DEHUMANIZATION BELIEFS AND INDISCRIMINATE AGGRESSION

By Adrienne F. McFaul

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ABSTRACT OF THE DISSERTATION

Dehumanization Beliefs and Indiscriminate Aggression

By: Adrienne F. McFaul

Dissertation Director: Professor Paul Boxer

Indiscriminate aggression includes diverse instances of aggression or violence in which victims are haphazardly targeted, ranging in severity from lethal violence to relatively low levels of aggression. High-profile perpetrators of indiscriminately aggressive acts have endorsed beliefs dehumanizing others, and it is likely that dehumanization beliefs may be associated with indiscriminate aggression at all levels of severity. It is posited that this aggression-supporting belief is uniquely associated with indiscriminate aggression. The current investigation encompasses 1) the development and validation of an original measure of dehumanization beliefs, 2) an examination of the nature of dehumanization beliefs, 3) the development and validation of a measure of indiscriminately aggressive behavior and 4) an examination of the link between dehumanization beliefs and indiscriminate aggression. Preliminary study 1 examined the role of emotional state in the perception of violent images using a mood induction paradigm. Results of preliminary study 1 indicate that angry individuals perceive videos of violent acts as more exciting and entertaining as compared to individuals who are not angry. Preliminary study 2 examined the correlates of identification with an indiscriminate aggressor using a questionnaire. Results of preliminary study 2 indicate that identification with the Virginia Tech shooter was associated with aggressive behaviors and beliefs. Preliminary study 3 examined the reliability and validity of a new

measure of dehumanization beliefs, the Dehumanization Beliefs Scale (DBS). Results of preliminary study 3 indicate that the DBS is a reliable and valid measure of dehumanization beliefs. Dissertation study 1 examined the role of emotional state in the relation between dehumanization beliefs and rates of indiscriminately aggressive behavior using a mood induction paradigm. Results of dissertation study 1 indicate that both anger and anxiety influence the relationship between dehumanization beliefs and indiscriminately aggressive behavior. Dissertation study 2 examined the relation between dehumanization beliefs and rates of indiscriminately aggressive behavior. Results of dissertation study 2 indicate that the degree to which an individual endorses dehumanization beliefs is related to rates of indiscriminately aggressive behavior. This work has implications for the prediction and prevention of indiscriminate aggression and violence.

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Dehumanization beliefs and indiscriminate aggression

The major goal of the dissertation research described herein is to examine the extent to which beliefs that dehumanize others underlie support for and engagement in acts of indiscriminate aggression. This research represents the first systematic, empirical line of inquiry within the behavioral and social sciences to investigate both dehumanization beliefs and indiscriminate aggression. This investigation represents a significant first step toward the understanding, prediction and prevention of the violent victimization of seemingly randomly chosen targets. This research is grounded in the General Aggression Model (Anderson & Bushman, 2002; Anderson & Carnagey, 2004) and builds on a broad base of past theorizing on the cognitive correlates of aggression (e.g., Bandura, 1991; Huesmann, 1998). The key products of this investigation will be a survey measure of dehumanization beliefs and a behavioral measure of indiscriminate aggression that will be used to answer substantive, theory-driven questions regarding the nature of aggressive behavior, with important applications to research and practice in areas of public safety and violence prevention.

Project Goals and Objectives

This dissertation is guided by four objectives derived from established views on construct and theory validation and testing, especially the experimental modeling of "real world" problems (Anderson, Lindsay, & Bushman, 1999; Cronbach & Meehl, 1955). The objectives are as follows: 1) to develop and validate an original measure of dehumanization beliefs, 2) to examine the personal and contextual correlates of dehumanization beliefs, 3) to develop and validate a measure of indiscriminately

aggressive behavior, and 4) to examine the relation between dehumanization beliefs and indiscriminately aggressive behavior.

Dehumanization

Any behavior intended to deny full human status to another individual falls under the definition of dehumanization**.** *Dehumanization beliefs* are the tendency to think of all or most other people as less than fully human. Thinking of other people as less than fully human may take various forms, and may include an objectification of others or a denial of essential human characteristics attributed to others. Examples of a dehumanized view of others are available in history. For instance, during the Holocaust, the Nazis promoted the idea that Jews were less than fully human (Bauer, 2001). Setting the current treatment of dehumanization apart from past work, the present study will examine this broad tendency to dehumanize as well as the stability and persistence of this tendency. Additionally, the present study will examine the association between a dehumanized view of others and concomitant behaviors.

Theorists have posited that a dehumanized view of others is related to changes in cognitive, affective, and behavioral processes. Within the domain of cognitive processes, theorists have proposed that perceiving someone as dehumanized influences moral reasoning processes (Bar-Tal, 1990; Opotow, 1990; Staub,1989). Diener (1977) proposed that perceiving someone as dehumanized reduces the internal cognitive inhibition of aggression. Within the domain of emotional processes, theorists have proposed that perceiving someone as dehumanized reduces empathy (Bandura, 1992; Castano & Giner-Sorolla, 2006; Cehajic, Brown & Gonzales, 2009; Halpern & Weinstein, 2004; Lifton, 1986). Theorists have proposed that functions of

dehumanization may include the justification of violence and the reduction of negative feelings about violence (Bar-Tal, 2000; Baumeister, Stillwell, & Heatherton ,1994). Dehumanization is theorized to be an important component of processes underlying aggressive behaviors, particularly extreme violence (Bernard, Ottenberg, & Redl, 1965; Kelman, 1973).

Past psychological research on dehumanization can be categorized as viewing dehumanization in one of three highly specific ways. First, dehumanization has been conceptualized as occurring toward out-groups. Dehumanization was conceptualized by Allport (1954) as an outcome of any extreme prejudice. Dehumanization has since been conceptualized as occurring in the context of specifically interracial and interethnic bias and prejudice. For example, Vaes and colleagues (2003) observed a greater tendency to display discriminatory behavior toward dehumanized members of another ethnic group versus one's own.

Harris and Fiske (2006) examined the tendency to perceive and think about members of extreme out-groups such as drug addicts or the homeless as non-humans using fMRI to observe activation of brain areas typically associated with social cognition. In their study, brain activity was recorded as participants viewed pictures of people from social groups of varying social status. Results indicated that the medial prefrontal cortex (a brain area associated with social cognition; Mitchell et al., 2006) was not active while participants viewed images of extreme out-groups but was active while participants viewed images of other social groups. These results suggest that dehumanization occurs early in social perception processes and may be relatively automatic. Supporting the idea that dehumanized perception occurs automatically, Viki and colleagues (2006) found

evidence for implicit associations between dehumanization and out-groups. Using the Implicit Association Test, these researchers found that participants were able to respond more quickly to pairs of exemplar words representing the tendency to dehumanize out-groups (i.e., associations between in-group and human categories and associations between out-group and animal categories) as compared to pairs of words representing the tendency to dehumanize in-groups (i.e., associations between in-group and animal categories and associations between out-group and human categories).

Secondly, dehumanization has been discussed in the context of studying general differences between perceptions of humans and non-humans. For example, researchers have explored perceptions of humans versus forms of artificial intelligence such as robots (Haslam et al., 2008; Loughnan & Haslam, 2007).

Haslam and colleagues (2008) examined patterns of characteristics that are typically assigned to humans versus to robots. Participants were given a list of psychological characteristics typical of human beings and were asked to rate robots, animals, and supernatural beings on the degree to which they possessed each characteristic. A ten point response scale ranging from "much less than human" to "much more than human" was used to assess responses. Characteristics included perceptual abilities, cognitive abilities, capacities for desire and intent, and the ability to experience emotion. Results indicated that participants rated robots as lower on the ability to experience emotion and the ability to wish as compared to humans. However, participants rated robots as sharing many characteristics with humans. For example, robots were perceived as sharing perceptual and cognitive abilities with humans. These

results support the idea that people tend to conceptualize a continuum lying between categories of what is human and non-human.

Thirdly, dehumanization has been commonly discussed as a situational variable, sometimes classified as a *disinhibiting factor* (e.g., Bandura et al., 1975, 1996; Turner et al., 1975). In a study by Turner and colleagues (1975), confederates rode in vehicles and provoked other drivers on the road. Confederates were positioned where the other drivers either could or could not see the confederate's face. Aggressive behaviors, including verbal aggression and hostile gesturing, in the other drivers were assessed as the dependent variable. The results indicated that the other drivers were more likely to behave aggressively when they were unable to see the confederate's face. These results were interpreted as evidence for the idea that a dehumanized context causes increases in aggression. However, operationalizing dehumanization as victim visibility omits much of the psychological range of the concept of dehumanization.

In all previous investigations on dehumanization, the construct has been operationalized in terms of: (1) victim characteristics (e.g., ethnicity), (2) features distinguishing humans from non-humans, and (3) context. What is missing from this previous work is: (1) an effort to explore and understand whether and how individuals might dehumanize others in more general terms (i.e., not only with respect to out-groups), and how such diffuse dehumanization might permit individuals to engage in or support the seemingly random use of violence; and (2) the examination of dehumanization as a component of an individual's stable knowledge structures.

Dehumanization and Aggression

In the present investigation, dehumanization beliefs will be examined with respect to their role in increasing the likelihood of *indiscriminate aggression.* Indiscriminate aggression is any act of aggression involving a victim whose identity is either wholly or partially unknown to the aggressor. Anecdotally, high-profile perpetrators of indiscriminately aggressive acts have endorsed dehumanization beliefs. A particularly explicit example is Pekka-Eric Auvinen, the 18-year-old Finn man who killed nine people in a 2007 shooting spree at a Finnish high school. Pekka-Eric clearly endorsed beliefs that others were not fully human. He stated that the "human race is not worth fighting for or saving… only worth killing," spoke of the "weak-minded masses," and photographed himself wearing a t-shirt emblazoned "humanity is overrated" (Auvinen, 2007).

Pekka-Eric's statements begin to capture the construct of dehumanization beliefs. Until now, dehumanization has not been discussed as a stable belief positioned within extant models of the development of aggression and violence. The current investigation seeks to define this discrete type of belief, evaluate the reliability and validity of a new measure of this construct, identify its correlates, examine the conditions under which dehumanization beliefs are activated, and examine a hypothesized causal link between dehumanization beliefs and indiscriminate aggression. This work may allow for the prediction and prevention of indiscriminately aggressive behaviors.

Theorists have proposed that when individuals are induced to view others in a dehumanized manner– for example, by describing victims as less than fully human– they will be more likely to engage in aggression towards others (e.g., Bandura et al., 2001; Gibson & Haritos-Fatouros, 1986). However, this proposition has been tested

empirically only very rarely with varied: (1) methods, (2) operationalizations of dehumanization, and (3) results (e.g., Bandura, Underwood & Fromson, 1975; Turner et al., 1975). Generally speaking, there is a serious gap in the psychological research on the link between dehumanization and aggression, and little unambiguous evidence that a dehumanized view of others is associated with aggressive behavior. Much of the extant scholarship on dehumanization and aggression involves non-empirical, largely theoretical accounts of the construct (e.g., Bar-Tal, 1990; Keen, 1986; Kelman, 1973; Opotow, 1990; Slovic, 2007; Staub, 2000; White, 1972).

Some previous experimentation has linked dehumanization with aggression (Bandura et al., 1975; Turner et al., 1975). However, these previous studies may be characterized as employing narrow and ambiguous operational definitions of dehumanization. For example, Bandura and colleagues (1975) conducted a study in which ostensible confederates were described to subjects in terms that were either more or less humanizing. Aggressive behavior toward these confederates was then measured by intensity of a punishing shock. In the humanized condition, confederates were described as "perceptive and understanding" to participants. In the dehumanized condition, confederates were described as "animalistic and rotten." The researchers found that subjects assigned to the dehumanized condition were significantly more aggressive than were subjects in the humanized condition. The most important limitation of this study is ambiguous independent manipulation. It is not clear which adjective (*perceptive, understanding, animalistic*, or *rotten*) caused the change in aggression. Particularly, the inclusion of the word *rotten* is a problematic element of the independent manipulation because it is negative yet not necessarily dehumanizing in its connotation.

If *rotten* alone caused the difference in aggression across the groups, then this experiment does not necessarily provide evidence for a causal link between dehumanization and aggression.

In later theoretical work on dehumanization, Bandura (1990) outlines processes by which dehumanization as a situational variable may influence behavior. Cues in the environment may be related to mental models of "humanized" or "dehumanized." Such cues are perceived by an individual, and then serve to initiate automatic processes influencing behavioral outcomes. Importantly, processes involved in the inhibition of immoral behavior are theorized to be quite sensitive to such humanized or dehumanized cues. As such, within Bandura's conceptualization, context plays an essential role in all instances of dehumanization. In contrast to this, the current model of dehumanization focuses less on context and instead emphasizes the stability and pervasive influence of the cognitive structures that may underlie dehumanizing beliefs and behaviors. While not denying the importance of context and cue-based activation, the current investigation into dehumanization adds to Bandura's ideas and emphasizes: (1) the importance of relatively stable nature of cognitive structures, (2) the stability of individual differences in the tendency to dehumanize others, and (3) the stability of relations between the tendency to dehumanize and other personality and behavioral variables across individuals.

Previous theoretical work on dehumanization, though it has discussed the potential importance of cognitive structures, has not directly outlined a model of the of person-level processes underlying stable individual differences in the tendency to dehumanize others. Haslam and Bain (2007) argued that dehumanization might not be limited to extreme or rare contexts, but might have an important albeit subtle impact

during commonplace, daily interactions. For example, dehumanization may play a role in the unfair treatment of employees (such as denying overtime pay for additional work). If dehumanization is indeed largely context-*independent*, there is a need to examine the validity of conceptualizing and measuring dehumanization as a stable belief within individuals. Reliable and valid measurement of dehumanization beliefs is a key requisite for furthering research and theory on the relation between dehumanization and aggression.

Indiscriminate Aggression

Indiscriminate aggression is here defined as any act of aggression in which the aggressor may have incomplete or no knowledge of some or all dimensions of at least one victim's identity. For example, an aggressor may be able to identify a victim as a resident of a particular city but not know the victim by name. If any given act of aggression involves multiple victims, at least one of whom may be characterized as indiscriminately chosen, then the aggressive act falls under the definition of indiscriminate aggression. Importantly, also, the aggressor must *intend to harm* a victim in order for an aggressive act to be defined as indiscriminate.

Previous research on this broad class of behaviors in the aggression literature has relied on a variety of terms describing mass killings and ostensibly random violence. For example, within the terrorism literature, Schmid (2000) differentiates between *focused* and *indiscriminately* chosen victims of terrorist acts. Ganor (1998) defines indiscriminate terrorism as committing acts of violence "without regard to the specific identity of the victims" to achieve the end of spreading fear. The terms *massacre* and *running amok* have been used to specifically describe indiscriminate killing (Mullen, 2004;

Westermeyer, 1972). Also, the term *random violence* has been employed (e.g., Anderson et al., 1996; Sohn, 1997). There are several problems with previously used terms: (1) the terms are often limited to extreme violence and not aggression generally and (2) whether aggressive events are perceived as more or less targeted is a matter of perspective, and distinctions between the victims' versus the perpetrators' perspectives are often unclear. The main advantages of use of the term indiscriminate aggression are: (1) the base concept is broad enough to encompass a range of aggressive behaviors from mild to severe and (2) operationalizations of the indiscriminate nature of this type of aggression are anchored in the perspective of the aggressor, not from the perspectives of victims, society, or media.

The concept of randomness is often problematically ambiguous within the social sciences. The term "random" in the aggression literature is often used to express a lack of cause or meaning associated with aggression, the unpredictability of attacks, or is used to describe equally distributed odds of victimization. Some apparently random social phenomena may in fact be pseudo-random. For example, complex social networks, though apparently randomly organized, may be largely organized by non-random forces (Newman, Watts, & Strogatz, 2002). For instance, attempting to organize and understand the complete set of friendships within a country-wide population may seem staggering to a third-party observer; however, from the perspective of any single node in such a web, the whole set of an individual's friendships may be easily listed. What is central to understanding indiscriminate aggression is that even though the processes that underlie aggressive behaviors may not be random, from the perspective of the aggressor, the choice of victim is experienced as "random" or haphazard.

