization along with greater social closeness and prosociality toward an individual with AUD (*Figure 1*). This hypothesized

model displayed good fit (see *Table 2*). Additionally, I tested two alternative models to ensure that this model was not better explained through additional mediators. The first alternative model included perspective taking as going from intellectual humility and attributional complexity to predict the outcome variables (see *Figure 3*) and the second alternative model utilized internal motivation to respond without prejudice in the same manner (see *Figure 4*). While these alternative models displayed acceptable fit statistics, the hypothesized model had comparable fit and was more effective at explaining the outcome variables.

In this model, intellectual humility displayed significant total indirect effects on mental illness stigma (standardized total effect, = $-.122$, $SE = .037$, 95% CI $[-.202, -.057]$, $p = .001$), social closeness (standardized total effect, = $.093$, $SE = .037$, 95% CI $[.033, .175]$, $p = .012$), and prosocial behavior (standardized total effect, = $.125$, $SE = .038$, 95% CI $[.065, .209]$, $p = .001$). Herein, there was a significant 3-path indirect effect on mental illness stigma through attributional complexity and mental illness blame (standardized indirect effect = $-.034$, $SE = .012$, 95% CI $[-.061, -.014]$, $p = .006$), which provided for a significant 4-path indirect on social closeness, (standardized indirect effect = $.011$, $SE = .005$, 95% CI $[.004, .029]$, $p = .015$). However, the only significant indirect pathway linking intellectual humility to prosocial behavior was through attributional complexity (standardized indirect effect = $.101$, $SE = .037$, 95% CI $[.039, .180]$, $p = .006$) (see *Table 3*).

Obesity Prejudice

Participants demonstrated significantly higher rates of obesity blame ($M = 3.786$, $SD = 1.196$) than mental illness blame ($M = 1.923$, $SD = 1.001$), $t(199) = 19.269$, $p < .001$. They also indicated significantly lower internal motivation to respond without prejudice toward obese

individuals ($M = 6.581$, $SD = 1.819$) as compared to those with a mental illness ($M = 7.250$, $SD = 1.448$), $t(195) = 7.538$, $p < .001$.

Bivariate correlations between the variables of interest are displayed in Table 4. Herein, whereas intellectual humility did not share a significant correlation with obesity blame or anti-obesity prejudice, these variables shared significant, negative correlations with attributional complexity ($rs > -.158$, all $ps < .025$). However, both intellectual humility and attributional complexity shared significant correlations with the remaining three outcome variables of adverse judgment ($rs > -.203$, all $ps < .004$), social distancing ($rs > -.199$, all $ps < .005$), and equality ($rs > .139$, all $ps < .048$). Obesity blame shared significant positive correlations with anti-obese prejudice, adverse judgments, and social distancing ($rs > .405$, all $ps < .001$) and a negative correlation with equal rights ($r = -.322$, $p < .001$). Internal motivation to respond without prejudice correlated negatively with obesity blame, anti-obese prejudice, adverse judgments, and social distancing ($rs > -.490$, all $ps < .000$) and positively with equality ($r = .421$, $p < .001$). Perspective taking, likewise, correlated negatively with prejudicial outcomes related to obesity ($rs > -.183$, all $ps < .009$) and positively with equality ($r = .185$, $p = .009$). Because anti-obese prejudice, adverse judgments, and social distancing were highly correlated with each other ($rs > .724$, all $ps < .001$) and all tap into negative emotions or behaviors directed at obese individuals, these variables were combined into “obesity prejudice” for further analyses to avoid multicollinearity ($\alpha = .933$).

Once again, I conducted an SEM utilizing Mplus Version 5.21 (Muthén & Muthén, 1998–2016), with bias corrected bootstrapping of 95% confidence intervals, I tested my hypothesis that intellectual humility and attributional complexity would lead to internal motivation to respond without prejudice, which, along with attributional complexity would be

associated with lower levels of obesity blame and obesity prejudice, along with higher levels equality (*Figure 4*). This model displayed excellent fit (*Table 5*). Additionally, I tested model without a third mediator (*Figure 5*) and one using perspective-taking in the place of internal motivation to respond without prejudice (*Figure 6*) as alternative models. While the perspective-taking model also displayed excellent fit, it failed in the intended purpose of predicting the outcome variables, as perspective taking does not have a significant effect on any downstream variables. Thus, the hypothesized model was selected as this was the best fitting model that served the purpose of predicting obesity prejudice and equality.

In this model, intellectual humility displayed significant total indirect effects on equality beliefs (standardized total effect, = .140, SE = .042, 95% CI [.061, .227], $p = .001$), and obesity prejudice (standardized total effect, = -.135, SE = .050, 95% CI [-.033, .175], $p = .006$). Herein, the 3-path indirect effect, wherein intellectual humility worked through attributional complexity and internal motivation to respond without prejudice was significant for both obesity prejudice (standardized indirect effect = -.053, SE = .019, 95% CI [-.232, -.035], $p = .005$) and equal rights (standardized indirect effect = .031, SE = .013, 95% CI [.011, .060], $p = .016$). Additionally, intellectual humility had a significant 2-path indirect effect on equal rights through attributional complexity (standardized indirect effect = .077, SE = .029, 95% CI [.027, .141], $p = .009$). No significant indirect pathway from intellectual humility went through obesity blame to predict the outcome variables (see *Table 6*).

Forgiveness

An error in the study flow caused 12 participants to answer questions about Sam before reading the vignette. As a result, these participants were dropped from this analysis.

Bivariate correlations between the variables of interest for forgiveness are displayed in Table 7. While intellectual humility and attributional complexity did not share significant correlations with blame, they were significantly associated with negative attributions ($r_s| > -.266$, all $p_s < .001$), along with revenge ($r_s| > -.213$, all $p_s < .003$) and benevolence ($r_s| > -.196$, all $p_s < .007$). In addition to being correlated with each other ($r = .519$, $p < .001$), negative attributions and blame shared positive correlations with avoidance ($r_s| > .525$, all $p_s < .001$) and revenge ($r_s| > .267$, all $p_s < .001$) and negative correlations with benevolence ($r_s| > -.372$, all $p_s < .001$). Similar to intellectual humility and attributional complexity, perspective taking did not correlate significantly with blame or avoidance but did share associations with negative attributions toward Sam ($r = -.228$, $p = .002$), revenge ($r = -.360$, $p < .001$) and benevolence ($r = .229$, $p = .002$).

I then conducted an SEM utilizing Mplus Version 5.21 (Muthén & Muthén, 1998–2016), with bias corrected bootstrapping of 95% confidence intervals, to consider the indirect effects of intellectual humility on avoidance, revenge, and benevolence. I first tested my hypothesized model wherein, perspective taking serves as an additional mediator between intellectual humility's connection with blame, negative judgment, and the forgiveness outcomes (Figure 7). This model displayed excellent fit (Table 8). As an alternative model, I also tested the fit if perspective taking was excluded (Figure 8). While this model displayed good fit, the model utilizing perspective taking displayed superior fit and perspective taking had effects on downstream variables. Thus, the hypothesized model was selected.

In this model, intellectual humility displayed significant total effects on negative judgment (standardized total effect, = $-.267$, SE = $.070$, 95% CI [$-.397$, $-.120$], $p < .001$), with most of this stemming from its direct effect on the variable (standardized direct effect, = $-.181$,

SE = .080, 95% CI [-.334, -.024], $p < .024$). Intellectual humility also displayed a significant total effect on revenge (standardized total effect, = -.254, SE = .050, 95% CI [-.350, -.161], $p < .001$), with significant 2-path indirect pathways coming from its association with attributional complexity (standardized indirect effect, = -.090, SE = .034, 95% CI [-.166, -.035], $p = .009$) and negative attributions (standardized indirect effect, = -.063, SE = .032, 95% CI [-.135, -.006], $p = .048$). Additionally, intellectual humility had a significant total effect on benevolence (standardized total effect, = .160, SE = .046, 95% CI [.073, .254], $p = .001$), with a significant 2-path indirect pathway going through negative attributions (standardized indirect effect, = .050, SE = .025, 95% CI [.006, .107], $p = .049$). Finally, intellectual humility had a significant total effect on avoidance (standardized total effect, = -.109, SE = .055, 95% CI [-.212, -.002], $p = .048$), with a significant 2-path indirect pathway through negative attributions (standardized indirect effect, = -.087, SE = .043, 95% CI [-.178, -.010], $p = .044$) (see *Table 9*).

Discussion

The main goal of this research was to test the assumption that intellectual humility could serve as a buffer against stigmatization, prejudice, and unforgiveness. Herein, I hypothesized that intellectual humility would primarily work through attributional complexity and lower levels of blame to predict stigmatization, obesity, and prejudice, with perspective taking and internal motivation to control prejudice providing for additional pathways in the contexts of obesity prejudice and unforgiveness, respectively. These hypotheses that were generally supported and suggest that the intellectually humble person will be more likely to make complex attributions (i.e., avoid the correspondence bias/fundamental attribution error), and thus be less likely to blame an individual's mental illness, obesity, or transgression as the result of his or her

disposition. This suggests that intellectually humble individuals will be generally less likely to stigmatize, discriminate, and desire revenge after a transgression. Such findings extend the literature on intellectual humility beyond how one responds to differences of opinion or opposing viewpoints, demonstrating that positive psychology traits such as intellectual humility might have profound ramifications for understanding stigmatization, prejudice, and unforgiveness. From its conception, one of the founding goals of positive psychology has been to investigate traits that could buffer against negative attitudes, such as aggressiveness and hostility (Seligman & Csikszentmihalyi, 2000). This research is in line with this approach and suggests intellectual humility may correct the fundamental attribution error that often results in MIS, prejudice, and unforgiveness.