Indiscriminate aggression thus includes diverse instances of aggression or violence in which a victim is: (1) actively chosen by the aggressor but (2) the identity of the victim is unknown to the aggressor. Indiscriminately aggressive acts may range in severity from lethal violence to relatively low-impact aggression. Examples of acts of aggression in which victims are chosen in a haphazard fashion include: shooting into crowds; wartime atrocities against civilians; inhumane treatment of prisoners; online criminal behavior such as the spread of computer viruses; "white collar" ethical violations such as mismanagement or defrauding of employees; some instances of aggressive driving; and financial policy decisions adversely affecting quality of life within communities and institutions (e.g., Falk et al., 2006; Goldbert et al., 2001; Kelly, 2009; Newman et al., 2002; Turner et al., 1975). Perpetrating acts of violence against randomly chosen victims has been associated with the instrumental goals of terrorist acts, efficaciously spreading fear (Aron, 1966; Liska & Baccaglini, 1990). The period following World War II saw an increase in awareness of and outcry against the indiscriminate victimization of civilian populations during wartime. Additions made to the Geneva Conventions in 1977 specifically define "launching an indiscriminate attack affecting the civilian population or civilian objects in the knowledge that such attack will cause excessive loss of life, injury to civilians or damage to civilian objects" as a crime of war. The problem of indiscriminate aggression thus has been acknowledged; however, systematic conceptualization and study of the construct are greatly lacking. The current research directly addresses the need for research on indiscriminate aggression.

Indiscriminate Aggression in Real World Conflicts

Instances of aggression involving the indiscriminate selection of victims have received attention within the fields of military history and studies of terrorism as the aggressive acts in question relate to military or policy concerns. These discussions are often framed in terms of the basic distinction between combatants and non-combatants. However, the degree to which the aggressor has knowledge of a victim's identity is also an important component of past conceptualizations of indiscriminate aggression within military and terrorism studies. Indiscriminate terrorism is commonly defined as any terrorist act in which victims are chosen without regard to their individual identity. Instead, victims are often chosen based upon their membership in a broader social group (Goodwin, 2006). Indiscriminate choice of target selection by terrorist organizations is an important attribute of current trends in terrorism (Martin, 2003). Whereas during the bulk of the twentieth century, terrorists tended to choose precise targets and execute attacks with relatively low causality rates, current trends in terrorism include indiscriminate target selection and relatively high casualty rates (Martin, 2003).

Psychological processes theoretically implicated in the adoption of positive attitudes toward terrorism and terrorist behavior have been addressed (e.g., Ginges, 1997; Huesmann, 2004; Shaw, 1986). Huesmann (2004) highlights the theoretical importance of social cognition as a causal factor in terrorist acts. Specifically, he highlights the potential causal role of hostile beliefs about the world generally, aggressive behavioral scripts, and beliefs about the acceptableness of aggressive behavior. Given the increasing trend in indiscriminate terror attacks, an increased understanding of the psychological mechanisms underlying these behaviors is needed.

Past research on the use of indiscriminate aggression by militaries and terrorist organization has largely served only to document real world instances of indiscriminate aggression. This scholarship illustrates the prevalence of indiscriminate aggression in military and quasi-military contexts. During World War II, Japan, Germany, Great Britain, and American forces all engaged in military operations involving the indiscriminate victimization of civilian populations (Hastings, 2008; Schaffer, 1980). US forces in Vietnam, Iraq and Afghanistan engaged in indiscriminate artillery shelling against civilians (Hawkins, 2006; Ricks, 2006; Tennyson, 2009). Russian forces engaged in indiscriminate attacks against Chechen civilians (Grieme, 1999; Lyall, 2009). The Croats and Serbs engaged in indiscriminate shelling of civilians during the Bosnian war (Thornberry, 1996). Many terrorist or revolutionary groups engage in the indiscriminate selection of victims. During the 20th and 21st centuries, these groups have included the National Liberation Front in Algeria, Hamas, the Tamil Tigers in Sri Lanka, al-Qa'ida, and the Chechen separatist movement (Gastal, 2008; Goodwin, 2006).

Past studies of indiscriminate terror attacks have examined the functional utility of indiscriminate aggression as well as the methods characteristic of these attacks. The functions of indiscriminate terrorist attacks overlap with their discriminate counter parts. Indiscriminate terrorist attacks function to increase a sense of chaos within a population (Merari, 1999, 1993), spread fear (Kalyvas, 2004), and to capture the attention of proximal and international observers (Jenkins, 1975). However, indiscriminate attacks possess some unique attributes. Indiscriminate terrorist attacks may be more cost-effective as compared to targeted attacks (Gastal, 2008). Indiscriminate terrorist attacks may be more likely to occur within the contexts of political and social struggles involving

ethnic strife as compared to those that have no component of ethnic conflict (Hultman, 2005).

Indiscriminate aggression within military and quasi-military contexts has an impact on the lives of countless people and on the stability and functioning of nations around the world. What is missing from reviews of historical instances of indiscriminate attacks is an examination of the psychological mechanisms underlying indiscriminately aggressive behavior. Specifically, experimental research able to draw causal inferences between variables is needed.

Indiscriminate Aggression in the Current Investigation

In the current investigation, indiscriminate aggression is measured via an analog laboratory task. Within the parameters of this task indiscriminate aggression is operationalized as choosing to blast either a group of individuals or an ostensibly "randomly" chosen individual with an unpleasantly loud noise.

Theory on the ecological validity of laboratory paradigms for understanding behavioral phenomena indicates that such analogs are appropriate and valid when they accurately model hypothesized relations among constructs (Anderson et al., 1999). Additionally, the noise blast paradigm is commonly used in laboratory research on aggressive behavior (e.g., Anderson & Dill, 2000; Bushman et al., 1995; Cherek, 1981; Twenge et al., 2001).

In the study conducted by Bushman and colleagues (1995), the administration of noise blasts was used as a dependent measure of aggression. Participants were told that they were to play a competitive reaction time game against another player via computer. Participants were instructed to try to be the first to press a button when a target image

was presented on the computer screen. When the participant won a trial, they were allowed to deliver a loud noise blast to the loser. All wins and losses within the game were pre-programmed and executed by the computer. Participants themselves were subjected to noise blasts from the confederate player.

The current dissertation research employs a similar paradigm in order to measure indiscriminate aggression. Several differences exist between the current paradigm and the paradigm used by Bushman and colleagues (1995). In the current paradigm, the participants will believe they are playing with more than one ostensible confederate player. During any given trial, there will be one winner and multiple losers. Additionally, within in the current paradigm participants will be given the opportunity to blast other players when they lose a trial as opposed to when they win. A third difference is that within the current paradigm, participants will be subjected to noise blasts from a confederate player, yet they will not know which one player out of the group of multiple other players blasted them.

These divergences from Bushman and colleague's (1995) paradigm allow the current paradigm to measure specifically indiscriminant aggression. Participants will be provoked and given the chance to retaliate, yet will be totally unable to determine the identity of their victims. The selection of victim without regard to the victim's identity is the essence of indiscriminant aggression.

Contemporary Theory and Research on Aggressive Behavior

Intent to harm is essential to current definitions of aggression (Geen, 1990), and the intent to harm a *specific* person or persons is implied in virtually all theoretical discussions on aggression (see, e.g., Anderson & Bushman, 2002; Berkowitz, 1993; Buss,

1961; Feshbach, 1997). Thus, it is not surprising that past theory and research has not positioned the indiscriminate or random victimization of strangers within existing theoretical models of aggressive behavior. The current investigation represents an important step toward integrating indiscriminate aggression into the larger body of aggression literature. Here, it is posited that a specific type of aggression-supporting cognitive belief -- i.e., dehumanization -- is uniquely associated with indiscriminate aggression. Cognitive factors, such as holding stable aggression-supporting beliefs or having an aggressive cognitive processing style, are known correlates of aggression and staples of models of aggressive behavior (e.g., Berkowitz, 1998; Dodge, 2006; Guerra & Huesmann, 2004; Huesmann, 1998; Huesmann & Guerra, 1997).

The current line of inquiry is guided by the General Aggression Model (GAM; Anderson & Bushman, 2002; Anderson & Carnagey, 2004). The GAM was proposed as an integration of several empirically supported, yet somewhat disparate, theories of the development of aggression. GAM is dominated by social-cognitive information-processing theory (Dodge, 2006; Huesmann, 1998) and also includes components of cognitive neoassociationist models, and affect- and arousal-focal models (Anderson & Dill, 2000; Berkowitz, 1984, 1993; Geen, 1990; Zillman, 1983). GAM accounts for the influence of individual-level variables to aggressive behavior over both the short and the long term (Anderson & Carnagey, 2004). Short-term processes may activate stable aggression-supporting knowledge structures during a given aggressive episode. Short-term processes may include increases in physical arousal and the priming of aggressive scripts, schemas, and beliefs. As knowledge structures are activated repeatedly, they may remain activated outside of strong contextual cues. Thus, as a given style of interpreting

social events is repeatedly prompted by environmental cues, the "on switch" for the interpretive style may remain on across contexts.

GAM accounts for the reciprocal influence of individual and situational variables upon one another. Through reciprocal processes, an individual may come to shape his or her environment around a habitual style of perceiving and acting upon the environment. Both individual and situational variables may influence aggressive affect, cognition, and physical arousal. These factors in turn directly affect appraisal process and behavioral outcomes (Lindsay & Anderson, 2000). Over time, behavioral outcomes may begin to shape an individual's beliefs, attitudes, and values concerning aggression and may also shape situational variables as they individuals choose environments and elicit behaviors from others. Within the GAM framework, stable beliefs supporting a dehumanized view of others are proposed as one key factor underlying the phenomenon of indiscriminate aggression.

Social-cognitive theory emphasizes the importance of acquiring beliefs, schemas, and scripts through direct observational learning to the development of habitual behaviors (Bandura, 1973). Accordingly, aggression-supporting beliefs are an important factor in the development of aggressive behaviors. Normative beliefs about aggression and mean world beliefs are two important and well-established types of aggression-supporting belief. Normative beliefs about aggression encompass an individual's appraisal of the propriety of aggressive responses to provocation. Mean world beliefs assess an individual's general sense of the rate of aggression that occurs in the world, both generally and relative to themselves. Endorsement of normative beliefs about aggression and mean world beliefs is associated with aggressive behavior (Huesmann & Guerra,

1997; Zelli et al., 1999). Acquiring such beliefs may be an important precursor to or sustainer of the development of aggressive behavior (Zelli, Huesmann & Cervone, 1995). Other aggression-supporting beliefs that have not yet been fully explicated in the literature might play a similar role in the development of aggression. Dehumanization beliefs might relate to the development of aggression in a way similar to other aggression-supporting beliefs.

The hypothetical model underlying the current research includes both short- and long-term processes. Short-term processes include relations among anger, aggressive behaviors, and dehumanizing cognitions (see Figure 1). Dehumanization beliefs are hypothesized as a spontaneous concomitant of angry affect. There is evidence that mood-congruent cognitions are an important part of the experience of anger (Siemer, 2005). Further, anger is a correlate of aggression (Berkowitz, 1993). Individuals who are frequently angry and/or aggressive are theorized to show higher levels of dehumanization beliefs.

Theorized long-term processes include stable dehumanizing beliefs arising as a product of chronic episodes of negative emotionality (particularly anger) and aggression characterized by dehumanizing cognitions. Chronically activated negative affect may lead to the chronic activation of dehumanizing cognitions. For example, if angry affect is frequently activated over time, dehumanizing cognitions will eventually crystallize into stable dehumanization beliefs. Chronic, repeated, and episodic-limited activation of dehumanizing cognitions may become a stable dehumanizing cognitive style manifested as a set of stable dehumanization beliefs. Importantly, once dehumanization beliefs are established, they should remain at least partially activated both within and outside of

contexts containing negative affective- or aggression-related cues. Though a generalized negative emotional state may be sufficient to activate dehumanizing cognitions, it is proposed that anger specifically is importantly related to the activation of dehumanizing cognitions. The proposed model accounts for both the acquisition and maintenance of dehumanization beliefs, in that once an individual has established stable dehumanization beliefs, these beliefs lead to increases in behaviors which subsequently may elicit negative affect- and aggression-related cues from the environment. Potentially, then, long-term mechanisms may continually trigger the above described short-term processes, leading to the long-term maintenance of dehumanization beliefs.

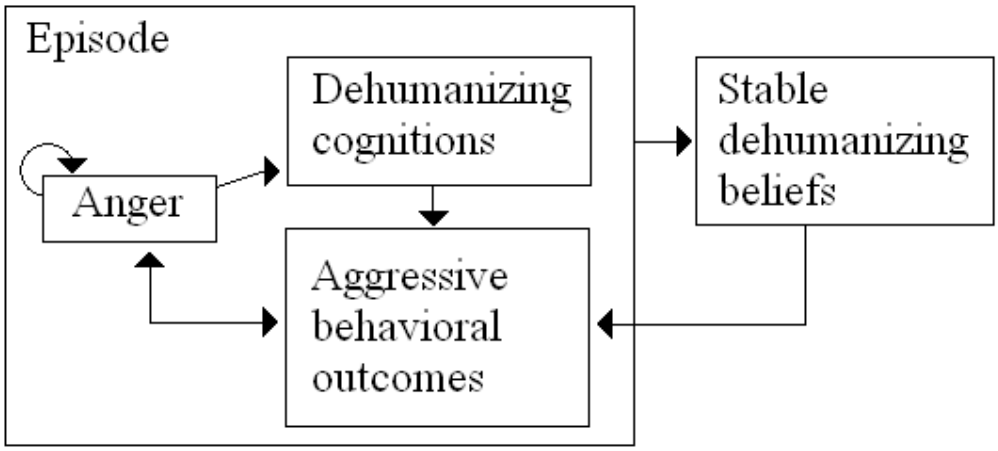

Figure 1. Theorized relations between anger and dehumanizing cognitions and beliefs.

Dehumanization, Psychopathy, and Empathy

The relation between emotion and cognition is essential to understanding the development and maintenance of dehumanization beliefs. This relation also is essential to understanding the theoretical differences between holding dehumanization beliefs and

a related construct, psychopathy. Theorized differential experiences of empathy are described to provide an illustration of the conceptual differences between psychopathy and holding dehumanization beliefs.

Mild dehumanizing cognitions are theorized to be triggered by negative affect in normal populations. Particularly, anger is theorized to trigger dehumanizing cognitions. For individuals who experience frequent negative affective episodes, intermittently activated dehumanizing cognitions may become chronically activated and easily accessible, resulting in the tendency to think of others in a generally dehumanizing way.

The tendency to dehumanize others is similar to but distinct from psychopathy. Though both psychopaths and dehumanizers are expected to engage in aggressive behaviors at a greater rate as compared to members of the general population, their experiences of emotion may be very different. Psychopathic individuals are often described as lacking the ability to experience the full range of human emotional experience, and in particular they have a blunted experience of negative emotions (Cleckley, 1976; Hare, 1993; Frick, 1998). In contrast to this, individuals who tend to dehumanize are theorized to experience intensified negative emotions. As will be demonstrated in preliminary study 3 of this dissertation, individuals who tend to dehumanize others tend to be characteristically angry.

Given that the general intensity of the experience of negative emotionality should differ between dehumanizers and psychopaths, it is likely that experiences of empathy differ across these two populations as well. Empathy is the ability to share in the emotional state of another person (Cohen & Strayer, 1996). Empathic abilities vary across individuals in non-clinical populations, but very low levels of empathy may be a

marker for serious antisocial behavioral problems (Farrington & Jolliffe, 2001; Miller & Eisenberg, 1988). Low levels of the capacity to empathize with others are associated with aggressive behavior (Cohen & Strayer, 1996). Psychopaths exhibit low levels of empathy (Hare, 1993; Soderstrom, 2003). Psychopaths often appear indifferent to the suffering of others (Cleckley, 1976).

In contrast to this, dehumanizers are expected to be aggressive towards others, yet unlike psychopaths they are expected to lie within the normative range of empathic ability. Unlike the blunted emotionality of psychopaths, dehumanizers are expected to experience negatively valenced emotion intensely. Being a dehumanizer is theorized to be associated with the frequent experience of negative emotionality, especially anger.

Psychopaths and dehumanizers are also theorized to be distinct in terms of their attitudes toward the self. Psychopaths also often express grandiose perceptions of the self, or narcissism (Hare, 1993). In contrast to this, dehumanizers, as will be shown in preliminary study 3, tend to have low self esteem and little self-compassion. Thus, though psychopaths and dehumanizers are theoretically similar in terms of the tendency to engage in aggressive behaviors, they may differ fundamentally in their experiences of emotion, their patterns of empathizing with others, and in their attitudes toward the self. The role of emotion in the relation between holding dehumanization beliefs and engaging in indiscriminately aggressive behavior will be examined within the current dissertation research.

Preliminary Research

The current dissertation research shares theoretical and methodological background with three studies conducted during 2007 and 2008. Preliminary study 1

employed a mood induction procedure and examined relations between anger and the perception of aggression. Preliminary study 2 examined identification with a high-profile indiscriminate aggressor, Cho Seung-Hui, and associations with aggression. Preliminary study 3 examined the relations among dehumanization beliefs, aggression, and several indicators of psychological functioning, and tested the reliability and validity of the new Dehumanization Beliefs Scale.

Preliminary Study 1

Mood Induction and Perception of Violent Media Study

Preliminary Study 1 considered the role that emotional state- particularly anger- plays in the perception of aggression. Using a mood induction paradigm, anger, happiness, and sadness were induced in the lab, and participants subsequently reported on their memory and attitudes toward a violent video clip. The purpose of this study was to test the hypothesis that angry affect causes changes in perceptions of and attitudes toward violent events. Anger is related to increased automaticity in thinking about social situations (Tiedens, 2001; Zelli et al., 1995). Instead of generating novel cognitions and behaviors, individuals tend to rely on frequently used behavioral scripts when angry. When angry, individuals should tend to perceive, think, and act in their idiosyncratically typical ways. Anger is also typically associated with aggressive behavior, and this relation is probably bi-directional (Berkowitz, 1993; Colder & Stice, 1998; Cornell et al., 1999; Deffenbacher, 1992). It was hypothesized that participants in the angry mood induction condition would report recalling more violent events in the clip and more positive attitudes toward those events as compared to participants in the other mood conditions.

Methods

Participants

Participants ($N = 106$) were undergraduate students at Rutgers University in Newark, New Jersey. Participants earned 2 research point credits in exchange for their participation. All participants were recruited through the psychology department's subject pool. The participant population consisted of 20% males and 80% females. The sample was ethnically diverse and included 15% African American, 25% Asian, 20% Hispanic, 8% Middle Eastern/Arabic, 21% White and 11% other ethnicity participants. The mean age of the participants was 20.67 years ($SD = 4.07$).

Materials

Mood induction. The Velten mood induction procedure (Velten, 1968) entails reading a series of 50 statements and imagining being in the mood state suggested by each statement. Participants were instructed to: "read each sentence, imagine what the sentence is saying, recall any relevant memories, and generally try as much as possible to get into the mood suggested by the sentence." Each statement was presented on the computer screen for 20 seconds automatically by the computer. At the beginning, following the 25th statement, and after the last statement, participants reported on their current mood. Participants used a 7-point Likert scale to answer the questions regarding how intensely they were experiencing the target mood (1 = "not at all;" 7 = "very"). The mood induction procedure took approximately 20 minutes to complete. The mood statements used in this study appear in the Appendix.

Dependent measures. Participants' attitudes toward and memories of the details of the events of the violent television clip were assessed through a series of open-ended

and multiple choice questions. Participants were asked to recall how many times someone was hit or punched, someone was kicked, someone was shot, blood was shown on screen, the number of weapons that were shown, the number of times someone cried out in pain, the number of times someone laughed, the number of gunshots they heard, the number of people killed, and the number of dead bodies shown in the clip. Participants were also asked to rate how well a series of different adjectives described the clip using a 7-point Likert scale (1 = "not at all;" 7 = "very"). The adjectives included: violent, boring, exciting, entertaining, energizing, angering, involving, stimulating, scary, and upsetting.

Procedure

All procedures were reviewed and approved by the institutional review board. Participants were asked to enter laboratory space in Smith Hall for a 60 minute lab session. At the time of the informed consent procedure, all participants were given a cover story and were told that the experiment was concerned with the relation between mood and memory. Participants were not told that the study was concerned with the perception of aggression. Participants were seated at a computer asked to pay attention to a series of mood induction statements presented on the computer screen. Participants were randomly assigned to undergo either a happy, angry, sad, or neutral mood induction. Participants were then asked to view one of two brief television clips. The clips were taken from the television show *24* and depicted groups of men engaging in gun battles and hand-to-hand combat. Participants were then asked to answer a series of survey questions including questions about their memory for events during the clip and their attitudes toward the events depicted in the clip. At the conclusion of the experiment, all

participants were debriefed and told that the study was primarily concerned with the perception of aggression. Participants received two R-points in exchange for their participation.

Results

Mood Manipulation Check

Participants rated the degree to which they were experiencing their target mood three times during the mood induction procedure. In order to determine the effectiveness of the mood inductions, paired-samples t-tests were conducted comparing the first mood rating to the third mood rating within each mood condition. Within the angry condition, the results indicated that participants rated their anger level at the end of the induction (M = 1.25, SD = 2.26) as being significantly higher than their anger level at the beginning of the induction (M = .53, SD = 1.10), $t(72) = 3.62$, $p < .01$. Within the happy condition, the results indicated that participants rated their happiness level at the end of the induction (M = 1.74, SD = 2.56) as being significantly higher than their happiness level at the beginning of the induction (M = 1.40, SD = 2.17), $t(73) = 2.64$, $p < .01$. Within the sadness condition, the results indicated that participants rated their sadness level at the end of the induction (M = 1.31, SD = 2.56) as being significantly higher than their sadness level at the beginning of the induction (M = .62, SD = 1.37), $t(28) = 2.17$, $p < .05$. No significant change in neutral mood ratings was observed between the first and last ratings.

Principal Analyses

Data were analyzed using the Pearson Product Moment Correlation for continuous data and ANOVA or t-test procedures for categorical data.

Participants' level of anger at the end of the mood induction procedure was associated with perceptions of the violent clips. Within the angry mood condition, the reported intensity of experienced anger was associated with the perceived justification of violent actions portrayed in the clips ($r = .27$, $p < .05$); perceived realism of the clips ($r = .26$, $p < .05$); and reported liking of the violent protagonist of the clip ($r = .32$, $p < .01$). Similarly, the reported intensity of experienced sadness was associated with the perceived realism of the clip ($r = .45$, $p < .05$).

Analysis of variance procedures were conducted to determine whether participants in the angry condition differed from participants in all other conditions. Within these analyses, the variances of happy, sad, and neutral were pooled through weighted contrasts in order to compare participants in the angry condition to participants in the three other conditions. The participants in the angry condition, as compared to participants in all other conditions, reported perceiving the violent clips as more exciting ($F[3, 99] = 4.43$, $p = .006$, $\eta^2 = .18$) and more entertaining ($F[3, 99] = 3.53$, $p = .018$, $\eta^2 = .15$). No significant differences were found across mood condition for any of the questions assessing memories for details of the clip.

Analysis of variance procedures were also conducted to examine pairwise comparisons across all four conditions. Within these analyses, conditions were not pooled. The participants in the sad condition, as compared to participants in each of the other conditions, reported perceiving the violent clips as less exciting ($F[3, 99] = 4.43$, $p = .006$, $\eta^2 = .18$) but more entertaining ($F[3, 99] = 3.53$, $p = .018$, $\eta^2 = .15$).

Gender Effects

T-tests were conducted to test for differences across gender for the dependent variables. Females ($M = 3.75$, $SD = 1.70$) reported perceiving the videos as more exciting as compared to males ($M = 2.50$, $SD = 2.11$), $t(59) = 2.18$, $p < .05$, $d = .65$. No other differences across gender were found for any of the other dependent variables.

Discussion

The purpose of this study was to test the hypothesis that angry affect causes changes in perceptions of and attitudes toward violent events. In general, the data obtained in this study support the initial hypothesis. The data indicate that: (1) gender may be an important factor in associations between emotional state and the perception of violent events; (2) the intensity of the experience of anger is associated with positive attitudes toward violent events and violent characters; and (3) when angry, individuals perceive violent events as more exciting and entertaining as compared to individuals who are not angry.

Females tended to rate the violent clips as more exciting as compared to males. Trends in gender differences in other paradigms on exposure to violent images include larger effects for males as well as greater lifetime exposure in males. For example, in some previous studies on media violence exposure effects, males report larger increases in aggression following exposure (e.g., Bartholow & Anderson, 2001). Also, males tend to report consuming greater amount of violent media as compared to females (Cantor, 1998; Sargent et al., 2002; Valkenburg & Janssen, 1999). The current finding that females rated the violent clips as more exciting may be attributable to lower levels of lifetime exposure to violent media. The clips may seem relatively more exciting as compared to females' normal media preferences.

The current findings indicate that the intensity of anger experienced while viewing a violent clip is associated with an increased ratings of justification for the violent events, perceived realism of the clip, and more liking for the protagonist. These findings support the initial hypothesis that anger is importantly related to the perception of violent images. Potential mechanisms underlying this effect may include an increased feeling of empathy towards the individuals portrayed in the clip. When feeling highly angry, participants may have felt that they shared in the feelings portrayed by the protagonist who engaged in a gun battle throughout the clip.

As indicated in the ANOVA with weighted contrasts, angry participants perceived the violent clip as more exciting and entertaining as compared to participants in the other mood conditions. This effect may be attributable to changes in physical arousal for participants in the angry condition. Physical arousal is one important known mechanism underlying media violence effects (Anderson & Bushman, 2001). Experiencing anger while concurrently perceiving violence as exciting and entertaining may be an important component process underlying the relation between exposure to violent images and subsequent changes in attitudes toward violence and aggressors. Anger may potentially serve as a moderator of the relation between exposure to violent images and aggressive outcomes. However, additional research is needed to test this proposition.

The current findings provide some support for the idea that it is not just anger that is related to changes in attitudes and perception of violent events, but that a generally negative affective state may be related to viewing outcomes. Results indicated that the reported intensity of experienced sadness was associated with the perceived realism of the clip. An effect of sadness was also supported by the pairwise ANOVA. These

findings suggest that a generally negative affectivity is related to changes in attitudes toward and the perception of violent images.

These findings may help explain individual differences in susceptibility to the effects of viewing violent images by locating underlying differences in emotional and perceptual processes. Previous research on the desensitizing effects of media violence exposure has highlighted the role of emotional processing in changes in anti-social outcomes (e.g., Bushman & Anderson, 2009). It is possible that, along with desensitization, cognitive variables such as dehumanization are related to the emotional processing of violent images. However, the role of dehumanization in processes underlying the effects of violent images lies outside the scope of the current investigation.

Preliminary Study 2

Correlates of Identification with Aggressors Study

Understanding the actions of violent indiscriminate aggressors such as school shooters is difficult because such incidents are both rare and difficult to predict. One approach to understanding indiscriminate aggressors is through identification. The purpose of preliminary study 2 was to examine the rates of identification with Cho Seung-Hui, the Virginia Tech shooter, as well as relations between identification and aggressive behaviors and beliefs.

Here, use of the term identification is distinct from the concept of *identification with the aggressor* as discussed in psychoanalytic theory. In such theory, identification with the aggressor describes a victim's adoption of an aggressor's perspective, including the goals, emotions, and thoughts of their victimizer (Ferenczi, 1980; Freud, 1936). In

the current work, the term identification encompasses perceived similarity and desired similarity, and does not require a victim/victimizer relationship.

Identification with aggressive, fictional media characters is associated with aggressive outcomes (Huesmann & Eron, 1986; Huesmann, Moise-Titus, Podolski & Eron, 2003). Identification moderates the effects of violent media exposure on aggressive outcomes, exacerbating these aggressive outcomes associated with exposure to violent media (Bandura, 2002; Chory-Assad & Cicchirillo, 2005; Huesmann et al., 2003; Huesmann & Eron, 1986). Identifying with violent characters places individuals at risk for increases in both aggression-supporting beliefs and aggressive behaviors (Huesmann et al., 2003).

Given that identification with fictional aggressive characters is related to aggressive outcomes, identification with real-world individuals who commit acts of aggression should also be related to aggressive outcomes. Identification with real-world aggressors may be more strongly related to aggressive outcomes as compared to identification with fictional aggressors given that the perceived realism of violent media content is associated with increases in aggressive outcomes (Huesmann et al., 2003).

There is evidence that identification with real-world aggressors is associated with mean world beliefs (McFaul et al., 2008). The relations between identification with a high-profile indiscriminate aggressor and aggressive outcomes remain to be explored. The current study tests the hypotheses that at least some people identify with Seung-Hui and that this identification will be related to aggressive outcomes.

Methods

Participants

Participants (N = 354) were undergraduate students at Rutgers University in Newark, New Jersey. Participants earned 2 research point credits in exchange for their participation. The sample was racially/ethnically diverse and included 14% African American, 32% Asian, 26% Hispanic, 9% Middle Eastern, 18% White and 8% other ethnicity participants. The average age of the sample was 20.29 years (SD = 4.03). The participant population consisted of 29% males and 71% females.

Materials

Attitudes toward the shooter. Participants were presented with a brief vignette describing the Virginia Tech shooting ("On April 16, 2007, Seung-Hui Cho shot and killed 32 people in addition to wounding many more people at Virginia Tech in Blacksburg, Virginia"). Participants reported how they felt about the event having happened using an 11-point Likert scale (11 = "very bad;" 1 = "very glad"). Participants reported how often they thought about what it would be like to be the shooter using a 10-point Likert scale (1 = "very often;" 10 = "never"). Participants reported how right or wrong (or how justifiable) they thought the shooting was using a 10-point Likert scale (1 = "it's perfectly ok;" 10 = "it's really wrong"). Finally, participants reported how much they wished they were like or think they are like the shooter using a 10-point Likert scale (1 = "very much like;" 10 = "not at all like").

Mean world beliefs. Participants completed a fourteen item measure of mean world beliefs based on Zelli's (1992) persecution beliefs questionnaire. This questionnaire assessed the degree to which participants view the world as a mean, hostile place (e.g., "People are usually out to get each other"). Participants indicated their responses using a 4-point Likert scale (1 = "never;" 4 = "frequently;" α = .87). Half of

the items refer to hostile interactions among people generally, and half of the items refer to hostility directed toward the respondent.

Physical aggression. Physically aggressive behavior was assessed with 4 items developed by Huesmann and colleagues (e.g., Huesmann et al., 2003). The items asked how often during the past year the participant had engaged in various physically aggressive behaviors (e.g., "how often have you slapped or kicked someone?"). Participants indicated their responses using a 5-point Likert scale (0 = "never," 4 = "a lot"; $\alpha = .68$).

Relational aggression. Relationally aggressive behavior was assessed with 6 items based on Goldstein and Tisak's (2004) measure. The items asked how often in the last month the participant had engaged in various relationally aggressive behaviors (e.g., "How often in the last month has someone told stories about you that were untrue?"). Participants indicated their responses using a 5-point Likert scale (0 = "never," 4 = "five or more times per week"; $\alpha = .68$).

Aggressive fantasy. Aggressive fantasy was assessed with an 8-item scale based on items developed by Huesmann and Eron (Huesmann & Eron, 1986; Rosenfeld, Huesmann, Eron, & Torney-Purta, 1982). Participants reported on how often they engage in various forms of aggressive fantasizing (e.g. "Do you sometimes imagine or have daydreams about hitting or hurting somebody that you don't like?"). Participants indicated their responses on a four-point Likert scale (0 = "never," 4 = "a lot or often"; $\alpha = .85$).

Procedure

All procedures were reviewed and approved by the institutional review board. All participants were recruited through the psychology department's subject pool. Participants were asked to enter laboratory space in Smith Hall for a 60 minute lab session. Participants completed an informed consent procedure prior to participation. Participants completed a battery of survey questions using a paper and pencil. The survey battery included the measures outlined above along with additional measures not related to the current research question that are not listed here. Participants received two R-points in exchange for their participation.

Results

Principal Analyses

Reactions to indiscriminate violence such as the Virginia Tech shootings were not uniformly condemnatory. In answer to the question "How much do you wish you were like, or think that you really ARE like the VA Tech shooter?" approximately 5% of the sample (n = 17) expressed some level of identification with the shooter. Nearly 20% (n= 72) reported that at some point they imagined what it would be like to be the shooter. Approximately 1% (n = 20) of the sample reported that the shooter's actions were to at least some degree morally justifiable. Approximately 3% (n = 10) reported feeling at least somewhat glad when they heard reports of the shootings.