The mental illness stigmatization results support the hypothesis that intellectual humility is associated with attributional complexity, lower mental illness blame and stigma, along with greater hypothetical social closeness and prosociality toward individuals with mental illnesses, even those that are highly stigmatized. Utilization of SEM also shows that intellectual humility's ability to work through other characteristics to predict prosocial outcomes, (Lavelock et al., 2017; Seligman, 2002). These results add to a growing body of literature showing that positive psychology variables can be important in buffering negative outcomes, such as stigma (Seligman & Csikszentmihalyi, 2000; Vertilo & Gibson, 2014). Additionally, these findings provide support for the attribution-value model, demonstrating that blame plays a large role in the stigmatization process (Crandall, 2001; Sakalli, 2002; Weiner). However, in predicting prosocial behavior, intellectual's indirect effect was only through attributional complexity. This finding suggests that those high in intellectual humility and attributional complexity may be generally more likely to engage in prosocial behavior, regardless of the viewpoints they hold toward the

individual. Finally, these results suggest that while perspective taking and IMS are important variables in buffering against stigma, they do not play a key role within attributional component of stigma.

The results pertaining to obesity prejudice further the notion that intellectual humility works through attributional complexity to serve as a buffer against discriminatory behavior. Although intellectual humility was not directly associated with an internal motivation to control prejudice towards obese people, its association with attributional complexity provided for an indirect pathway through which intellectual humility worked through this variable. These findings provide partial support to the hypothesis and indicate that in the context of prejudice, intellectual humility, working through attributional complexity, may predispose individuals to control their prejudicial behavior out of a desire to be nonbiased (Vescio & Biernat, 1999; Wittenbrink, Gist, & Hilton, 1997). This pathway may be effective in associating intellectual humility with lower levels of obesity prejudice regardless of how much blame they attribute to an obese individual. Results from this study also show that participant's levels of obesity blame are significantly higher than those directed toward individuals with mental illnesses. This may be due to higher levels of attributional judgments directed at obese individuals, which in turn leads to harsher judgments and greater discrimination (Crandall, 2001). Such differences may explain why the correlations between intellectual humility and obesity prejudice were smaller than when considering mental illnesses.

Investigation into the context of forgiveness provides even further support that intellectual humility may serve as a "master virtue" that can be used to unlock a host of positive behaviors (Lavelock et al., 2017; Seligman, 2002). Although perspective taking provided for a better fitting model and additionally explanatory power for the variables of interest, intellectual

humility did not work through perspective taking to have an indirect effect. Instead, much of intellectual humility's effect on benevolence, avoidance, and revenge was through its negative association with negative attributions. Herein, those high in intellectual humility, out of the awareness they do not know the full picture, may be less prone to make assumptions about a person's character, even when that person hurts them. The only outcome in which an indirect pathway from intellectual humility went through attributional complexity was revenge. This connection is supported by the literature as those high in attributional complexity are less likely to make a make a generalization about a person based on one instance and are less punitive (Gilbert & Malone, 1995; Joireman, 2004; Tam, Au, & Leung, 2008). Interestingly, blame did not provide for an indirect pathway for intellectual humility to predict the outcomes and was not significantly correlated with intellectual humility, attributional complexity, or perspective taking. This finding could be due to less ambiguity concerning who is responsible for the event in this scenario, whereas situations of obesity and mental illness provide more room for speculation. Herein, attributional complexity even had positive direct effects on blame, but negative direct effects on negative attributions. This is consistent with Davis and colleagues (2015), in demonstrating that greater dispositional judgments for a transgression are associated with lower levels of forgiveness. As such, it seems that those high in attributional complexity can recognize when a person is at fault for an action, but still refrain from making negative assumptions about their character.

While intellectual humility is thought to be a trait, this does not mean it is immutable. (Leary, 2018; Yuan et al., 2018; Roberts & Mroczek, 2008). Like other positive psychological characteristics, social learning, cultural emphasis, and educational interventions are likely to show promise in increasing individual levels of intellectual humility (Leary, 2018). In fact,

growth in intellectual humility may serve to unlock other virtuous behaviors, as this trait does not affect *what* people think, but *how* they think, emphasizing less focus on the ego (Lavelock et al., 2017; Seligman, 2002). In fact, Lavelock and colleagues (2017) found that giving students a humility workbook intervention, wherein they read and answered questions about the importance of humility not only increased their levels of humility over time, but also served to increase patience and forgiveness, while decreasing negativity. As such, intellectual humility may work through a host of other traits and virtues to predict a host of positive outcomes, while also buffering against negative ones.

Limitations

A limitation of this research is the use of vignette-based approaches and self-report to assess “positive” personal characteristics such as intellectual humility, attributional complexity, and internal motivation to respond without prejudice along with prosocial outcomes. Although the measure of intellectual humility used for this study was designed to avoid social desirability (Leary et al., 2017), participants may respond on surveys in ways that do not reflect their actual viewpoints or behavioral tendencies. In addition, while the vignettes utilized for this study were designed to be relevant for college students, they may not be generalizable to other situations. Similarly, mental illnesses, targets of prejudice, and transgressions can vary substantially (Angermeyer, Beck, & Matschinger, 2003; González-Torres, 2007; Jorm & Griffiths, 2008). Thus, while the models used for this study yielded significant results, they may not generalize to people with other forms of mental illness, such as depression or schizophrenia or different forms of prejudice, such as sexual or racial. Similarly, transgressions can vary substantially in their severity and some researchers even suggest it is impossible to forgive a transgressor unless one believes the transgressor to be responsible for the behavior (Davis et al., 2015). As such, blame

may play more of a role in forgiveness when the intentionality of the offense is ambiguous. Finally, although in this research I attempted to use examples that often elicit higher levels of stigma, prejudice, and unforgiveness, they may not be full representations of these outcomes.

Sample characteristics may also limit the generalizability of these findings, as older and less educated populations tend to exhibit higher levels of stigma and prejudice (Papadopoulos et al., 2002; Wahl, 2003; Watson et al., 2005). Additionally, the majority of participants in this research were females and gender characteristics are known to affect stigma, prejudice, and forgiveness (Corrigan & Watson, 2007; Krumrei-Mancuso et al., 2020), as can familiarity and acquaintanceship with someone who has a mental illness or is obese (Corrigan et al., 2001; Cotoure & Penn 2003).

While alternative models were tested for each outcome, not every possible alternate pathway was explored. Although these models are based on a strong theoretical framework, it is possible that a different model may be optimal for explaining these outcomes. For instance, there is a high likelihood that perspective taking could improve model fit by mediating the link between intellectual humility and attributional complexity.

Future Directions

Not only does this research support the notion that intellectual humility may carry great potential in buffering against negative outcomes such as stigmatization, prejudice, and unforgiveness, but it also further applies the role of attributions within these contexts. While attributions of blame are especially important in the context of mental illness stigmatization, blame did not provide a significant indirect pathway for intellectual humility in the contexts of obesity prejudice and forgiveness when other variables were added to the model. As such, investigating one's dispositional judgments toward a target may be more effective than assessing

whether they are to blame for their condition. As indicated in the context of forgiveness, those high in attributional complexity could simultaneously blame a transgressor for their behavior but not engage in correspondence bias. Future directions could explore whether this is a more important mediator than simply assessing whether one is to blame for their behavior or not.

Additionally, as a trait that has the potential to “unlock” other virtues, intellectual humility may have associations with other character strengths such as tolerance, openness, and kindness, that could predict such behaviors greater than its association with attributional complexity (Vertilo & Gibson, 2014). Because intellectual humility research is still in its infancy, there are many unexplored virtues that may display strong connections with humility, such as patience (Lavelock, 2017). Additionally, other emotional or cognitive mediators and outcomes could be predicted intellectual humility and attributional complexity aside from the ones tested in this study. For instance, Weiner and colleagues (1988), proposed that feelings of increased anger and pity result from higher attributions of blame. Additionally, intellectual humility may work through empathy to promote prosocial attitudes (Krumrei-Mancuso et al., 2017). Joireman (2004) reports attributional complexity can affect prosocial behavior through increased perspective taking and empathy. Such variables could be included in future studies to expand this mechanism in explaining how these traits could affect behaviors directed at individuals with a mental illness.

It would also be worth examining if this mechanism applies to other contexts not explored in this study. For example, this model could be further investigated as a buffer toward other forms of stigma and discrimination such as those directed at LGBTQ+ individuals, felons, or those who hold different political viewpoints (Clow & Leach, 2015; Crandall, 1994; Herek & McLemore). Additionally, this model could also be expanded to explore more positive

psychological outcomes such as relationship satisfaction, coping, and resilience (Dwiwardani et al., 2014; Ferrel et al., 2015).

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Table 1

Bivariate correlations, means, and standard deviations for variables of interest in mental illness stigmatization.

	IH	AC	Blame	PT	IMS-MI	MIS	Comfort	SC	PB	M	SD
IH	—	—	—	—	—	—	—	—	—	3.96	0.67
AC	.381**	—	—	—	—	—	—	—	—	5.17	0.74
Blame	-.248**	-.374**	—	—	—	—	—	—	—	1.92	1.00
PT	.487**	.540**	-.271**	—	—	—	—	—	—	3.82	0.68
IMS	.187**	.465**	-.475**	.381**	—	—	—	—	—	7.25	1.45
MIS	-.216**	-.250**	.329**	-.140*	-.273**	—	—	—	—	2.98	0.87
Comfort	.259**	.268**	-.173*	.171*	.270**	-.344**	—	—	—	4.60	1.17
SC	.225**	.162*	-.135	.141*	.198**	-.276**	.715**	—	—	3.77	1.20
PB	0.119	.314**	-.142*	.200**	.214**	-.250**	.421**	.403**	—	5.77	1.35

Note: *Ns* range from 201 to 220 due to missingness. ** $p < .01$; * $p < .05$. IH= Intellectual Humility. AC= Attributional Complexity. PT= Perspective Taking. IMS= Internal Motivation to Control Prejudice. MIS= Mental Illness Stigma. SC= Social Closeness. PB= Prosocial Behavior.

Table 2.

Fit statistics for the tested models predicting mental illness stigma.

	χ^2 (df), <i>p</i> -value	RMSEA	CFI	TLI	SRMR
Selected Model	8.060 (5), <i>p</i> = .153	.055	.983	.948	.035
Alternative Model- PT	9.252 (5), <i>p</i> = .094	.031	.984	.934	.029
Alternative Model - IMS	9.010. (5), <i>p</i> = .109	.063	.984	.934	.031

Note. N = 203. df = degrees of freedom. PT= Perspective Taking. IMS= Internal Motivation to Control Prejudice.

Table 3

Total, direct, and indirect effects on intellectual humility on mental illness stigma variables

	Estimate	SE	<i>p</i> -value	95% CI	% explained variance
Total Effects					
IH on AC	.381	.076	<.001	.241, .603	
IH on Blame	-.252	.071	<.001	-.583, -.164	
IH on MIS	-.122	.037	.001	-.202, -.057	
IH on SC	.093	.037	.012	.033, .175	
IH on PB	.125	.038	.001	.065, .209	
Direct Effects					
IH -> AC	.381	.076	<.001	.241, .603	100
IH -> Blame	-.127	.072	.078	-.395, .022	50.4
Specific Indirect Effects					
IH -> AC -> Blame	-.125	.036	.001	-.205, -.059	49.6
IH -> AC-> MIS	-.054	.028	.055	-.113, -.009	44.2
IH -> Blame -> MIS	-.035	.023	.126	-.085, .002	28.7
IH -> AC -> Blame -> MIS	-.034	.012	.006	-.061, -.014	27.9
IH -> AC-> PB	.101	.037	.006	.039, .180	80.8
IH -> AC -> MIS-> PB	.011	.007	.155	.000, .028	8.8
IH -> Blame -> MIS -> PB	.007	.006	.228	-.001, .021	5.6
IH -> AC -> Blame -> MIS -> PB	.007	.004	.071	.001, .016	5.6
IH -> AC-> SC	.054	.033	.108	.000, .124	58.1
IH -> AC -> MIS -> SC	.017	.009	.066	.003, .038	18.3
IH -> Blame -> MIS -> SC	.011	.008	.161	-.001, .029	11.8
IH -> AC -> Blame -> MIS -> SC	.011	.005	.015	.004, .021	11.8

Note. N = 203. IH= intellectual humility. AC = attributional complexity. MIS = mental illness stigma. SC = social closeness. PB = prosocial behavior

Table 4

Bivariate correlations, means, and standard deviations for the variables of interest in obesity prejudice

	IH	AC	Blame	PT	IMS	AOP	AJ	Soc Dist	Equal	M	SD
IH	—	—	—	—	—	—	—	—	—	3.963	0.667
AC	.381**	—	—	—	—	—	—	—	—	5.169	0.736
Blame	-.060	-.168*	—	—	—	—	—	—	—	3.802	1.214
PT	.487**	.540**	-.183**	—	—	—	—	—	—	3.821	0.677
IMS	.169*	.301**	-.490**	.374**	—	—	—	—	—	6.573	1.818
AOP	-.135	-.158*	.403**	-.193**	-.559**	—	—	—	—	2.107	1.056
AJ	-.203**	-.258**	.412**	-.275**	-.573**	.724**	—	—	—	2.112	1.104
Soc Dist	-.199**	-.290**	.435**	-.252**	-.568**	.748**	.775**	—	—	2.310	1.176
Equal	.139*	.313**	-.322**	.185**	.421**	-.345**	-.375**	-.464**	—	5.220	1.477

Note: *N*s range from 201 to 218 due to missingness. ** $p < .01$; * $p < .05$. IH= Intellectual Humility. AC= Attributional Complexity. PT= Perspective Taking. IMS= Internal Motivation to Control Prejudice. AOP= Anti-obese Prejudice. AJ= Adverse Judgment. Soc Dist= Social Distance. Equal = Desire for Equality.

Table 5.

Fit statistics for the tested models predicting obesity prejudice.

	χ^2 (df), <i>p</i> -value	RMSEA	CFI	TLI	SRMR
Selected Model- IMS	1.703(2), <i>p</i> = .427	.000	1.000	1.000	.012
Alternative Model	2.945(2), <i>p</i> = .229	.048	.993	.965	.022
Alternative Model- PT	1.506 (2), <i>p</i> = .471	.000	1.000	1.000	.013

Note. N = 203. PT= Perspective Taking. IMS= Internal Motivation to Control Prejudice.

Table 6.

Total, direct, and indirect effects on intellectual humility on obesity stigma variables

	Estimate	SE	<i>p</i> -value	95% CI	% explained variance
Total Effects					
IH on AC	.381	.076	<.001	.220, .532	
IH on IMS	.186	.069	.007	.041, .319	
IH on Blame	-.064	.071	.364	-.207, .076	
IH on OP	-.135	.050	.006	-.232, -.035	
IH on ER	.140	.042	.001	.061, .227	
Direct Effects					
IH -> AC	.381	.076	<.001	.220, .532	100.0
IH -> IMS	.082	.073	.259	-.064, .255	44.1
IH -> Blame	.040	.070	.563	-.103, .174	27.8
Specific Indirect Effects					
IH -> AC -> IMS	.103	.036	.004	.043, .183	55.3
IH -> IMS -> Blame	-.040	.036	.260	-.109, .033	27.8
IH -> AC -> Blame	-.013	.029	.646	-.076, .041	9.0
IH -> AC -> IMS -> Blame	-.051	.018	.005	-.091, -.021	35.4
IH -> IMS -> OP	-.042	.039	.276	-.123, .031	31.1
IH -> AC -> OP	.029	.025	.238	-.087, .014	21.4
IH -> Blame -> OP	.007	.013	.593	-.023, .031	5.2
IH -> AC -> IMS -> OP	-.053	.019	.005	-.098, -.021	39.3
IH -> IMS -> Blame -> OP	-.007	.007	.319	-.021, .006	5.2
IH -> AC -> Blame -> OP	-.002	.005	.668	-.014, .008	1.5
IH -> AC -> MIS -> Blame -> OP	-.009	.005	.089	-.020, -.001	6.7
IH -> IMS -> ER	.024	.024	.304	-.017, .078	16.6
IH -> AC -> ER	.077	.029	.009	.027, .141	53.1
IH -> Blame -> ER	-.005	.011	.619	-.029, .017	3.3
IH -> AC -> IMS -> ER	.031	.013	.016	.011, .060	21.4
IH -> IMS -> Blame -> ER	.005	.006	.703	-.006, .019	3.3
IH -> AC -> Blame -> ER	.002	.005	.382	-.008, .013	1.3
IH -> AC -> MIS -> Blame -> ER	.007	.005	.176	.000, .019	4.8

Note. N = 203. IH= intellectual humility. AC = attributional complexity. IMS = internal motivation to respond without prejudice. OP = obesity prejudice. ER= equal rights

Table 7.

Bivariate correlations, means, and standard deviations for the variables of interest for forgiveness.

	IH	AC	PT	Blame	Neg Att	Avoidance	Revenge	Benevolence	M	SD
IH	—	—	—	—	—	—	—	—	3.97	0.65
AC	.356**	—	—	—	—	—	—	—	5.15	0.73
PT	.470**	.508**	—	—	—	—	—	—	3.80	0.67
Blame	-0.017	0.071	-0.013	—	—	—	—	—	4.47	0.85
Neg Att	-.267**	-.266**	-.228**	.519**	—	—	—	—	3.73	1.21
Avoidance	-0.112	-0.090	-0.056	.525**	.590**	—	—	—	4.18	1.28
Revenge	-.213**	-.415**	-.360**	.267**	.485**	.430**	—	—	2.52	1.26
Benevolence	.227**	.196**	.229**	-.372**	-.455**	-.596**	-.261**	—	4.10	1.09

Note: *N*s range from 189 to 205 due to missingness. ** $p < .01$; * $p < .05$ IH= Intellectual Humility. AC= Attributional Complexity.