Data were analyzed using the Pearson Product Moment Correlation for continuous data. The more often participants reported thinking about what it would be like to have been the shooter, the higher was their self-reported frequency of engaging in both relationally aggressive behaviors ($r = .11$, $p < .05$) and aggressive fantasy ($r = .13$, $p < .05$). Additionally, participants who reported higher mean world beliefs regarding the

self, which are beliefs that others are generally hostile and "out to get" the individual, also reported a greater frequency of imagining being Sueng-Hui ($r = .14$, $p < .01$), thinking that Seung-Hui's actions were justifiable or morally right ($r = .20$, $p < .01$), and greater identification with Seung-Hui ($r = .11$, $p < .05$).

Gender Effects

A series of t-tests were conducted to test for gender differences across the dependent variables. In response to the question "How do you feel about this event having happened?," females ($M = 1.38$, $SD = 1.57$) reported feeling more negatively about the shooting having occurred as compared to males ($M = 1.78$, $SD = 1. 99$), $t(368) = 2.05$, $p < .05$, $d = .22$. Males ($M = .65$; $SD = .71$) reported higher levels of physical aggression as compared to females ($M = .41$; $SD = .54$), $t(368) = 3.48$, $p < .01$, $d = .38$. Males ($M = .79$; $SD = .59$) reported higher levels of aggressive fantasy as compared to females ($M = .51$; $SD = .49$), $t(369) = 4.81$, $p < .001$, $d = .53$. No other differences across gender were detected for any other dependent variable.

Discussion

This study sought to examine the rates of identification and the correlates of identifying with a perpetrator of indiscriminate violence. Results indicated that a significant minority of the sample identified with or held positive attitudes toward the shooter. These findings support the hypothesis that at least some individuals identify with Seung-Hui. Approximately one-fifth of the sample reported imagining being Seung-Hui. Approximately 5% of the sample reported either wishing they were like or believing that they are like Seung-Hui. Smaller percentages of the sample reported perceiving the shootings as justified or feeling glad when they heard of the events.

The rates of identification with Seung-Hui may be in part attributable to the fact that the aggressor was a college student and the sample was comprised of college students. The lifestyle similarities shared by the aggressor and the sample may have influenced rates of imagining being the aggressor. Indiscriminate aggressors who seem to live normal, relatable lives may elicit more identification from members of the population as compared to indiscriminate aggressors who live bizarre or isolated lives. Additional research is needed to examine differential rates of identification across different types of indiscriminate aggressors.

These findings indicated that identifying with the shooter was associated with aggressive cognitive and behavioral outcomes. Participants who identified with the shooter also tended to report engaging in relationally aggressive behavior, aggressive fantasies, and holding mean world beliefs. These results replicate the previous finding that identification with real-world aggressors is associated with higher mean world beliefs (McFaul et al., 2008).

Interestingly, identification is related to relational and not physical aggression. This may be attributable to the particular details of Seung-Hui's life history or it may be attributable to his identity as an indiscriminate aggressor generally. Additional research encompassing identification with various types of indiscriminate aggressors is needed in order to better generalize the current findings.

The current findings indicate differences across gender on attitudes toward the shooting and on rates of aggressive outcomes. Females reported feeling worse about hearing news of the shooting as compared to males. Males reported more physical

aggression and aggressive fantasy as compared to females. These results indicate that gender is related to rates and correlates of identification with indiscriminate aggressors.

Given the prevalence of identification with Sueng-Hui and the association between this identification, aggression, and aggression-supporting beliefs, additional research into such relations is needed. The investigation of dehumanization beliefs may help shed light on the relation between identification with indiscriminate aggressors and aggressive behavior. For example, dehumanization beliefs may be an important differentiating factor across individuals who hold positive attitudes toward mass shooters and individuals who do not hold such attitudes.

Preliminary Study 3

Development of the Dehumanization Beliefs Scale

To date there has been no empirical way to measure the extent to which an individual tends to dehumanize others. Preliminary study 3 encompassed the development and validation of a survey instrument designed to measure the degree to which an individual endorses dehumanization beliefs.

The Dehumanization Beliefs Scale is intended to measure a single construct. The total scale is organized into five component subscales: Relational Value, Value, Uniqueness, Thinking, and Transcendence. The subscales are not meant to reflect multiple underlying constructs, but instead are intended to capture the full range and richness of the concept of dehumanization beliefs. A pool of 30 items was generated based on theoretical discussions of dehumanization in the extant literature. Within research on dehumanization, no consensus exists on the ingredients of human nature (Marcu, Lyons, & Hegarty, 2007). However, several common themes run through past

theorizing on dehumanization, and the subscales of the DBS are meant to capture the most prevalent of these themes.

Relational Value. An individual's social relationships have been acknowledged as being importantly interrelated with what it means to be human throughout history. For example, the dehumanization of African American slaves in the American South involved denial of membership in the community and the regulation and restriction of slaves' social relationships (Pinn, 2003). Contemporary research on social relationships and perceptions of humanness has indicated that perceived humanness depends heavily on the quality of social relationships. For example, participating in meaningful mentoring relationships is associated with an increased perception of the humanness of students among teachers (Blase, 1986).

Perceptions of humanness can be manipulated through changes in social relationships. Bastian and Haslam (2009) found that experiencing ostracism causes people to view themselves as less human. Feelings of ostracism were manipulated differently across two experiments. In their first experiment, participants were asked to recall either a time when the experienced social inclusion or a time when they were socially ostracized. In a second experiment, feelings of ostracism were manipulated through a computer-mediated ball tossing game in which participants were excluded by other players. Following the independent manipulations in both experiments, participants then rated themselves on a variety of traits essential to possessing humanness. Participants who had undergone an ostracism manipulation rated themselves lower on essential human traits. These findings indicate that social relationships and a feeling of

connectedness with others is an essential part of what it means to perceive oneself as humanized.

The Relational Value subscale of the DBS is meant to measure the degree to which respondents value interpersonal interaction and relationships generally. Example items on the Relational Value subscale include: "There is no point in getting to know most people," "Meeting new people is bothersome and usually not worth my time," and "I don't derive much from my interactions with others."

Value. Viewing other people as having at least some inherent value is perhaps the most basic component of a humanized view of others. Conversely, viewing another person in a dehumanized way theoretically should change the perceived value of that person's life (Fletcher, 1973). The dangers of viewing someone in dehumanized terms and as a consequence also viewing their lives as being of lesser value has been discussed in writings on euthanasia and long-term nursing care (Baker, 1974; Fletcher, 1974; Hermsen & ten Have, 2002; Kampfe, 1990; Leventhal, 1975). When an individual is perceived in dehumanized terms, they may also be seen as actively contributing little to the world around them and having little latent potential to contribute to the world.

The Value subscale of the DBS is meant to measure the degree to which respondents view other people as having inherent worth. Example items on the Value subscale include: "The average person doesn't do much of importance with their life," "Most people live day to day, and don't contribute much of value to the world," and "Most people don't make much of a difference in the world".

Uniqueness. Viewing others as having unique individual characteristics and being distinct from one another is important to a humanized view of others. In order to

examine the components of a humanized view of others, Bogdan and Taylor (1989) interviewed non-disabled people who hold positive, humanized attitudes toward individuals with disabilities. They found that important components of a humanized attitude towards others included seeing others as having individuality or uniqueness. Caretakers of the disabled who tended to see disabled people as individuals also tended to perceive and be able to describe the other person's particular personality, have knowledge of the other person's likes and dislikes, and have knowledge of the person's life history. Expanding upon attitudes toward the disabled and applying the same concept to include attitudes toward all other people, the Uniqueness subscale of the DBS is meant to measure the degree to which respondents attribute unique qualities to all people generally. Example items on the Uniqueness subscale include: "Most people are not unique or original individuals," "There is not much difference between one person and the next," and "Meeting new people is just more of the same."

Thinking. Characterizing others as lacking intellectual ability is a prevalent theme in real world attempts to dehumanize others. Disparaging language has been used by political and quasi-political entities to characterize the intellect of enemy combatants during real world conflicts. Enemy combatants are sometimes described in animalistic terms in order to emphasize a lack of intellectual ability (Fromm, 1973). For example, propaganda during the 1990's described Bosnians as lacking reason (Sells, 1996) and during the Rwandan genocide described the Tutsi as cockroaches (Belman, 2004; Wax, 2003). In Nazi propaganda, a prevalent theme was discrepancies in intelligence across social groups (Fisk, 2009).

Bogdan and Taylor (1989) found that viewing others as possessing intelligence and the ability to think is an important component of a humanized attitude toward others. The researchers interviewed caretakers of the disabled, including disabled individuals who did not possess the ability to speak or otherwise communicate. Caretakers who attributed the ability to think to such disabled people were able to maintain a humanized view of the disabled individuals. The Thinking subscale of the DBS is meant to measure the degree to which respondents attribute intelligence and the ability to think to others. Example items on the Thinking subscale include: "Most people have rich inner thoughts," "Most people think carefully about important issues," and "Most people engage in judgment, planning and forethought throughout their lives."

Transcendence. The technological and material advancements that characterize the modern world are often discussed as being at odds with ethical values, the search for meaning, and a humanized view of others. Albert Einstein stated: "I believe that the horrifying deterioration of the ethical conduct of people today stems primarily from the mechanization and dehumanization of our lives- a disastrous by-product of the development of the scientific and technical mentality" (Dukas & Hoffman, 1979, p. 82). The search for and possible attainment of higher-order meaning beyond material achievements is important in many discussions of what it means to be human (Frankl, 1963). Items on the Transcendence subscale reference concepts of collective human value, value of human life beyond material things, and the value of human pursuits.

The Transcendence subscale is related to the Value subscale. The two scales differ in that Transcendence is meant to assess perceived worth on a scale larger than the individual. Example items on the Transcendence scale include: "Humans are driven

mainly by instincts, and do not integrate much meaning or purpose into their lives," "There is no point or meaning behind human existence," and "Human life has meaning or purpose that is greater than just day to day living" (reverse scored).

Methods

One goal of the current investigation is the establishment of the reliability of the DBS. Test-retest reliability will be evaluated by comparing scores on the DBS at time one to scores on the DBS at time two. The internal reliability of the DBS will be evaluated by examining the degree of correlation among responses to the DBS items.

Another goal of the current investigation is the establishment of the construct validity of dehumanization beliefs. No measure of dehumanization beliefs currently exists to serve as a criterion by which to validate the DBS, thus scores on the DBS must be compared to multiple theoretically related measures (Chronbach & Meehl, 1955). The current investigation involves 15 measures in addition to the DBS. These measures reflect constructs that theoretically overlap the construct of dehumanization beliefs.

Participants

All participants were undergraduate students at Rutgers University in Newark, New Jersey. The initial sample (N = 617) included 33% males and 67% females (*M* age = 19.90 years, *SD* = 3.98). The sample was ethnically diverse and included 17% African American, 27% Asian, 17% Hispanic, 8% Middle Eastern/Arabic, 23% White and 8% other ethnicity participants.

The follow-up sample (N = 77) included 62% females and 38% males (*M* age = 19.13 years, *SD* = 1.37). The follow-up sample was ethnically diverse and included 14%

African American, 28% Asian, 28% Hispanic, 8% Middle Eastern/Arabic, 17% White, and 5% other ethnicity participants.

Materials: Initial Study

The Dehumanization Beliefs Scale. Dehumanization beliefs were assessed using the 30-item Dehumanization Beliefs Scale that is original to this investigation. The full DBS appears in the appendix to this document. The items asked how frequently each statement describes the respondent's point of view. Participants indicated their responses using a 7-point Likert scale ranging from 1 ("describes my point of view none of the time") to 7 ("describes my point of view all of the time;" $\alpha = .92$).

Trait aggression. Trait aggression was assessed using a 29 item measure (Buss & Perry, 1992). The items asked how well examples of hostile attitudes and behavior described the participant (e.g., "I can't help getting into arguments when people disagree with me"). Participants indicated their responses using a 7-point Likert scale ranging from 1("extremely uncharacteristic of me") to 7 ("extremely characteristic of me;" $\alpha = .89$).

Need for cognition. Need for cognition was assess using an 18 item measure (Cacioppo & Petty, 1982). Items asked how much enjoyment participants derive from engaging in complex thinking tasks (e.g., "I like tasks that require little thought once I've learned them"). Participants indicated their responses using a 4-point Likert scale ranging from 1 ("completely false") to 4 ("completely true;" $\alpha = .85$).

Emotional expressivity. Emotional expressivity was assessed using the 16 item Berkeley expressivity questionnaire (Gross & John, 1995). Items assessed both the subjective experience of emotion expression as well as outward displays of emotion (e.g.,

"People often do not know what I am feeling;" "I think of myself as emotionally expressive). Participants indicated their responses using a 7-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree;" $\alpha = .85$).

Self-esteem. Self-esteem was assessed using the 10 item Rosenberg Self-esteem scale (Rosenberg, 1965). Items ask about attitudes toward the self (e.g. "I feel I have a number of good qualities"). Participants indicated their responses using a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree;" $\alpha = .91$).

Belief in a just world. Belief in a just world was assessed using the 7 item Global Belief in a Just World scale (Lipkus, 1991). Items asked how much participants agreed with statements about fairness in the world (e.g., "I feel that people get what they are entitled to have"). Participants indicated their responses using a 1-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree;" $\alpha = .82$).

Exposure to violence. Exposure to violence was measured with a 14 item scale based on the Things I have Seen and Heard scale (Richters & Martinez, 1993). Items asked about participants' experiences seeing or hearing violent events (e.g., "Have you heard guns being shot?"). Participants indicated their responses using a 5-point Likert scale ranging from 0 ("zero") to 4 ("many times;" $\alpha = .85$).

Self compassion. Self compassion was assessed with a 26 item measure (Neff, 2003). Items asked about how participants deal with things like disappointments and their own flaws (e.g., "I'm tolerant of my own flaws and inadequacies"). Participants indicated their responses using a 5-point Likert scale ranging from 1 ("almost never") to 5 ("almost always;" $\alpha = .90$).

Identification with violent media characters. Identification with violent media characters was assessed with an 8-item measure adapted from Huesmann and Eron (1986). Four of the items asked about current behavioral identification with violent media characters (e.g., "How much do you act like the character Jack Bauer (played by Keifer Sutherland) on the show *24*?"). Response choices for these items ranged from 0 indicating a lack of familiarity with the character ("I do not watch that show") to 4 ("I act just like that character;" $\alpha = .69$). The additional four items asked about wishful identification with violent media characters (e.g., "How much do you wish that you were more like the character Jack Bauer from the show *24*?"). Response choices for these items ranged from 0 indicating a lack of familiarity with the character ("I do not watch that show") to 3 ("a lot;" $\alpha = .67$).

Attachment style. Attachment style was assessed with a 5 item Relationship Questionnaire (Bartholomew & Horowitz, 1991). The first four items describe prototypes of each of the four attachment styles (secure, fearful, preoccupied, dismissive) and ask participants to rate themselves on each style. Participants indicated their responses on these times using a 7-point Likert scale ranging from 1 ("not at all like me") to 7 ("very much like me"). Participants then read the description of each style again and chose which one style best characterizes them.

Materials: Follow-up Study

Mean world beliefs. Participants completed a measure of mean world beliefs based on Zelli's (1992) persecution beliefs questionnaire. This questionnaire assessed the degree to which participants view the world as a mean, hostile place (e.g., "People are

usually out to get each other"). Participants indicated their responses using a 4-point Likert scale (1 = "never;" 4 = "frequently;" $\alpha = .87$).

Normative beliefs about aggression. Normative beliefs about aggression were assessed using a 20 item measure developed by Huesmann and Guerra (1997). The items asked how right or wrong it is to engage in various examples of aggressive behaviors (e.g., "Suppose a boy hits a girl. Do you think it's OK for the girl to hit him back?"). Participants indicated their responses using a 4-point Likert scale ranging from 1 ("It's really wrong") to 4 ("It's perfectly OK;" $\alpha = .84$).

Aggressive fantasy. Aggressive fantasy was assessed with an 18-item measure (Huesmann & Eron, 1986; Rosenfeld, Huesmann, Eron, & Torney-Purta, 1982). Items asked how frequently participants engaged in aggression-themed thinking and daydreams (e.g., "Do you sometimes imagine or have daydreams about hitting or hurting somebody that you don't like?"). Participants indicated their responses using a 4-point Likert scale ranging from 0 ("never") to 3 ("a lot or often;" $\alpha = .85$).