PT= Perspective Taking. IMS= Internal Motivation to Control Prejudice. Neg Att = Negative Attributions

Table 8. Fit statistics for the tested models predicting forgiveness.

	χ^2 (df), <i>p</i> -value	RMSEA	CFI	TLI	SRMR
Selected Model- PT	2.384 (3), <i>p</i> = .497	.000	1.000	1.000	.012
Alternative Model	4.525(3), <i>p</i> = .210)	.052	.996	.973	.017

Note. N = 191. PT = perspective taking.

Table 9.

Total, direct, and indirect effects on intellectual humility on forgiveness variables

	Estimate	SE	<i>p</i> -value	95% CI	% Variance Explained
Total Effects					
IH on AC	.355	.080	<.001	.198, .504	
IH on PT	.473	.064	<.001	.349, .590	
IH on Neg Att	-.267	.070	<.001	-.397, -.120	
IH on Blame	-.016	.071	.823	-.153, .125	
IH on Revenge	-.254	.050	<.001	-.350, -.161	
IH on Benevolence	.160	.046	.001	.073, .254	
IH on Avoidance	-.109	.055	.048	-.212, -.002	
Direct Effects					
IH -> AC	.355	.080	<.001	.198, .504	100
IH -> PT	.333	.066	<.001	.203, .464	28.1
IH -> Neg Att	-.181	.080	.024	-.334, -.024	67.8
IH -> Blame	.079	.066	.230	-.051, .197	24.2
Specific Indirect Effects					
IH -> AC -> PT	.139	.038	<.001	.069, .219	29.3
IH -> AC-> Neg Att	-.063	.035	.070	-.138, -.040	23.6
IH -> PT -> Neg Att	-.017	.029	.562	-.075, .040	6.3
IH -> AC-> PT -> Neg Att	-.007	.012	.568	-.033, .016	2.6
IH -> AC -> Blame	.076	.032	.019	.020, .146	23.3
IH -> PT -> Blame	-.009	.023	.699	-.052, .045	2.8
IH -> Neg Att -> Blame	-.107	.047	.022	-.197, -.016	32.8
IH -> AC -> PT -> Blame	-.004	.010	.705	-.025, .014	1.2
IH -> AC -> Neg Att -> Blame	-.037	.022	.087	-.085, -.002	11.3
IH -> PT -> Neg Att -> Blame	-.010	.017	.567	-.046, .025	3.1
IH -> AC -> PT to Neg Att -> Blame	-.004	.007	.575	-.020, -.010	1.2
IH -> AC -> Revenge	-.090	.034	.009	-.166, -.035	33.6
IH -> Blame -> Revenge	.007	.010	.694	-.007, .032	2.6
IH -> PT-> Revenge	-.049	.025	.053	-.101, -.003	18.3
IH -> Neg Att -> Revenge	-.063	.032	.048	-.135, -.006	23.5
IH -> AC -> Blame -> Revenge	.007	.007	.353	-.005, .025	2.6

IH -> PT -> Blame -> Revenge	-.001	.003	.767	-.007, .004	0.4
IH -> Neg Att -> Blame -> Revenge	-.009	.010	.347	-.032, .007	3.4
IH -> AC -> PT -> Revenge	-.021	.012	.077	-.047, -.004	7.8
IH -> AC -> Neg Att -> Revenge	-.022	.012	.072	-.047, -.001	8.2
IH -> PT -> Neg Att -> Revenge	-.006	.010	.557	-.026, .014	2.2
IH -> AC -> PT -> Blame -> Revenge	.000	.001	.774	-.003, .002	0.0
IH -> AC -> Neg Att -> Blame -> Revenge	-.003	.004	.407	-.013, .002	1.1
IH -> PT -> Neg Att -> Blame -> Revenge	-.001	.002	.699	-.007, .003	0.4
IH -> AC -> PT -> Neg Att -> Revenge	-.002	.004	.563	-.011, .006	.07
IH -> AC -> PT -> Neg Att -> Blame -> Revenge	.000	.001	.700	-.004, .001	0.0
IH -> AC -> Benevolence	.029	.028	.296	-.017, .091	12.3
IH -> Blame -> Benevolence	-.019	.017	.267	-.055, .013	-8.1
IH -> PT-> Benevolence	.037	.031	.234	-.015, .108	15.7
IH -> Neg Att -> Benevolence	.050	.025	.049	.006, .107	21.3
IH -> AC -> Blame -> Benevolence	-.019	.011	.081	-.045, -.003	8.1
IH -> PT -> Blame -> Benevolence	.002	.006	.720	-.010, .014	0.9
IH -> Neg Att -> Blame -> Benevolence	.026	.015	.077	.003, .063	11.1
IH -> AC -> PT -> Benevolence	.015	.012	.187	-.007, .038	6.4
IH -> AC -> Neg Att -> Benevolence	.018	.010	.085	.000, .040	7.7
IH -> PT -> Neg Att -> Benevolence	.005	.008	.579	-.012, .022	2.1
IH -> AC -> PT -> Blame -> Benevolence	.001	.003	.743	-.004, .007	0.4
IH -> AC -> Neg Att -> Blame -> Benevolence	.009	.006	.140	.000, .024	3.8
IH -> PT -> Neg Att -> Blame -> Benevolence	.002	.004	.584	-.006, .012	0.9
IH -> AC -> PT -> Neg Att -> Benevolence	.002	.004	.583	-.005, .010	0.9
IH -> AC -> PT -> Neg Att -> Blame -> Benevolence	.001	.002	.601	-.003, .005	0.4
IH -> AC -> Avoidance	-.003	.026	.916	-.053, .050	1.2
IH -> Blame -> Avoidance	.020	.019	.282	-.015, .059	8.2
IH -> PT-> Avoidance	.019	.022	.385	-.022, .064	7.8
IH -> Neg Att -> Avoidance	-.087	.043	.044	-.178, -.010	35.8
IH -> AC -> Blame -> Avoidance	.020	.012	.089	.003, .047	8.2
IH -> PT -> Blame -> Avoidance	-.002	.006	.718	-.015, .011	0.8
IH -> Neg Att -> Blame -> Avoidance	-.028	.015	.068	-.061, -.003	11.5
IH -> AC -> PT -> Avoidance	.008	.010	.411	-.009, .029	3.3
IH -> AC -> Neg Att -> Avoidance	-.030	.017	.068	-.069, -.001	12.3
IH -> PT -> Neg Att -> Avoidance	-.008	.014	.569	-.036, .020	3.3
IH -> AC -> PT -> Blame -> Avoidance	-.001	.003	.734	-.007, .004	0.4
IH -> AC -> Neg Att -> Blame -> Avoidance	.010	.007	.167	-.027, .000	4.1
IH -> PT -> Neg Att -> Blame -> Avoidance	-.003	.005	.589	-.013, .007	1.2
IH -> AC -> PT -> Neg Att -> Avoidance	-.003	.006	.575	-.016, .008	1.2
IH -> AC -> PT -> Neg Att -> Blame -> Avoidance	-.001	.002	.601	-.005, .003	0.4

Note. N = 191. IH= intellectual humility. AC = attributional complexity. PT= perspective taking. Neg Att = negative attributions.

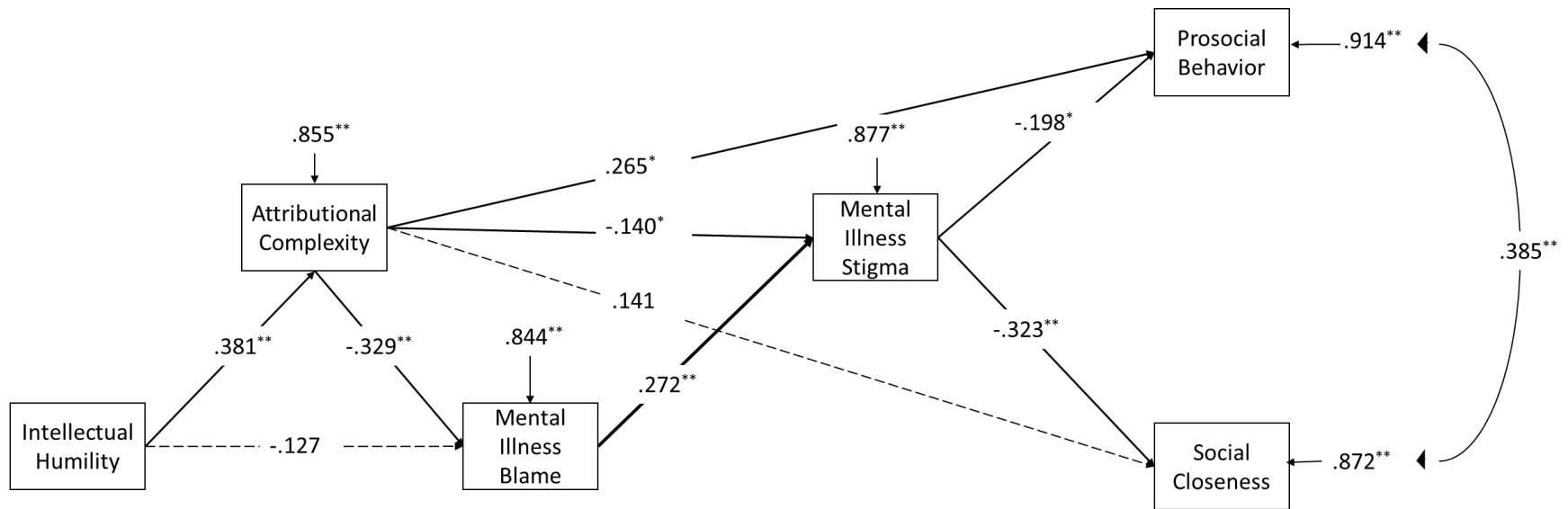


Figure 1. *Selected Mental Illness Stigmatization Model*: Path model of intellectual humility predicting behaviors toward an individual with AUD, mediated by attributional complexity and mental illness blame. Path coefficients are standardized regression coefficients.

Note: $N=203$. ** $p < .01$; * $p < .05$. Dashed lines represent nonsignificant pathways.

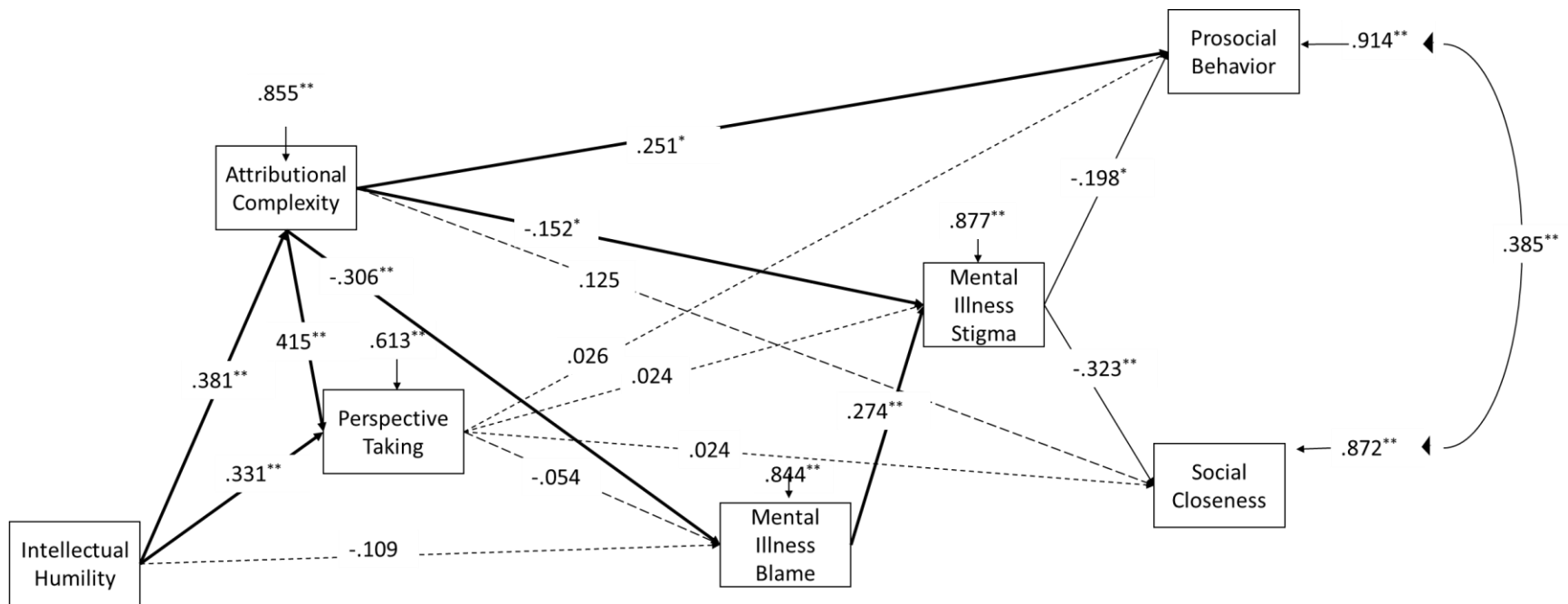


Figure 2. *Alternative Mental Illness Stigmatization Model using Perspective Taking: Path model of intellectual humility predicting behaviors toward an individual with AUD, mediated by attributional complexity, perspective taking, and mental illness blame. Path coefficients are standardized regression coefficients.*

Note: $N=203$. ** $p < .01$; * $p < .05$. Dashed lines represent nonsignificant pathways.

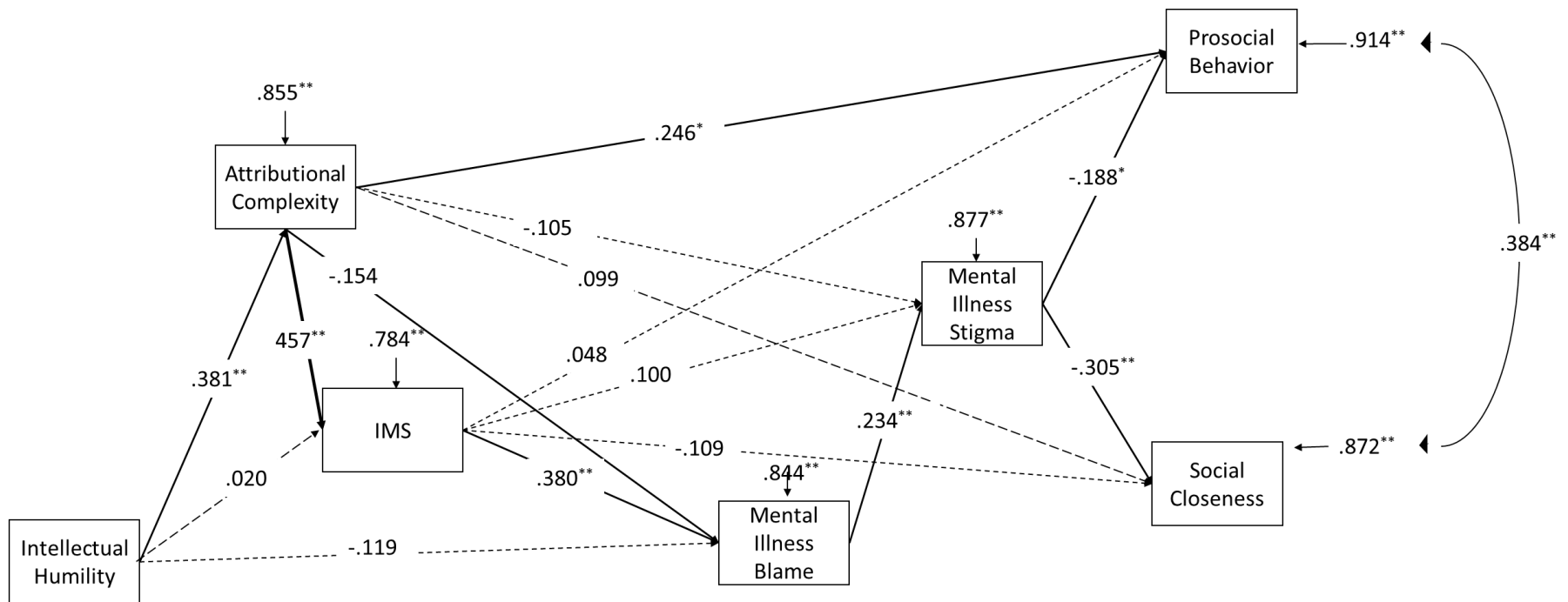


Figure 3. *Alternative Mental Illness Stigmatization Model using IMS: Path model of intellectual humility predicting behaviors toward an individual with AUD, mediated by attributional complexity, internal motivation to respond without prejudice, and mental illness blame. Path coefficients are standardized regression coefficients.*

Note: $N=203$. ** $p < .01$; * $p < .05$. Dashed lines represent nonsignificant pathways. IMS = Internal Motivation to Control Prejudice.