Depression. Depressive symptoms were assessed using Beck's 21 item depression inventory (Beck et al., 1961). Each item describes a symptom of depression including psychological (e.g., sense of failure) and physical symptoms (e.g., fatigue). Participants indicated their responses using a 4-point Likert scale ranging from 0 (e.g., "I do not feel sad") to 3 (e.g., "I am so sad or unhappy that I can't stand it;" $\alpha = .87$).

Perceived social support. Perceived social support was assessed using the 25 item Social Provisions Scale (Cutrona, 1987; Zimet et al., 1988). Items asked how much participants agreed with statements describing the availability of social support in their lives (e.g., "There are people I can depend on to help me if I really need it"). Participants

indicated their responses on a 4-point Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree;" $\alpha = .94$).

State-Trait Anger Expression Inventory-2 (STAXI-2). State anger, trait anger, and anger expression were assessed using the STAXI-2 (Spielberger, 1988, 1999). The state anger subscale is comprised of 12 items that ask about how angry the participant currently is feeling (e.g., "I am furious"). Responses for the state anger scale are indicated along a 4-point Likert scale ranging from 1 ("not at all") to 4 ("very much so;" $\alpha = .87$). The trait anger subscale is comprised of 10 items that ask about how angry the participant feels in general (e.g., "I have a fiery temper"). Responses for the trait anger scale are indicated along a 4-point Likert scale ranging from 1 ("almost never") to 4 ("almost always;" $\alpha = .72$). The anger expression subscale is comprised of 32 items that ask about participants' tendency to either express or suppress anger (e.g., "I lose my temper"). Responses for the anger expression subscale are indicated along a 4-point Likert scale ranging from 1 ("almost never") to 4 ("almost always;" $\alpha = .74$).

The follow-up component of this study also included a re-administration of the DBS and the Buss-Perry aggression questionnaire (Buss & Perry, 1992; $\alpha = .80$).

Procedure

All procedures were reviewed and approved by the institutional review board. All participants were recruited through the psychology department's subject pool. The initial study was completed in its entirety via the psychology department's R-points website as a component of the department's pre-screening survey. On this website, students can view research participation opportunities, sign up for research appointments, and participate in the department-wide pre-screening survey. The pre-screening survey included a

demographic assessment and a battery of questionnaire items comprised of the initial study measures. Students who complete the pre-screening survey earned two R-points. Students completed the survey on their own computers at self-selected times.

The follow-up portion of the study was conducted in laboratory space in Smith hall. Seventy-seven of the original 617 participants (12.5%) also participated in the laboratory follow up survey. Participants were recruited through the department's subject pool management website. On this website, the follow-up portion of the study was titled "Your Personality and Beliefs." At the time that participants signed up to participate in this portion of the study, they did not have knowledge of an association between the content of the pre-screening measures and the content of the laboratory component. Upon arriving at the laboratory space, participants were seated at private computers and completed all follow-up measures via computer. Participants completed an informed consent procedure prior to participation. Participants received two R-points in exchange for their participation in the follow-up portion of the study.

Results

Principal Analyses

Data were analyzed using the Pearson Product Moment Correlation for continuous data or t-test or ANOVA procedures for categorical data.

Reliability. An important purpose of the initial assessment of the Dehumanization Beliefs Scale (DBS) included the evaluation of the scale reliability. The reliability among individual items of the DBS was evaluated along with the test-re-test reliability of the DBS. The obtained alpha level indicates a high level of reliability among DBS items ($\alpha = .92$).

In order to assess the test-retest reliability of the DBS, 77 undergraduates completed the measure both online and in the laboratory. The number of days elapsed between time one and time two assessments ranged from 3 to 72 days (M = 37.9 days, SD = 18.0 days). The results of the test-retest reliability analysis are presented in Table 2. The total dehumanization score, Value, and Thinking subscales at time one and two were significantly correlated at the .01 level. The intercorrelations between the Relational Value and Uniqueness subscales at time one and two were correlated at the .05 level. Scores on the Transcendence subscale were not significantly correlated across both administrations, but did trend in the positive direction. One potential interpretation of the general weakness of these correlations may be the low sample size of the follow-up. Increasing the sample size should improve test-retest reliability.

The stability of total scores on the DBS was assessed by counting the number of participants who maintained their positions in either the upper or lower quartiles across times one and two. Of the 77 participants, 18% of participants remained in the upper quartile and 10% of participants remained in the lower quartile across repeated administration of the DBS. An additional approximately 32.5% of participants fell within either of the center quartiles at time one remained within either of the center quartiles at time two. However, only 2% of participants fell within a center quartile at time one remained in the same quartile at time two. Overall, approximately one third of participants remained in their original quartile. These results suggest that any given individual's DBS score will remain relatively stable, and that stability is more likely for individuals with extremely high or low DBS total scores.

Validity. The online survey allowed an opportunity to test the construct validity of dehumanization beliefs by comparing scale results to several theoretically overlapping constructs. As displayed in Table 1, individuals who tend to hold dehumanization beliefs also tend to report high levels of indicators of maladaptive psychological functioning and low levels of indicators of adaptive psychological functioning. The DBS was significantly correlated with trait aggression ($r = .30$, $p < .01$), need for cognition ($r = -.22$, $p < .01$), self-esteem ($r = -.37$, $p < .01$), self compassion ($r = -.24$, $p < .01$), current behavioral identification with violent media characters ($r = .16$, $p < .01$) and wishful identification with violent media characters ($r = .12$, $p < .01$), belief in a just world ($r = -.09$, $p < .05$), and exposure to violence ($r = .09$, $p < .05$). Only emotional expressivity was not significantly correlated with the DBS. However, the non-significant association was in the expected direction with a higher DBS score associated with less emotional expressivity.

Attachment style data are presented in Tables 4 and 5. Table 4 displays correlations among four continuous items assessing attachment style and the DBS. The tendency to dehumanize was negatively correlated with a secure style ($r = -.30$, $p < .01$) and positively correlated with fearful ($r = .22$, $p < .01$), preoccupied ($r = .20$, $p < .01$), and avoidant styles ($r = .12$, $p < .01$).

Table 5 displays the results of a series of one-way ANOVAs assessing differences in dehumanization total and subscale scores across four categories of attachment. Differences across attachment style category were found for the total dehumanization score ($F[3, 600] = 11.20$, $p < .001$, $\eta^2 = .05$), the Relational Value subscale ($F[3, 599] = 16.77$, $p < .001$, $\eta^2 = .05$), the Value subscale ($F[3, 600] = 8.92$, $p < .001$, $\eta^2 = .02$), the

Uniqueness subscale ($F[3, 599] = 4.63$, $p < .01$, $\eta^2 = .04$), the Thinking subscale ($F[3, 599] = 5.85$, $p < .01$, $\eta^2 = .03$), and the Transcendence subscale ($F[3, 600] = 4.35$, $p < .01$, $\eta^2 = .05$).

Post hoc analyses indicated that secure individuals scored significantly lower on the total scale, Relational Value and Value subscales compared to the other three styles. Secure individuals were significantly lower on Uniqueness ($M = 12.70$, $SD = 6.0$) as compared to preoccupied individuals ($M = 15.33$, $SD = 6.1$). Secure individuals ($M = 18.05$, $SD = 5.4$) scored significantly lower on the Thinking subscale as compared to both fearful ($M = 20.15$, $SD = 5.1$) and preoccupied individuals ($M = 20.10$, $SD = 6.0$). Secure individuals ($M = 13.60$, $SD = 5.0$) were also lower on the Transcendence subscale as compared to both fearful ($M = 15.03$, $SD = 5.0$) and preoccupied individuals ($M = 15.40$, $SD = 6.0$). These results indicate that the tendency to dehumanize is associated with insecure attachment styles.

The follow-up laboratory component presented an opportunity to administer additional measures to participants. The results of the correlational analyses for the follow-up variables are presented in Table 6. Trait aggression, mean world and normative beliefs scales were not significantly correlated with the DBS. However, the correlations between both trait aggression and mean world beliefs and the DBS were in the expected direction. The DBS was correlated with depression ($r = .42$, $p < .01$), aggressive fantasy ($r = .48$, $p < .01$), social support ($r = -.64$, $p < .01$), anger expression ($r = -.46$, $p < .01$) and trait anger ($r = .56$, $p < .01$). Notably, state anger correlated with the DBS at $r = .80$ ($p < .001$).

Gender Effects. Gender differences were analyzed in the initial sample. Gender differences in the correlations among the DBS and measures included in the initial study are presented in Table 3. A series of t-tests were conducted using gender as the independent variable for all dependent measures. The t-tests revealed significant differences across gender for emotional expressivity ($t[430] = 7.61$, $p < .001$, $d = .77$), exposure to violence ($t[430] = 2.40$, $p < .05$, $d = .24$), physical aggression ($t[431] = 2.72$, $p < .01$, $d = .27$), and behavioral identification with violent media characters ($t[425] = 3.36$, $p < .01$, $d = .33$). Females ($M = 56.35$, $SD = 13.46$) reported higher levels of emotional expressivity as compared to males ($M = 45.77$, $SD = 13.72$). Females ($M = 43.97$, $SD = 6.85$) also reported higher levels of exposure to violence as compared to males ($M = 42.27$, $SD = 6.96$). Males ($M = 6.71$, $SD = 2.37$) reported a greater rate of physical aggression as compared to females ($M = 6.10$, $SD = 2.07$). Males ($M = 1.92$, $SD = 2.14$) also reported more behavioral identification with violent media characters as compared to females ($M = 1.26$, $SD = 1.77$).

Gender differences were also analyzed in the follow-up sample. Gender differences in the correlations among the DBS and measures included in the follow-up study are presented in Table 7. A series of t-tests were conducted using gender as the independent variable for all dependent measures. No differences were found across gender for any of the follow-up dependent measures.

High versus Low Dehumanizers. Groups of high and low dehumanizers were created by categorizing all participants with a total DBS score of 90 or higher as high dehumanizers. All participants with a total DBS score less than 90 were categorized as low dehumanizers. Total scores on the DBS can potentially range from 7 to 210. A

score of 90 indicates an average DBS response of 3. Anchors for the DBS response scale are 1 ("describes my point of view none of the time") and 7 ("describes my point of view all of the time"). An average response of 3 indicates that dehumanizing cognitions describe the respondent's point of view over one-third of the time but slightly less than 50% of the time. Given the extremely negative content of the DBS items, endorsing a dehumanized point of view at such a rate indicates a pervasive experiencing of dehumanizing cognitions. Within the initial sample of 617 participants, 70% were categorized as low dehumanizers and 30% were categorized as high dehumanizers.

A series of independent samples t-tests were conducted to evaluate the differences across high and low dehumanizers on variables included in both the initial and follow-up study components. For measures included in the initial portion of the study, differences were found on the need for cognition, trait aggression, emotional expressivity, self-esteem, self compassion and both wishful and behavioral identification with violent media characters. High dehumanizers (M = 57.98, SD = 9.93) were lower in the need for cognition as compared to low dehumanizers (M = 61.50, SD = 11.27), $t(613) = 3.68$, $p <$ 001, d = .30. High dehumanizers (M =101.95, SD = 21.33) were higher in trait aggression as compared to low dehumanizers (M = 91.56, SD = 19.84), $t(615) = 5.83$, $p <$ .001, d = .47. High dehumanizers (M = 50.90, SD = 13.10) were lower in emotional expressivity as compared to low dehumanizers (M = 53.40, SD = 14.35), $t(616) = 2.03$, p < .05, d = .18. High dehumanizers (M = 35.52, SD = 7.64) were lower in self-esteem as compared to low dehumanizers (M = 40.28, SD = 7.18), $t(617) = 7.43$, $p < .001$, d = .60. High dehumanizers (M = 73.72, SD = 13.47) were lower in self compassion as compared to low dehumanizers (M = 79.40, SD = 15.96), $t(615) = 4.25$, $p < .001$, d = .38. High

dehumanizers (M = 1.76, SD = 2.10) reported greater wishful identification with violent media characters as compared to low dehumanizers (M = 1.38, SD = 1.86), $t(609) = 2.21$, $p < .05$, $d = .19$. High dehumanizers (M = 1.94, SD = 2.49) also reported greater behavioral identification with violent media characters as compared to low dehumanizers (M = 1.39, SD = 1.86), $t(610) = 3.05$, $p < .01$, $d = .25$.

For measures included in the follow-up portion of the study, differences were found on aggressive fantasy, perceived social support, trait anger, state anger, and anger expressivity. High dehumanizers (M = 24.37, SD = 5.12) reported engaging in more aggressive fantasy as compared to low dehumanizers (M = 19.08, SD = 5.46), $t(70) = 4.51$, $p < .001$, $d = 1.00$. High dehumanizers (M = 62.38, SD = 14.63) reported less perceived social support as compared to low dehumanizers (M = 81.54, SD = 10.73), $t(75) = 6.50$, $p < .001$, $d = 1.50$. High dehumanizers (M = 22.48, SD = 4.16) reported greater trait anger as compared to low dehumanizers (M = 17.86, SD = 4.41), $t(75) = 4.72$, $p < .001$, $d = 1.07$. High dehumanizers (M = 25.64, SD = 5.26) reported higher state anger as compared to low dehumanizers (M = 14.31, SD = 3.38), $t(75) = 10.98$, $p < .001$, $d = 2.15$. High dehumanizers (M = 47.44, SD = 7.90) reported less anger expressivity as compared to low dehumanizers (M = 59.66, SD = 12.43), $t(74) = 5.20$, $p < .001$, $d = 1.17$.

Discussion

These findings indicate that the DBS is a reliable and valid measure of dehumanization beliefs. Scores on the DBS tended to be related to theoretically overlapping constructs. The DBS showed adequate scale and test-retest reliability.

The current results provide a profile of an individual high in dehumanization beliefs. The overall pattern of findings suggests that the individual with tendencies

towards the dehumanization of others is an individual who is physically aggressive, engages in aggressive fantasy, identifies with violent media characters, and is frequently angry but does not often express anger. Also, the dehumanizer has low self esteem and self compassion, has little social support, tends to be insecurely attached, and has little need for cognition. These results suggest that the dehumanizer is a socially isolated individual with a tendency to think and behave aggressively. This is an individual dealing with frequent negative emotionality, specifically anger. Given the negative correlation between the need for cognition and the DBS, the dehumanizer is probably an individual who does not tend to engage in thoughtful deliberation. Instead, anger may be an important factor in driving the behavior and decision-making processes of the dehumanizer.

The current findings provide support for the validity of defining high and low dehumanizers using an average scale response of 3 on the DBS. Conceptually, an average response of 3 indicates endorsing dehumanization beliefs a large portion of the time. Empirically, an average response of 3 indicated differences across theoretically related constructs. Splitting the population this way was associated with significant differences across several measures. High dehumanizers and low dehumanizers differed across the need for cognition, trait aggression, emotional expressivity, self-esteem, self compassion, both wishful and behavioral identification with violent media characters, aggressive fantasy, perceived social support, trait anger, state anger, and anger expressivity. Differences across high and low dehumanizers across such a large number of related variables provides evidentiary support for using an average DBS score of 3 to split the dehumanizer status groups.

The results of the current study support a theoretical model in which anger is importantly related to holding dehumanization beliefs. The current theorized model of the development and maintenance of dehumanization beliefs involves negative affect acting as a trigger for dehumanizing cognitions. Anger specifically is theorized to trigger dehumanizing cognitions. The finding of the current study that state anger is very highly correlated with the DBS provides evidence for this model. Also, the finding that trait anger is correlated with the DBS supports the idea that the frequent experiencing of anger may be associated with the crystallization and chronic activation of dehumanizing cognitions.

Summary of Preliminary Research

Three preliminary studies on varying dimensions of aggression have yielded important implications for the study of dehumanization and indiscriminate aggression in both methodological and theoretical domains. A new measure of dehumanization beliefs was developed and piloted, mood induction procedures were tested, and attitudes toward indiscriminate aggressors were examined by asking direct questions. This previous work explored relations between aggression-supporting cognitive structures and aggressive outcomes. Building upon the three preliminary studies, dissertation studies 1 and 2 continue to explore the relation between aggression-supporting cognitive structures and aggressive behavior.

The results of preliminary studies 1 and 3 indicate that angry affect is importantly related to aggression-supporting cognitions. Episodic and trait anger are both of importance to aggressive cognitive outcomes. In preliminary study 1, the intensity of self-reported anger experienced during the mood induction procedure was associated with

aggression-supporting attitudes toward the clip. Evidence suggests that levels of particular personality traits may influence the effectiveness of mood induction techniques (e.g., Rusting, 1998; Srivastava et al., 2003). It is possible that individuals high in trait anger reported stronger angry mood induction effects and that therefore the association between intensity of anger and aggressive attitudes found in preliminary study 1 may be driven by highly temperamentally angry individuals. In preliminary study 3, anger expression was negatively correlated with dehumanization beliefs ($r = -.46$, $p < .01$). However, angry temperament ($r = .56$, $p < .01$) and state anger ($r = .80$, $p < .001$) were strongly positively correlated with dehumanization beliefs.

These observations are consistent with the current theoretical model of the development and maintenance of dehumanization beliefs. Theorized processes include: (1) the activation of dehumanizing cognitions by angry affect, (2) once dehumanizing cognitions are activated, acts of aggression will be perceived as morally acceptable and perpetrators of aggression will be perceived positively (i.e., justified). Under conditions of chronic activation of dehumanizing cognitions, dehumanization beliefs will emerge as relatively stable cognitive structures. Further investigation of dehumanization beliefs is needed to clarify relations between negative affect, dehumanization beliefs, and aggressive behavior.

The DBS provides a means of investigating the role of dehumanizing beliefs in the development of aggression and anti-social behaviors. The scale might be used to help individuals who are at risk for experiencing social difficulties. The DBS may help to identify at-risk individuals who may benefit from additional social supports.

Dissertation Study 1

The results of preliminary study 3 indicated that state anger is positively correlated with dehumanization beliefs. Preliminary study 3 also indicated that scores on the DBS are relatively stable across time. These findings suggest that dehumanization beliefs are stable, yet may be activated by negative affective episodes. This study tested the prediction that individuals high in dehumanization beliefs will exhibit an increase indiscriminately aggressive behavior following a negative mood induction.

Overview

This study was an experimental laboratory-based study. The purposes of this study were to: 1) test a behavioral measure of indiscriminate aggression, 2) examine the relation between emotion and dehumanization beliefs, and 3) to examine a link between dehumanization beliefs and indiscriminate aggression. This study represents the first behavioral measure of indiscriminate aggression.

First, it is hypothesized that in individuals high in dehumanization beliefs, experiencing either an angry or anxious mood will be associated with more indiscriminately aggressive behavior as compared to experiencing a neutral mood. A negative emotional context should act to prime indiscriminately aggressive behaviors in individuals who endorse high levels of dehumanization beliefs.

Second, it is hypothesized that in individuals low in dehumanization beliefs, experiencing an angry mood will be associated with more indiscriminately aggressive behavior as compared to experiencing a neutral mood. Experiencing an angry mood should prime indiscriminately aggressive behavior, even in individuals who endorse low levels of dehumanization beliefs. However, experiencing an anxious mood, in the

absence of aggression-supporting beliefs, is not expected to be associated with more indiscriminately aggressive behavior as compared to experiencing a neutral mood.

Finally, it is hypothesized that, within the anger mood induction condition, individuals high in dehumanization beliefs will display indiscriminate aggression at greater rates as compared to individuals low in dehumanization beliefs. Although anger is expected to be associated with indiscriminately aggressive behavior in both high and low dehumanizers, the presence of aggression-supporting beliefs is expected to augment the relation between anger and indiscriminate aggression.

Additionally, a measure of psychopathic traits will be included in this study. The purpose of this measure is to examine the relation between dehumanizer status and the callous and unemotional traits characteristic of psychopathy.

Methods

Participants

Participants (N = 187) were undergraduate students at Rutgers University in Newark, New Jersey. Participants earned 2 research point credits in exchange for their participation. All participants were recruited through the psychology department's subject pool. The participant population consisted of 37% males and 63% females. The sample was ethnically diverse, including 17.1% African American, 29.3% Asian, 17.7% Hispanic, 5.5% Middle Eastern/Arabic, 20.4% White, and 9.9% Other/Mixed Race participants. Ages of participants ranged from 18 to 57 years old (M =19.8, SD = 3.52). Of the 70 male participants, 43.3 % were high dehumanizers. Of the 116 female participants, 30.7% were high dehumanizers.

Materials

The Dehumanization Beliefs Scale. The measure of dehumanization beliefs was identical to the one employed in preliminary study 3, wherein participants responded to a 30 item questionnaire about the rate at which they endorse dehumanizing statements (α = .91).

Mood induction. The mood induction procedures used in this study were nearly identical to the procedure used in preliminary study 1. In the Velten mood induction paradigm (Velten, 1968), participants are presented with a series of fifty affectively charged statements. Each statement is presented on a computer screen for 20 seconds. Participants were instructed to read each statement aloud and that their vocal responses were being recorded via a microphone attached to a set of headphones. In reality, their responses were not audio recorded. The purpose of this deception was to ensure that the participants paid attention to the somewhat tedious mood induction. Before the first mood statement, after the 25th, and after the last, participants gave ratings of their experience of the intended mood on a 7-point Likert scale. These ratings are intended to serve as a manipulation check for the mood induction procedure. The anxiety statements used in the current paradigm were developed by the author and are original to the current study.

Callous-unemotional traits. Psychopathic traits were measured using the 24-item Inventory of Callous-Unemotional Traits (Frick, 2004; Kimonis et al., 2008). Items asked participants how well statements about callous behaviors and attitudes describe them (e.g., "I do not care who I hurt to get what I want"). Participants indicated their responses on a 4-point Likert scale ranging from 0 ("Not at all true") to 3 ("Definitely true;" α = .85).

Indiscriminate aggression paradigm. The indiscriminate aggression game is a computer-based reaction time game ostensibly played against fellow participants in real time, when in actuality the game's outcome was pre-programmed. At the outset of the game, participants were instructed that they should try to win as many trials and earn as many points as possible and that 300 points are needed to win the entire game. They were also instructed that the main objective of the game was to press the space bar as quickly as possible once a target image was presented on the computer screen. Participants were led to believe that they were competing with other players through the internet to be the first to press the space bar once the target image was displayed.

Participants played a series of 25 brief trials with varying numbers of ostensible other players. Because the outcome of the game was pre-programmed, all participants ostensibly won 10 of their trials and lost 15. At the end of a trial, participants saw "+25 points" if they won or "-25" points if they lost. Approximately half of the time that the participant won a trial, they heard a noise blast supposedly administered by another disgruntled player.

When participants lost a trial, they saw a screen displaying a message stating that another player won the trial. After a loss, participants were given a forced-choice chance to either (1) blast all other players in the current trial at a cost of 5 points or (2) blast a single, randomly chosen player at a cost of 10 points, or (3) blast no one. At that time, participants read that the number of other players in the trial that just ended was 2, 5, or 9. Dependant upon the number of other players in the trial, the participant had a 50%, 20%, or 11% chance of hitting the winner with a random blast.

The options to blast all other players and to blast one other player are associated with different point prices. The option to blast all other players is associated with a lesser and therefore more appealing price from the perspective of the player as compared to the option to blast one other player. Blasting all other players is more aggressive than blasting one other player, simply because there are a greater number of victims in the former option. The purpose of this difference in cost of blast options is to increase the likelihood that participants will choose the more aggressive option. The purpose of making the more aggressive option more likely is to increase the upper range of the rate of aggression captured by the game. Doing so avoids the potential problem of capturing only low and largely invariable rates of aggression through the current paradigm.

The indiscriminate aggression game is a non-cooperative repeated game. In cooperative games, the optimal solution is one that benefits all players (McCain, 2003). Unlike cooperative games such as two-person bargaining games (Schelling, 1960), the indiscriminate aggression game does not offer players the possibility of working together to maximize points earned during the game. In the indiscriminant aggression game, participants spend points purchasing blasts. In order for a participant to maximize points earned during the game and potentially win the game, choosing to blast no other players during every trial would be in the participants' best interest. This would amount to hoarding points while enduring intermittent noise blasts from other players. The indiscriminate aggression game places participants in a position where they have to choose between attempting to win the game by maximizing points or retaliating against other unidentified players who may or may not have blasted the participant with noise.

The indiscriminate aggression game does not offer participants the option of aggressing in a targeted, non-discriminate way. Instead, participants only have the option to either aggress in an indiscriminate way or to not aggress at all. The reason for this is that if given the chose to engage in targeted aggression versus indiscriminate aggression, rates of indiscriminately aggressive behavior could potentially be very low. The behavior of interest could potentially not be measurable.

It is assumed that the participants will not have a strong motivation to accumulate points within the game (a running tally of points is not displayed during game play). Instead, it is assumed that participants will have at least a weak motivation to accumulate points within the game, and a relatively stronger motivation to not harm other players by blasting them with noise. This imbalance is intentional and is intended to reflect the conditions of daily life. Such an imbalance within the game is meaningful given that rates of aggression, especially severe aggression, are relatively low within the population (FBI, 2008).

The severity of indiscriminate aggression that a participant engaged in is indicated by two dimensions: their blast choice (blast everyone, blast one random person, or blast no one) and the number of other players present in a trial. Participants display indiscriminate aggression both when they choose to blast all players or randomly blast one player. However, the more aggressive option of the two is to blast all other players simply because there are a greater number of victims. An additional variable built into the study design is the varying number of ostensible other players present within each trial. Choosing to blast all the other players in the game with noise when there are 9

other players in the trial will be interpreted as being more aggressive as compared to choosing to blast all the other players when there are 2 or 5 other players in the trial.

The indiscriminate aggression game yields several numbers meaningfully associated with the dependent measure. One set of meaningful outcome variables are formulated in terms of the ratio of the total number of times each of the three blast options was chosen to the total number of trials. A second set of meaningful outcome variables are formulated in terms of the ratio of the number of times any blast option was chosen over the total number of trials in which two, five, or nine other players were present in the game.

Blast all ratio. The blast all ratio variable represents the rate at which participants chose to blast all other players with noise. This variable is computed by dividing a sum of the number of times that a participant chose to blast all other players in a trial by the number of total trials. For example, if a participant chose to blast all other players during 5 of the 15 total trials, their blast ratio score would be .33. Values range from 0 to 1.

Blast one ratio. The blast one ratio variable represents the rate at which participants chose to blast one random player with noise. This variable is computed by dividing a sum of the number of times that a participant chose to blast one random player in a trial by the number of total trials. Values range from 0 to 1.

Blast none ratio. The blast none ratio variable represents the rate at which participants chose to blast no other player with noise. This variable is computed by dividing a sum of the number of times that a participant chose to blast none of the other players in a trial by the number of total trials. Values range from 0 to 1.

Total blast ratio. The total blast ratio variable represents the rate at which participants chose to blast either all other players or one random player with noise. This variable is computed by dividing a sum of the number of time that a participant chose to blast all other players or one random player by the number of total trials. Values range from 0 to 1.

Total blast ratio with two victims. The total blast ratio with two victims variable represents the rate at which participants chose to blast either all other players or one random player with noise only during trials with two other players present.
This variable is computed by dividing a sum of the number of times that a participant chose to blast all other players and one random player by the number of trials in which two other players were present in the game. Values range from 0 to 1.

Total blast ratio with five victims. The total blast ratio with five victims variable represents the rate at which participants chose to blast either all other players or one random player with noise only during trials with five other players present.
This variable is computed by dividing a sum of the number of time that a participant chose to blast all other players and one random player by the number of trials in which five other players were present in the game. Values range from 0 to 1.

Total blast ratio with nine victims. The total blast ratio with nine victims variable represents the rate at which participants chose to blast either all other players or one random player with noise only during trials with nine other players present.
This variable is computed by dividing a sum of the number of time that a participant chose to blast all other players and one random player by the number of trials in which nine other players were present in the game. Values range from 0 to 1.

Variable	Calculation
Blast all ratio.	(Total number of times "blast all" chosen)/15
Blast one ratio.	(Total number of times "blast one" chosen)/15
Blast none ratio.	(Total number of times "blast none" chosen)/15
Total blast ratio.	(Total number of times "blast all" chosen + total number of times "blast one" chosen)/15
Total blast ratio with two victims.	(Number of times "blast all" chosen in presence of two victims + number of times "blast one" chosen in presence of two victims)/15
Total blast ratio with five victims.	(Number of times "blast all" chosen in presence of five victims + number of times "blast one" chosen in presence of five victims)/15
Total blast ratio with nine victims.	(Number of times "blast all" chosen in presence of nine victims + number of times "blast one" chosen in presence of nine victims)/15

Figure 2. Calculation of indiscriminate aggression game dependent variables.

Procedure

All procedures were reviewed and approved by the institutional review board. Participants completed the Dehumanization Beliefs Scale online before participating in the laboratory component as a part of the department-wide pre-screening survey. Participants self-recruited through the R-points website and chose self-selected appointment times. Upon arriving at laboratory space in Smith hall, all participants were greeted and walked through the informed consent process by a research assistant. Participants then completed a mood induction. All participants were induced into one of

three moods: either an angry, anxious, or a neutral mood. Participants were randomly assigned to each mood condition. Following the mood induction, all subjects completed a game-based measure of indiscriminate aggression. After completing the indiscriminate aggression game, participants also completed the Inventory of Callous-Unemotional Traits. The entire laboratory component of the study was completed at a computer.

Results

Mood Manipulation Check.

Participants rated the degree to which they were experiencing their target mood three times during the mood induction procedure. In order to determine the effectiveness of the mood inductions, paired-samples t-tests were conducted comparing the first mood rating to the third mood rating within each mood condition. Within the angry condition, the results indicated that participants rated their anger level at the end of the induction (M = 3.42, SD = 2.01) as being significantly higher than their anger level at the beginning of the induction (M = 1.96, SD = 1.51), $t(52) = 5.49$, $p < .001$. Within the anxiety condition, the results indicated that participants rated their anxiety level at the end of the induction (M = 4.11, SD = 2.14) as being significantly higher than their anxiety level at the beginning of the induction (M = 2.39, SD = 1.37), $t(37) = 5.31$, $p < .001$. No significant change in neutral mood ratings was observed between the first and last ratings.

In order to explore relations between the effectiveness of the mood induction and the study's dependent measures, correlational analyses were conducted participants' reported change in mood and on all outcome measures. Change in mood was computed by subtracting participants' first mood rating from their third mood rating. For participants in the angry mood condition, change in mood was associated with the rate of

choosing to blast all other players (r = .29, p < .05), blast one player (r = .31, p < .05), blast no other players (r = -.37, p < .01), blast in the presence of two victims (r = .32, p < .05), and blast in the presence of five victims (r = .33, p < .05). Significant associations were not found among change in mood and any dependent measure for participants in the anxious and neutral conditions.

High and low dehumanizer groups

In order to create groups of high and low dehumanizers, participants were categorized based on a DBS sum score of 90. All participants scoring 90 and above were grouped as high dehumanizers. All participants scoring below 90 were grouped as low dehumanizers. The rationale for the location of the split is based on results from preliminary study 3 showing that high and low dehumanizers grouped this way differ on theoretically related variables. In the current sample, there were 136 low dehumanizers and 45 high dehumanizers. The angry condition contained 40 low dehumanizers and 19 high dehumanizers; the anxious condition contained 32 low dehumanizers and 23 high dehumanizers; and the neutral condition contained 41 low dehumanizers and 21 high dehumanizers.

Main analyses

ANOVAs on each dependent variable were conducted to determine the effect of mood condition and dehumanizer status on the 7 dependent variables. For the blast all other players ratio, there was a main effect of dehumanizer status (F[1,165] = 7.48, p < .01, $\eta^{2 =}$ .04), mood condition(F[2, 165] = 17.77, p < .001, $\eta^{2 =}$ .17), and a significant interaction(F[2,165] = 5.23, p < .01, $\eta^{2 =}$ .06). High dehumanizers (M = .32, SD = .29) tended to choose to blast all other players at a greater rate compared to low dehumanizers

(*M* = .21, *SD* = .18). Participants in the anxiety condition (*M* = .22, *SD* = .19) tended to choose to blast all other players at a greater rate compared to neutral participants (*M* = .17, *SD* = .17), but at a lesser rate as compared to angry participants (*M* = .34, *SD* = .26). Within the group of low dehumanizers only, angry participants (*M* = .27, *SD* = .20) had higher rates of choosing to blast all compared to neutral participants (*M* = .16, *SD* = .14). Within the group of high dehumanizers only, angry participants (*M* = .49, *SD* = .31) chose to blast all at a greater rate than both anxious participants (*M* = .25, *SD* = .20) and neutral participants (*M* = .15, *SD* = .16).