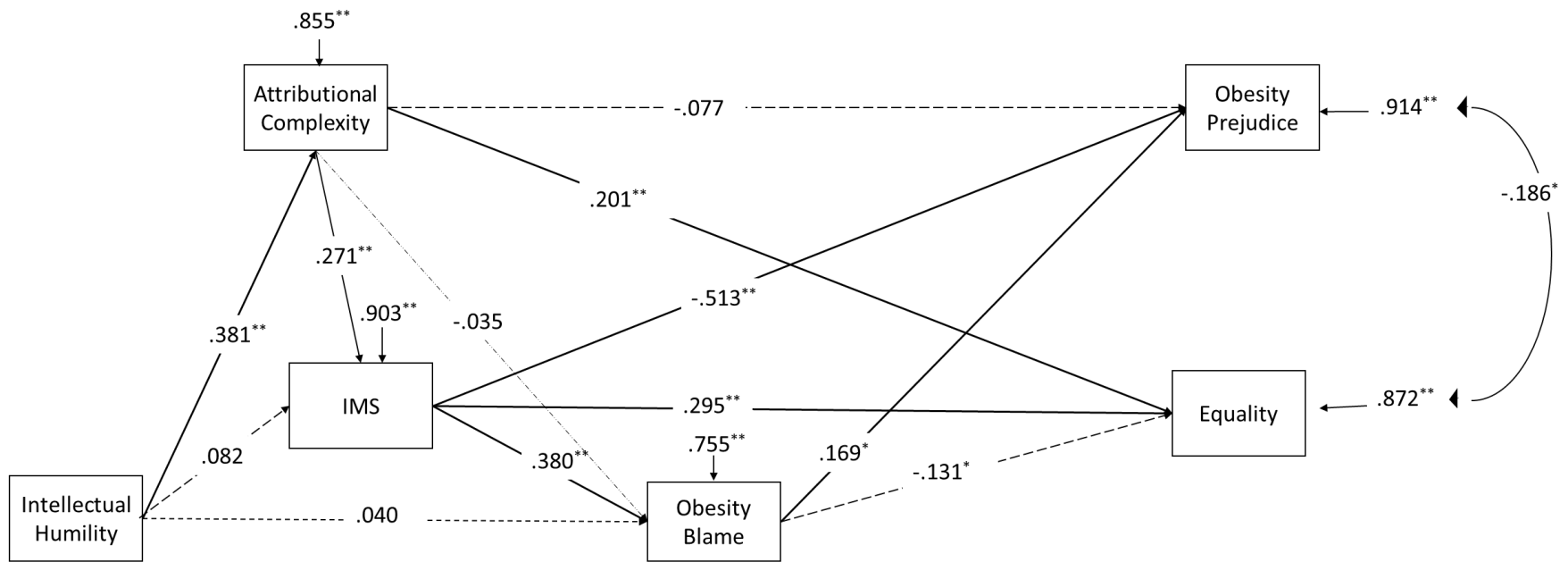


Figure 4. *Selected Obesity Prejudice Model using IMS: Path model of intellectual humility predicting behaviors toward an obese individual mediated by attributional complexity, internal motivation to control prejudice and obesity blame. Path coefficients are standardized regression coefficients.*

Note: $N=203$. ** $p < .01$; * $p < .05$. Dashed lines represent nonsignificant pathways. IMS = Internal Motivation to Control Prejudice

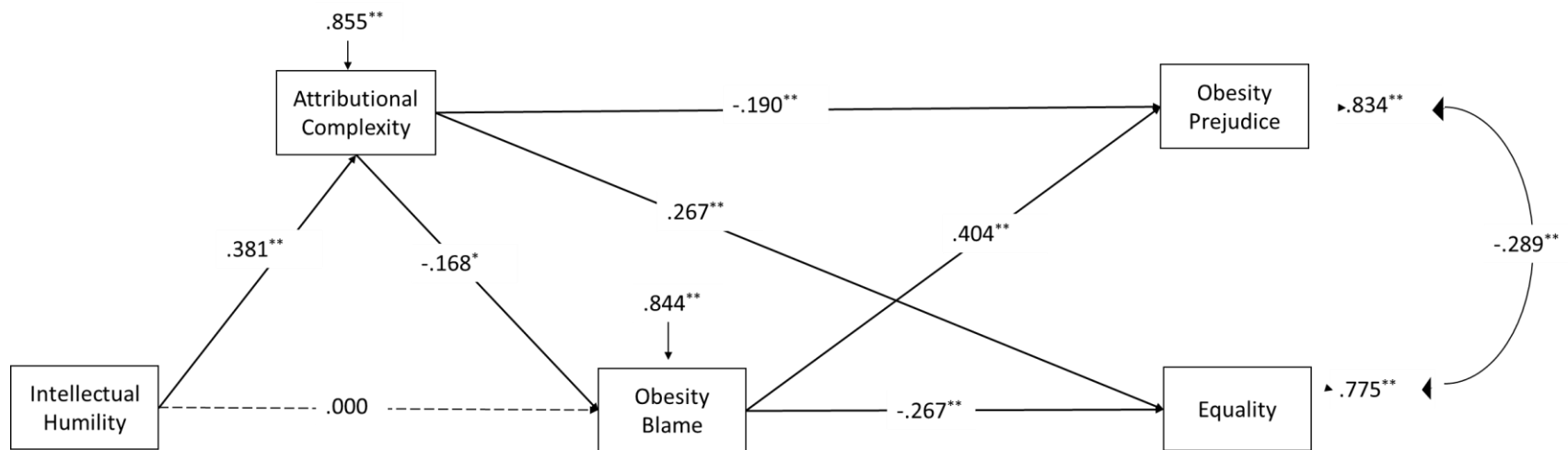


Figure 5. *Alternative Obesity Prejudice Model: Path model of intellectual humility predicting behaviors toward an obese individual mediated by attributional complexity and obesity blame. Path coefficients are standardized regression coefficients.*

Note: $N=203$. $** p < .01$; $* p < .05$. Dashed lines represent nonsignificant pathways.

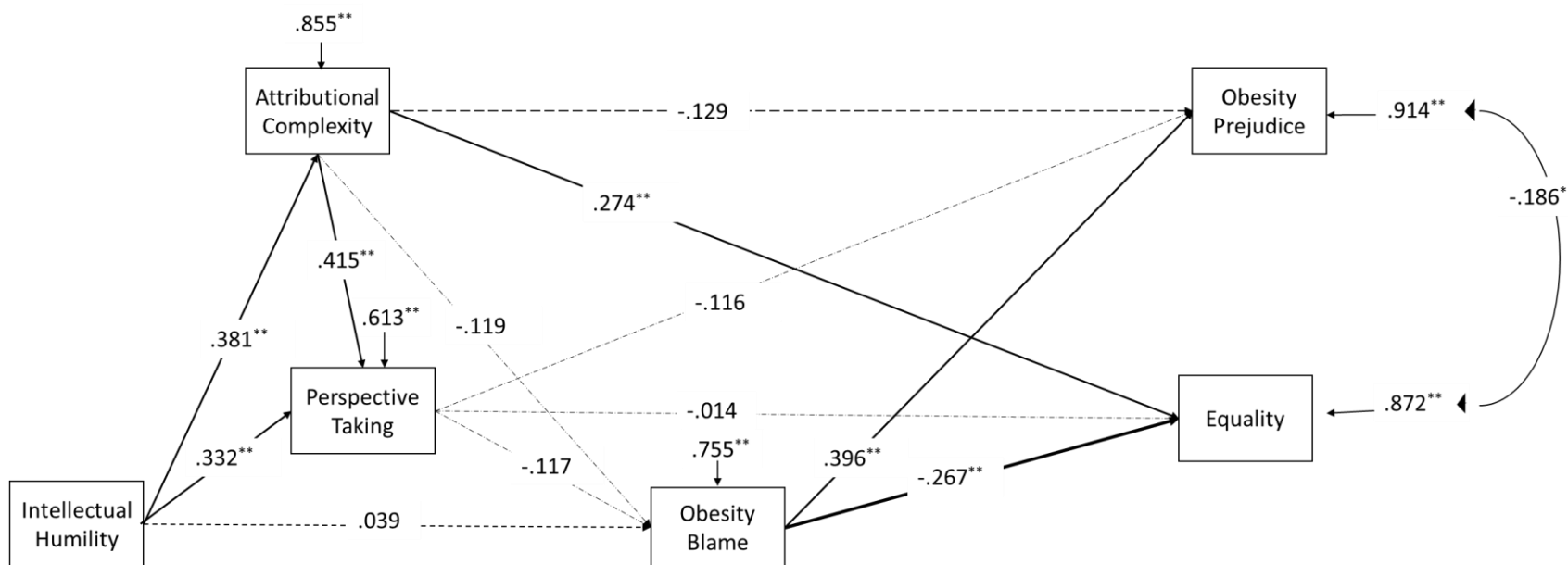


Figure 6. *Alternative Obesity Prejudice Model using Perspective Taking: Path model of intellectual humility predicting behaviors toward an obese individual mediated by attributional complexity, perspective taking, and obesity blame. Path coefficients are standardized regression coefficients.*

Note: $N=203$. $** p < .01$; $* p < .05$. Dashed lines represent nonsignificant pathways.