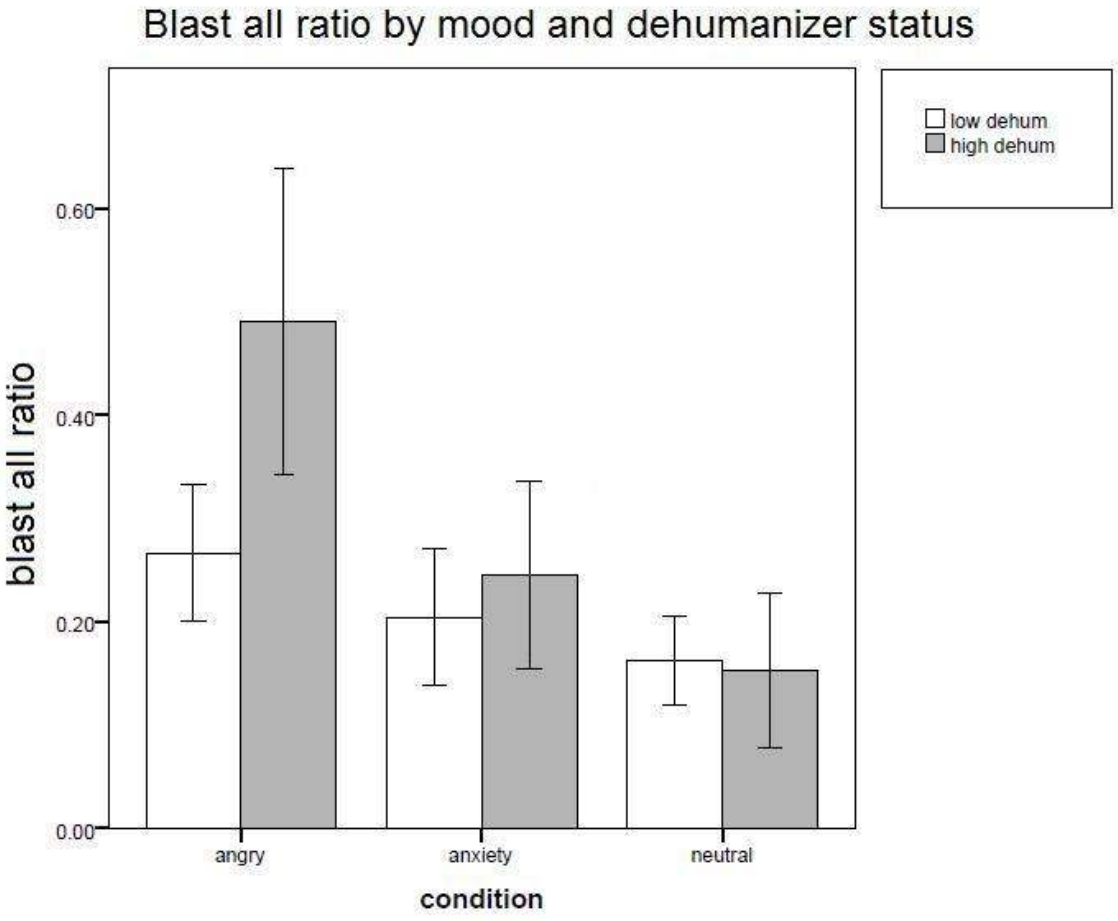

Figure 3. Effect of mood and dehumanizer status on mean blast all ratio (95% CI).

For the blast one ratio, there was a main effect of mood condition (F[2, 165] = 4.10, $p < .05$, $\eta^2 = .05$). Participants in the anxiety condition ($M = .11$, $SD = .18$) tended to choose to blast one random player at a greater rate as compared to both angry participants ($M = .08$, $SD = .11$) and neutral participants ($M = .04$, $SD = .09$).

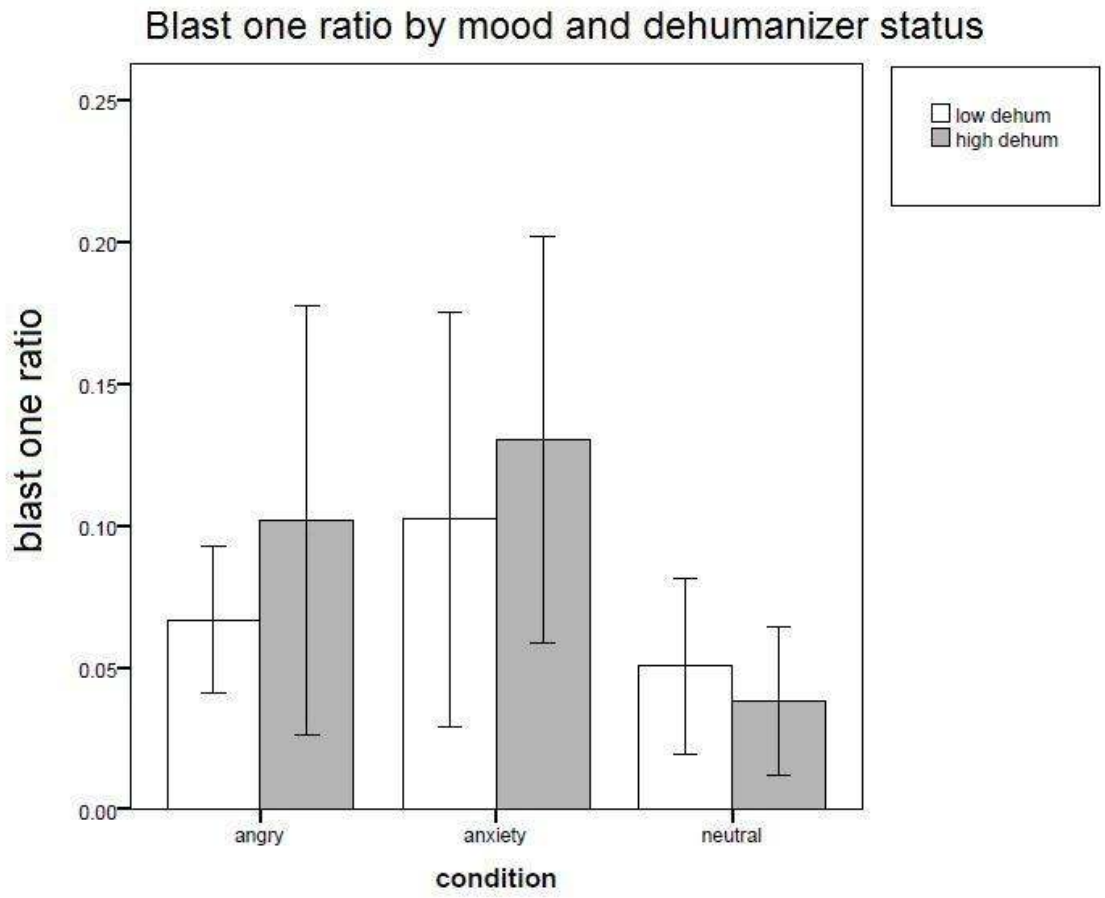

Figure 4. Effect of mood and dehumanizer status on mean blast one ratio (95% CI).

For the blast no other player ratio, there was a main effect of dehumanizer status (F[1, 165] = 6.50, $p < .05$, $\eta^2 = .04$), mood condition (F[2, 165] = 16.98, $p < .001$, $\eta^2 = .17$), and a significant interaction (F[2, 165] = 3.72, $p < .05$, $\eta^2 = .04$). Low dehumanizers ($M = .70$, $SD = .25$) tended to choose to blast no other player at a greater rate as

compared to high dehumanizers (*M* = .59, *SD* = .32). Participants in the neutral condition (*M* = .78, *SD* = .19) tended to choose to blast no other player at a greater rate compared to both anxious participants (*M* = .66, *SD* = .26) and angry participants (*M* = .55, *SD* = .31). Within the group of low dehumanizers only, neutral participants (*M* = .79, *SD* = .18) had higher rates of choosing to blast no one as compared to angry participants (*M* = .64, *SD* = .28). Within the group of high dehumanizers only, neutral participants (*M* = .80, *SD* = .17) chose to blast no one at a greater rate compared to both anxious participants (*M* = .62, *SD* = .28) and angry participants (*M* = .39, *SD* = .36).

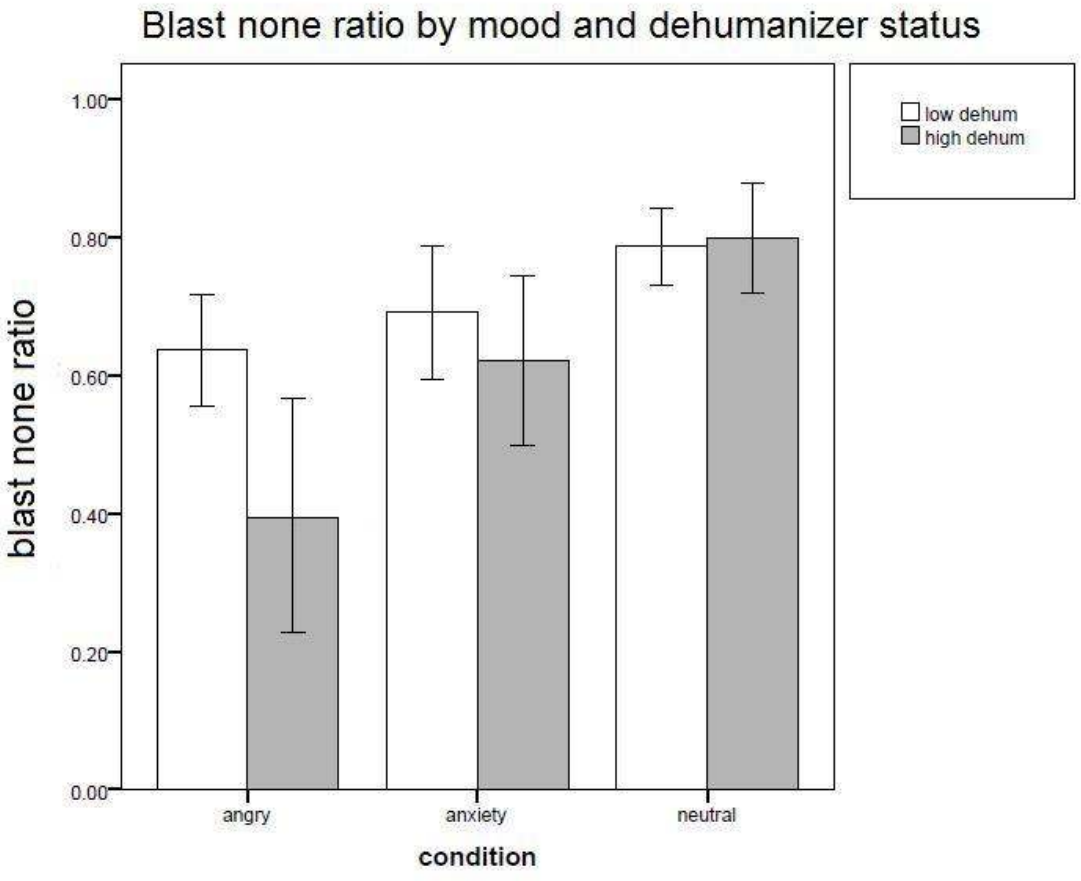

Figure 5. Effect of mood and dehumanizer status on mean blast none ratio (95% CI).

For the combined total blast ratio, which was the choice to blast either all other players or one random player, there was a main effect of dehumanizer status (F[1, 165] = 6.90, $p < .01$, $\eta^{2} = .04$), mood condition(F[2, 165] = 15.36, $p < .001$, $\eta^{2} = .16$), and a significant interaction (F[2, 165] = 4.60, $p < .05$, $\eta^{2} = .05$). High dehumanizers (M = .40, SD = .32) tended to choose to blast at a greater rate as compared to low dehumanizers (M = .29, SD = .24). Participants in the angry condition (M = .42, SD = .31) chose to blast at a greater rate as compared to anxious participants (M = .34, SD = .26) and neutral participants (M = .21, SD = .19). Within the group of low dehumanizers only, angry participants (M = .33, SD = .24) had higher rates of choosing to blast throughout the game compared to neutral participants (M = .21, SD = .18). Within the group of high dehumanizers only, angry participants (M = .59, SD = .35) chose to blast throughout the game at a greater rate than both anxious participants (M = .38, SD = .28) and neutral participants (M = .19, SD = .17).

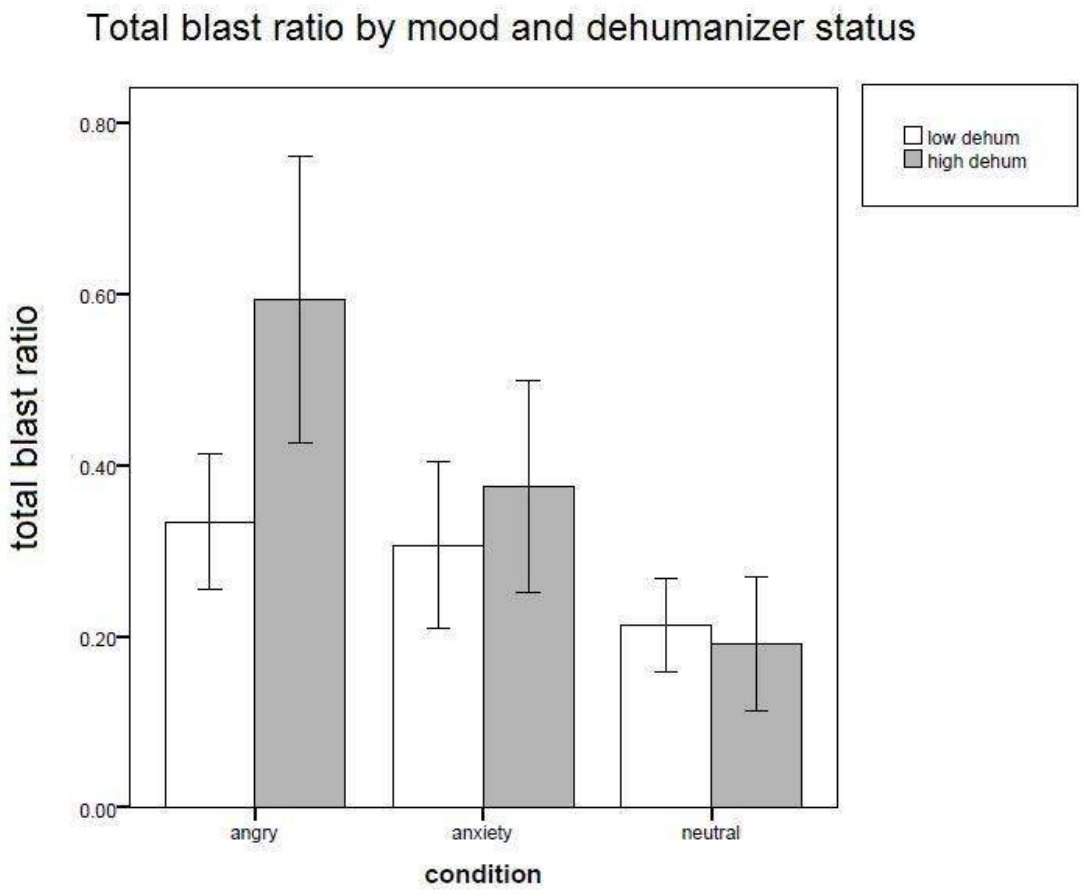

Figure 6. Effect of mood and dehumanizer status on mean total blast ratio (95% CI).

For the total blast ratio with two victims, there was a main effect of mood condition ($F[2, 165] = 10.64$, $p < .001$, $\eta^2 = .11$). Participants in the angry condition ($M = .42$, $SD = .32$) tended to blast in the presence of two victims at a greater rate as compared to participants in the neutral condition ($M = .23$, $SD = .26$).