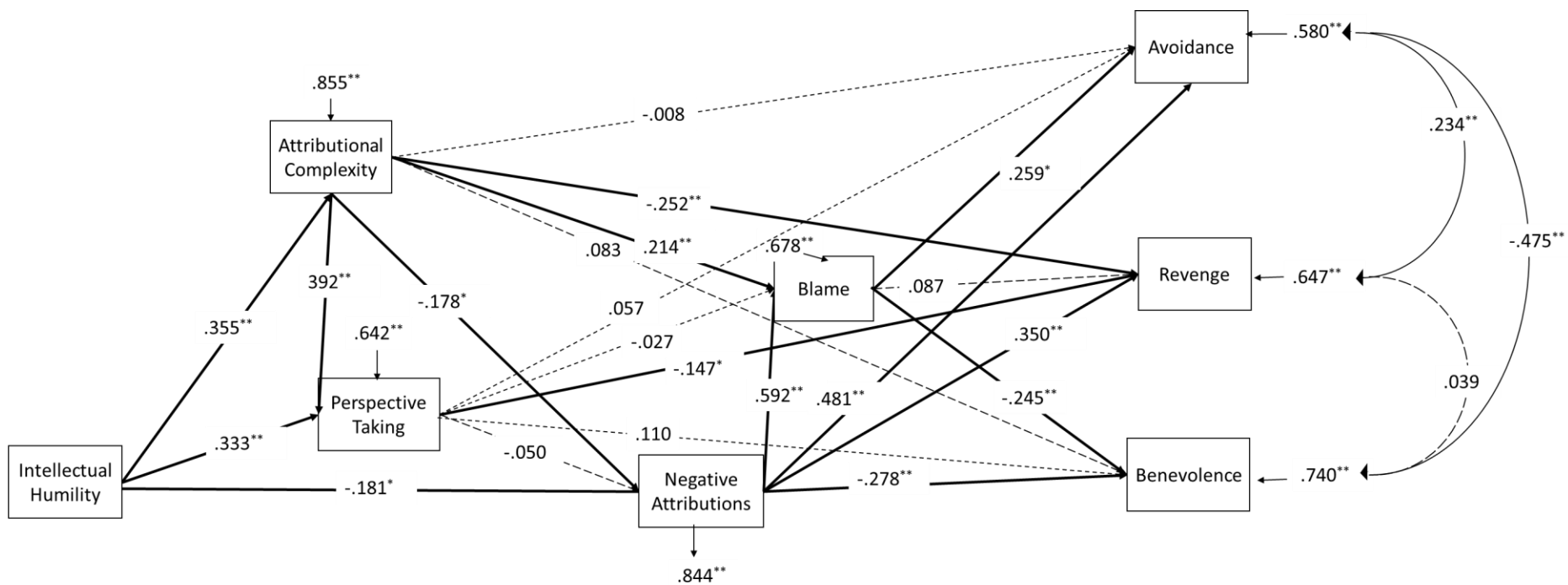


Figure 7. *Selected Forgiveness Model using Perspective Taking: Path model of intellectual humility predicting forgiveness mediated by attributional complexity, negative attributions, and blame. Path coefficients are standardized regression coefficients.*

Note: $N = 191$. ** $p < .01$; * $p < .05$. Dashed lines represent nonsignificant pathways. IMS = Internal Motivation to Control Prejudice

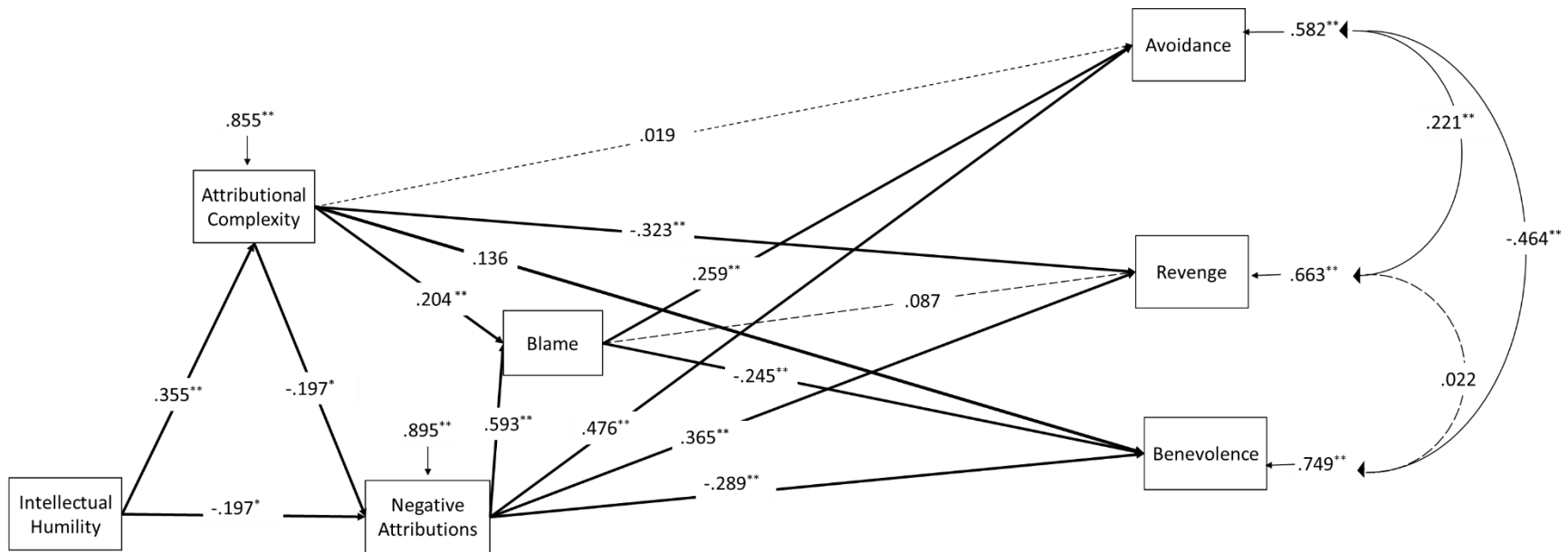


Figure 8. *Alternative Forgiveness Model: Path model of intellectual humility predicting forgiveness mediated by attributional complexity, negative attributions, and blame. Path coefficients are standardized regression coefficients.*

Note: $N = 191$. ** $p < .01$; * $p < .05$. Dashed lines represent nonsignificant pathways.

Appendix A

General Intellectual Humility Scale

1 2 3 4 5

(not at all like me)

(very much like me)

1. I question my own opinions, positions, and viewpoints because they could be wrong.
2. I reconsider my opinions when presented with new evidence.
3. I recognize the value in opinions that are different from my own.
4. I accept that my beliefs and attitudes may be wrong.
5. In the face of conflicting evidence, I am open to changing my opinions.
6. I like finding out new information that differs from what I already think is true.

Appendix B

Attributional Complexity Scale

1 2 3 4 5 6 7

(strongly disagree)

(strongly agree)

1. I don't usually bother to analyze and explain people's behavior.
2. Once I have figured out a single cause for a person's behavior, I don't usually go any further.
3. I believe it is important to analyze and understand our own thinking processes.
4. I think a lot about the influence that I have on other people's behavior.
5. I have found that the relationships between a person's attitudes, beliefs, and character traits are usually simple and straightforward.
6. If I see people behaving in a really strange or unusual manner, I usually put it down to the fact that they are strange or unusual people and don't bother to explain it any further.
7. I have thought a lot about the family background and personal history of people who are close to me, in order to understand why they are the sort of people they are.
8. I don't enjoy getting into discussions where the causes for people's behavior are being talked over.
9. I have found that the causes for people's behavior are usually complex rather than simple.
10. I am very interested in understanding how my own thinking works when I make judgments about people or attach causes to their behavior.
11. I think very little about the different ways that people influence each other.
12. To understand a person's personality/behavior I have found it is important to know how that person's attitudes, beliefs, and character traits fit together.
13. When I try to explain other people's behavior I concentrate on the person and don't worry too much about all the existing external factors that might be affecting them.
14. I have often found that the basic cause for a person's behavior is located far back in time.
15. I really enjoy analyzing the reasons or causes for people's behavior.
16. I usually find that complicated explanations for people's behavior are confusing rather than helpful.
17. I give little thought to how my thinking works in the process of understanding or explaining people's behavior.
18. I think very little about the influence that other people have on my behavior.
19. I have thought a lot about the way that different parts of my personality influence other parts (e.g., beliefs affecting attitudes or attitudes affecting character traits).
20. I think a lot about the influence that society has on other people.
21. When I analyze a person's behavior, I often find the causes form a chain that goes back in time, sometimes for years.
22. I am not really curious about human behavior.
23. I prefer simple rather than complex explanations for people's behavior.

24. When the reasons I give for my own behavior are different from someone else's, this often makes me think about the thinking processes that lead to my explanations.
25. I believe that to understand a person you need to understand the people who that person has close contact with.
26. I tend to take people's behavior at face value and not worry about the inner causes for their behavior (e.g., attitudes, beliefs, etc)
27. I think a lot about the influence that society has on my behavior and personality.
28. I have thought very little about my own family background and personal history in order to understand why I am the sort of person I am.

Appendix C

Perspective Taking

1	2	3	4	5
DOES NOT				DESCRIBES ME
DESCRIBE ME VERY WELL				VERY WELL

1. I sometimes find it difficult to see things from the "other guy's" point of view.
2. I try to look at everybody's side of a disagreement before I make a decision.
3. I sometimes try to understand my friends better by imagining how things look from their perspective.
4. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (-)
5. I believe that there are two sides to every question and try to look at them both.
6. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
7. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Appendix D

Internal Motivation to Respond without Prejudice- Mental Illness

1

2

3

4

5

6

7

8

9

(Very False)

(Very True)

1. I am personally motivated by my beliefs to be non-prejudiced toward people with mental illnesses.
2. I attempt to appear non-prejudiced toward people with a mental illness in order to avoid disapproval from others.
3. I try to act non-prejudiced toward people with mental illnesses because of pressure from others.
4. I attempt to act in non-prejudiced ways toward people with mental illnesses because it is personally important to me.
5. According to my personal values, using stereotypes about people with mental illnesses is OK.

Appendix E
Mental Illness Blame

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate the extent to which you agree with the following statement about mental illness

1. A person with a mental illness is to blame for having mental illness.
2. It is a person's own fault that they are mentally ill.
3. Those with mental illnesses do not deserve their mental illness.
4. Those with mental illnesses should not feel guilty for being ill.

Appendix F
Mental Illness Stigma

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree
<ol style="list-style-type: none"> 1. A mentally ill person is more likely to harm others than a normal person. 2. Mental disorder would require a much longer period of time to be cured than would other general diseases. 3. It may be a good idea to stay away from people who have psychological disorder because their behavior is dangerous. 4. The term “Psychological disorder” makes me feel embarrassed. 5. A person with psychological disorder should have a job with minor responsibilities. 6. Mentally-ill people are more likely to be criminals. 7. Psychological disorder is recurrent. 8. I am afraid of what my boss, friends, and others would think if I were diagnosed as having a psychological disorder. 9. Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life. 10. People who have once received psychological treatment are likely to need further treatment in the future. 11. It might be difficult for mentally-ill people to follow social rules such as being punctual or keeping promises. 12. I would be embarrassed if people knew that I dated a person who once received psychological treatment. 13. I am afraid of people who are suffering from psychological disorder because they may harm me. 14. A person with psychological disorder is less likely to function well as a parent. 15. I would be embarrassed if a person in my family became mentally ill. 16. I do not believe that psychological disorder is ever completely cured. 17. Mentally-ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities. 18. Most people would not knowingly be friends with a mentally-ill person. 19. The behavior of people who have psychological disorders is unpredictable. 20. Psychological disorder is unlikely to be cured regardless of treatment. 21. I would not trust the work of a mentally-ill person assigned to my work team. 						

Appendix G

Alcoholism Vignette

(Susan used for participants who indicate their sex as female or other)

Bill has been your roommate for two semesters at OU; while you are friends, he is not part of your group of friends with whom you hang out all the time. That being said, Bill is a really nice guy, generally outgoing, and pretty high-energy by most standards. However, you have noticed over the past couple of months, Bill has been progressively acting a little unlike himself. For starters, Bill has been staying out late at night. When he wakes up, he often has no recollection of who he was with or where he was the night before. Many mornings he often has to have a first drink of alcohol in order to help with his hangovers. It is pretty clear from the bags under his eyes that he hasn't been sleeping much. He often seems distant and has slurred speech for much of the day. When you ask him what's been bothering him, he gets defensive and says that nothing has changed. Lately, he's been having trouble in school and is concerned about his ability to pass his classes. You've just completed a course in Abnormal Psychology which has taught you the symptoms of different mental illnesses, and it is clear to you that Bill is showing symptoms of alcohol use disorder.

Appendix H

Alcoholism Vignette Outcomes

For the following questions use the scale below

1	2	3	4	5	6	7
Not At All						Very Much

Social Distancing

1. How comfortable are you with Bill being your current roommate?
2. How comfortable would you be if Bill got a job at the same place where you are employed?
3. To what extent would you want to continue living with Bill as a roommate?
4. If next semester you were given the opportunity to move into a dorm with someone else,
5. How willing would you be to continue being friends with Bill?
6. How comfortable would you be if Bill married into your family?
7. How comfortable would you be if Bill was part of the group of friends you usually hang out with?
8. How comfortable would you be if Bill was assigned to be your partner for a group project in class?

Prosocial Behavior

9. To what extent would you be willing to offer Bill personal assistance?
· 1(Not at all willing)-7 (extremely willing)
10. To what extent would you be willing to drive Bill to counseling (once a week)?
· 1(Not at all willing)-7 (extremely willing)

Comfortability

1. How embarrassed are you of Bill?
2. To what extent would you want to be associated with Bill?
3. Say you were going out to a party; what is the likelihood that you would invite Bill?
4. How comfortable would you be around Bill?
5. How comfortable would you be being seen out in public with Bill?
6. To what extent would you be embarrassed if you were out in public with Bill, and your group of friends saw you with him?
7. Imagine that you are part of a social club (i.e. Greek life, chess club, etc.). To what extent would you want to recruit Bill to be a part of your social club.

Appendix I

Internal Motivation to Respond without Prejudice- Obesity

1

2

3

4

5

6

7

8

9

(Very False)

(Very True)

1. I am personally motivated by my beliefs to be non-prejudiced toward obese people.
2. I attempt to appear non-prejudiced toward obese people in order to avoid disapproval from others.
3. I try to act non-prejudiced toward obese people because of pressure from others.
4. I attempt to act in non-prejudiced ways toward obese people because it is personally important to me.
5. According to my personal values, using stereotypes about obese people is OK.

Appendix J
Mental Illness Blame

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. An obese person is to blame for their obesity.
2. It is a person's own fault that they are obese.
3. Obese people do not deserve their obesity.
4. Obese people should not feel guilty for being obese.

Appendix K

Prejudice Against Obese People

- | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|-------------------|
| Strongly
Disagree | | | | | | Strongly
Agree |
| 1. I really don't like obese people much | | | | | | |
| 2. I don't have many friends that are obese | | | | | | |
| 3. I tend to think that people who are obese are a little untrustworthy. | | | | | | |
| 4. Although some obese people are surely smart, in general, I think they tend not to be quite as bright as normal weight people. | | | | | | |
| 5. I have a hard time taking obese people seriously | | | | | | |
| 6. Obese people make me somewhat uncomfortable. | | | | | | |
| 7. If I were an employer looking to hire, I might avoid hiring an obese person. | | | | | | |

Appendix L

Bias against Obese People

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. Special effort should be taken to make sure that obese people have the same rights and privileges as other people.
2. I would be comfortable having an obese person in my group of friends.
3. I find obese people attractive.
4. Obese people make good romantic partners.
5. obese people have bad hygiene.*
6. I find obese people to be sexy.
7. Obese people tend towards bad behavior.*
8. I would not want to have an obese person as a roommate.*
9. Obese people are a turn-off.*
10. I find obese people pleasant to look at.
11. Special effort should be taken to make sure that obese people have the same salaries as other people.
12. Sometimes I think that obese people are dishonest.*
13. I try to understand the perspective of obese people.
14. Special effort should be taken to make sure that obese people have the same educational opportunities as other people.
15. In general, obese people don't think about the needs of other people.*
16. Obese people are sloppy.*
17. I like obese people.
18. Special effort should be taken to make sure that obese people have the same housing opportunities as other people.
19. I don't enjoy having a conversation with an obese person.*
20. I would like having an obese person at my place of worship or community center.

Appendix M
Forgiveness Vignette

You just started a new job and it turns out that a classmate from high school, named Sam, works there, too. You think this is great; now you don't feel like such a stranger. Even though Sam wasn't part of your crowd, there's at least a face you recognize. You two hit it off right away and talk about old times. A few weeks later, you are having lunch in the cafeteria and you overhear several of your coworkers, who do not realize you are nearby, talking about you and laughing; one even sounds snide and hostile toward you. You discover that Sam has told them about something you did back in school that you are deeply ashamed of and did not want anyone to know about.

Appendix N
Negative Attributions of Sam

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. Sam is a bad person
2. Sam is not dependable
3. Sam is unkind
4. Sam is not a loving person
5. Sam is not a good person

Appendix O

Blame for Sam

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. Sam's behavior was due to something about them
2. The reason behind Sam's behavior is unlikely to change.
3. Sam's actions were taken on purpose rather than unintentionally
4. Sam deserves to be blamed for their behavior.
5. Sam's behavior was motivated by selfish rather than unselfish concerns

Appendix P

Transgression Related Interpersonal Motivations

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree
1. I'll make Sam pay						
2. I am trying to keep as much distance between us as possible						
3. Even though Sam's actions hurt me, I have goodwill for him/her						
4. I wish that something bad would happen to Sam						
5. I am living as if Sam doesn't exist, isn't around						
6. I want us to bury the hatchet and move forward with our relationship.						
7. I don't trust Sam.						
8. Despite what Sam did, I want us to have a positive relationship again						
9. I want Sam to get what he/ she deserves.						
10. I am finding it difficult to act warmly toward Sam.						
11. I am avoiding him/her.						
12. Although Sam hurt me, I am putting the hurts aside so we can resume our relationship.						
13. I'm going to get even.						
14. I have given up my hurt and resentment.						
15. I cut off the relationship with Sam						
16. I have released my anger so I can work on restoring our relationship to health						
17. I want to see Sam hurt and miserable.						
18. I withdraw from Sam						