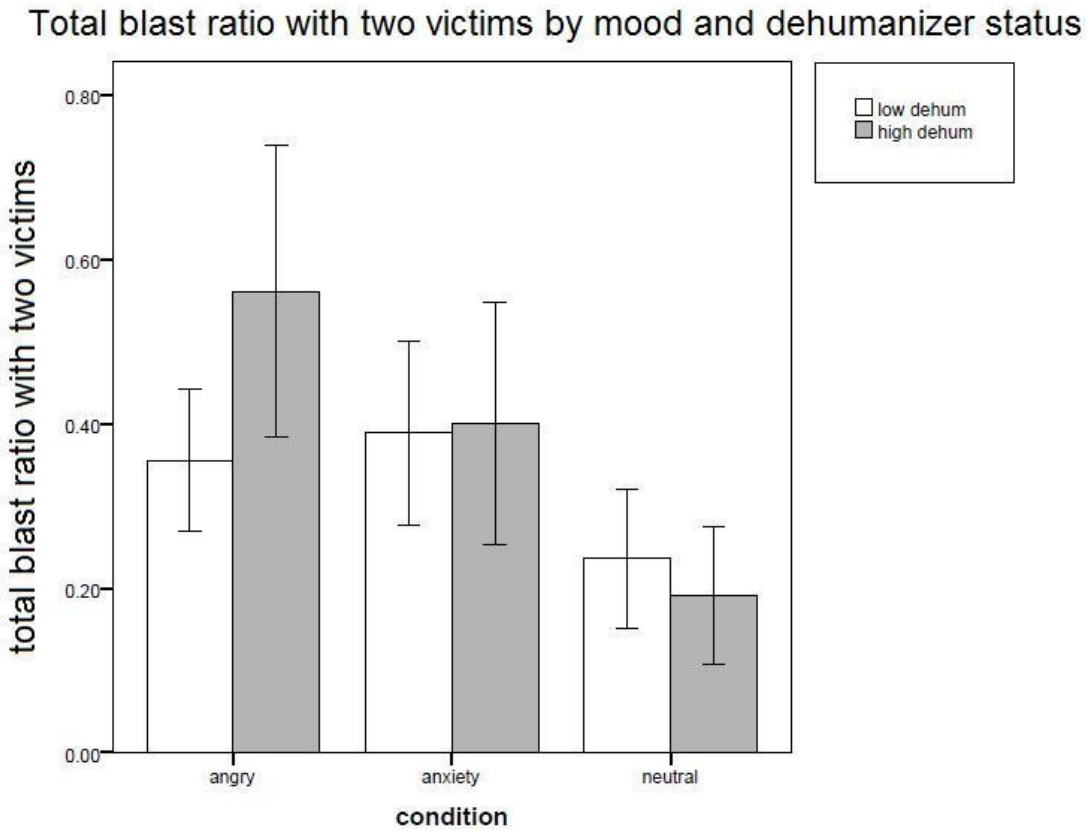

Figure 7. Effect of mood and dehumanizer status on mean total blast ratio with two victims (95% CI).

For the total blast ratio with five victims, there was a main effect of dehumanizer status ($F[1, 165] = 7.01$, $p < .01$, $\eta^{2} = .04$), mood condition ($F[2, 165] = 6.81$, $p < .01$, $\eta^{2} = .08$), and a significant interaction ($F[2, 165] = 4.04$, $p < .05$, $\eta^{2} = .05$). High dehumanizers ($M = .41$, $SD = .34$) tended to blast in the presence of five victims at a greater rate as compared to low dehumanizers ($M = .30$, $SD = .26$). Participants in the angry condition ($M = .43$, $SD = .32$) tended to blast in the presence of five victims at a greater rate as compared to both anxious participants ($M = .31$, $SD = .29$) and neutral participants ($M = .29$, $SD = .27$). Within the group of high dehumanizers only, angry participants ($M = .62$,

SD = .36) chose to blast in the presence of five players at a greater rate compared to both anxious participants (*M* = .36, *SD* = .32) and neutral participants (*M* = .28, *SD* = .26).

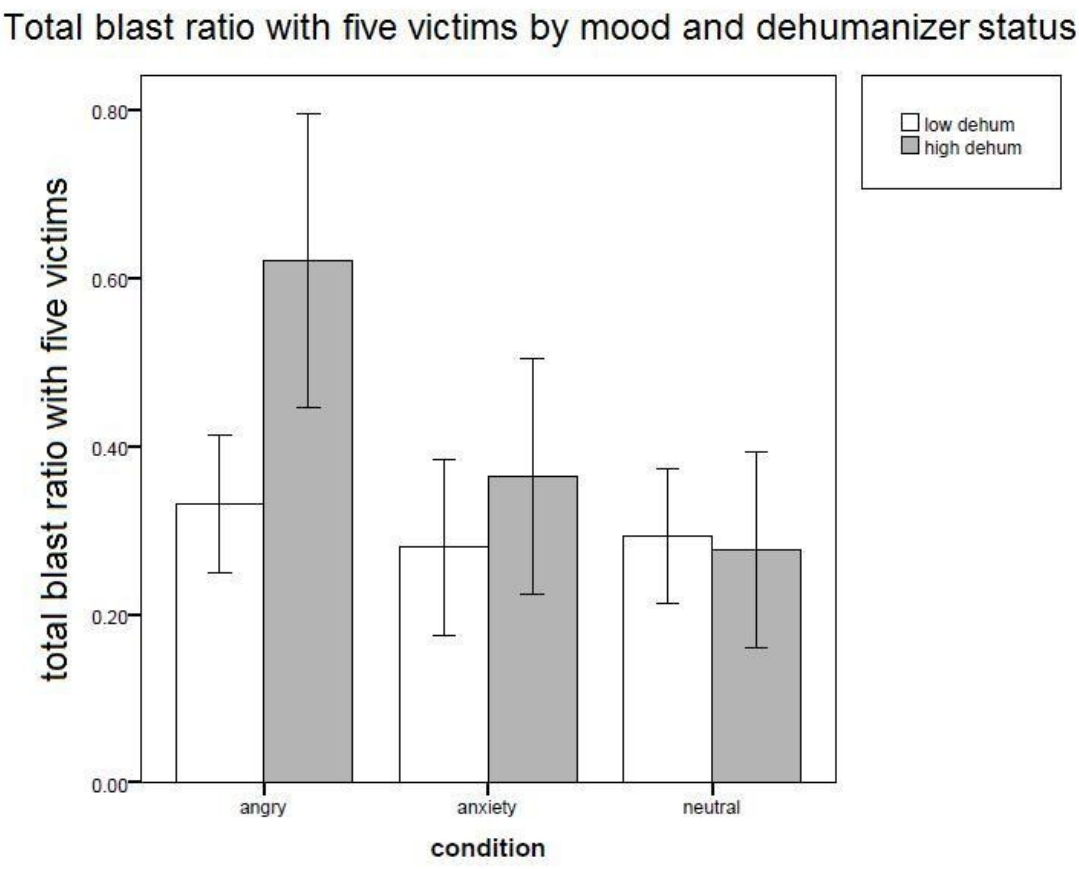

Figure 8. Effect of mood and dehumanizer status on mean total blast ratio with five victims (95% CI).

For the total blast ratio with nine victims, there was a main effect of dehumanizer status ($F[1, 165] = 8.79$, $p < .01$, $\eta^2 = .05$), mood condition ($F[2, 165] = 31.13$, $p < .001$, $\eta^2 = .27$), and a significant interaction ($F[2, 165] = 4.88$, $p < .01$, $\eta^2 = .06$). High dehumanizers (*M* = .32, *SD* = .31) tended to blast in the presence of nine victims at a greater rate as compared to low dehumanizers (*M* = .21, *SD* = .25). Participants in the angry condition (*M* = .41, *SD* = .32) tended to blast in the presence of nine victims at a

greater rate as compared to both anxious participants (*M* = .30, *SD* = .26) and neutral participants (*M* = .10, *SD* = .15). Within the group of low dehumanizers only, both angry participants (*M* = .31, *SD* = .29) and anxious participants (*M* = .26, *SD* = .27) had higher rates of choosing to blast in the presence of nine victims compared to neutral participants (*M* = .09, *SD* = .12).

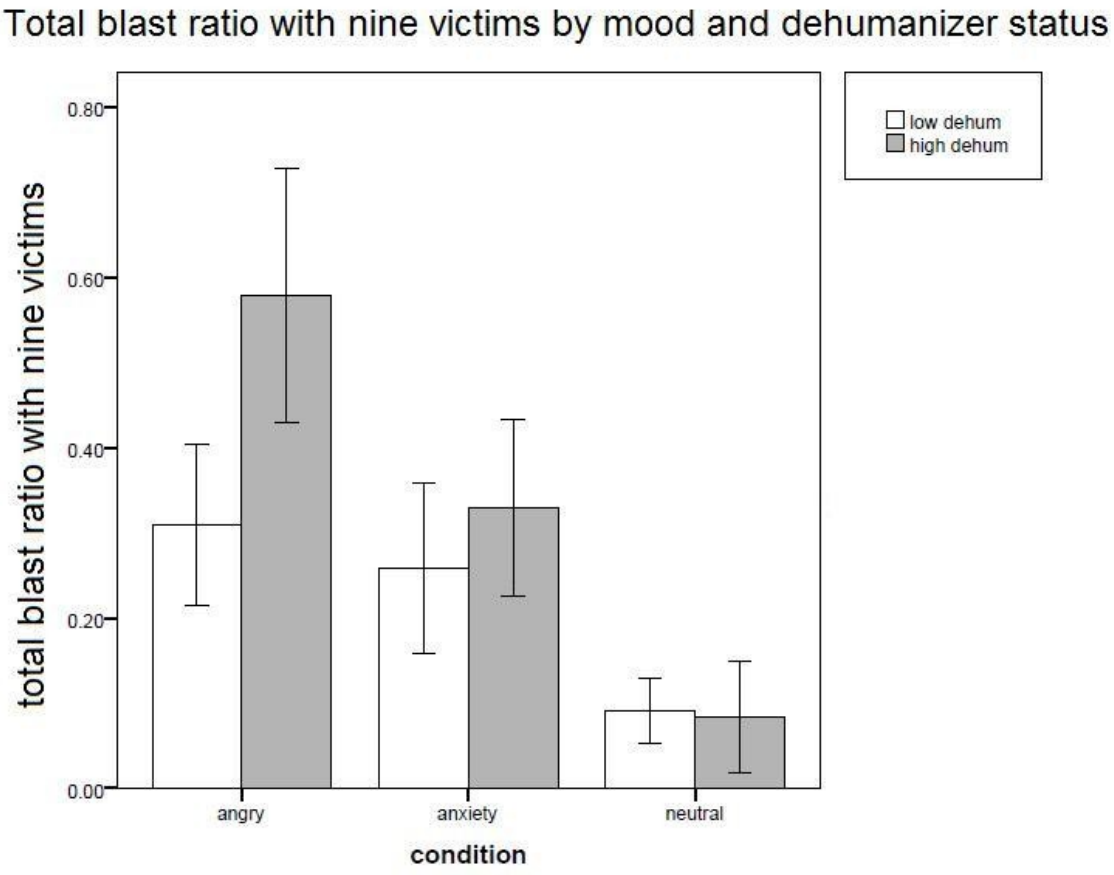

Figure 9. Effect of mood and dehumanizer status on mean total blast ratio with nine victims (95% CI).

In order to test the hypothesis that within the anger mood induction condition, individuals high in dehumanization beliefs will display indiscriminate aggression at greater rates as compared to individuals low in dehumanization beliefs, a series of t-tests

were conducted to examine differences across high and low dehumanizers within the angry condition on the indiscriminate aggression game outcome measures. Within the angry condition, high dehumanizers were more likely than low dehumanizers to blast all other players ($t[55] = 3.31$, $p < .01$, $d = .86$), choose either blast ($t[55] = 3.28$, $p < .01$, $d = .86$), and to blast two victims($t[55] = 2.43$, $p < .05$, $d = .64$), five victims($t[55] = 3.51$, $p < .01$, $d = .92$), and nine victims ($t[55] = 3.25$, $p < .01$, $d = .89$). Low dehumanizers in the angry condition were more likely than high dehumanizers to choose to blast no one ($t[55] = 3.00$, $p < .01$, $d = .79$).

In order to examine the relation between dehumanization beliefs and callous-unemotional traits, a t-test was conducted using dehumanizer status as the grouping variable and callous-unemotional traits as the dependent variable. The two groups did not differ on their levels of callous-unemotional traits.

Gender Effects

In order to test for gender effects, a series of t-tests were conducted using gender as the independent variable and DBS scores, outcomes from the indiscriminate aggression game, and callous-unemotional traits as dependent variables. Males ($M = 87.34$, $SD = 25.07$) reported higher scores on the DBS as compared to females ($M = 79.80$, $SD = 22.23$), $t(179) = 2.10$, $p < .05$, $d = .32$. No differences across gender were found for any of indiscriminate aggression game dependent variables. Also, males and females did not differ on callous-unemotional traits.

High versus Extremely Low Dehumanizers

The following analyses were conducted in order to examine differences across conceptually extreme groups of high and low dehumanizers only, omitting a middle

range of individuals who reported neither very high nor low levels of dehumanization beliefs. As in the above analyses, a group of high dehumanizers were defined as having a total DBS score of 90 or higher. This group closely corresponded with the range of the upper quartile DBS scores for this sample, which included scores of 99.5 or above. Extremely low dehumanizers were defined as having a total DBS score within the lower quartile. The lower quartile included individuals with a DBS score of 66.5 or lower. These analyses include 62 high dehumanizers and 41 extremely low dehumanizers.

High dehumanizers differed from extremely low dehumanizers across the total blast ratio and the blast no one ratio. High dehumanizers tended to choose either blast at a greater rate as compared to extremely low dehumanizers, $t(101) = 2.26$, $p < .05$, $d = .45$. Extremely low dehumanizers tended to blast no one at a greater rate as compared to high dehumanizers, $t(101) = 2.01$, $p < .05$, $d = .40$.

Differences across high and extremely low dehumanizers were also examined within each of the three mood conditions. Among angry participants, high dehumanizers chose either blast ($t(33) = 2.80$, $p < .01$, $d = .97$) and chose to blast all ($t(33) = 2.74$, $p < .05$, $d = .95$) at a greater rate as compared to extremely low dehumanizers. Also among angry participants, extremely low dehumanizers chose to blast no one at a greater rate as compared to high dehumanizers, $t(33) = 2.44$, $p < .05$, $d = .85$. Among both anxious and neutral participants, significant differences were not detected across groups of high and extremely low dehumanizers on the dependent measures.

Discussion

The goal of dissertation study 1 was to examine the relation between mood and rates of indiscriminately aggressive behavior. Past research has suggested a causal link

between anger and aggressive behavior (Berkowitz, 1993). Findings from preliminary study 3 indicated that that state anger is positively correlated with dehumanization beliefs and that scores on the DBS are relatively stable across time, suggesting that dehumanization beliefs are stable, yet may be activated by negative affective episodes. Dissertation study 1 tested the prediction that individuals high in dehumanization beliefs will exhibit an increase indiscriminately aggressive behavior following a negative mood induction.

This study made several predictions about the relations between mood and indiscriminately aggressive behavior, and how high versus low dehumanizer status may influence these relations. First, it was hypothesized that for individuals high in dehumanization beliefs, experiencing either an angry or anxious mood will be associated with increases in indiscriminately aggressive behavior as compared to experiencing a neutral mood.

The current findings support the first hypothesis regarding the relations between high dehumanizer status, anger, and indiscriminate aggression. Scores on the blast all ratio, total blast ratio, and blast no one ratio outcome measures supported the first hypothesis. For high dehumanizers, angry participants chose to blast all at a greater rate than neutral participants. Also within the group of high dehumanizers, angry participants chose to blast throughout the game at a greater rate than neutral participants. Additionally, for high dehumanizers, neutral participants chose to blast no one at a greater rate compared to angry participants. Finally, for high dehumanizers, angry participants chose to blast in the presence of five players at a greater rate compared to neutral participants. Scores on the blast one random player ratio outcome measure and

the choices to blast in the presence of two and nine players did not support the first hypothesis regarding the relations between high dehumanizer status, anger, and indiscriminate aggression.

The current findings support the first hypothesis regarding the hypothesized relations between high dehumanizer status, anxiety, and indiscriminate aggression. Within the group of high dehumanizers, neutral participants chose to blast no one at a greater rate compared to anxious participants. Also within high dehumanizers, the data indicated a non-significant trend for anxious participants chose to blast throughout the game at a greater rate than neutral participants. Scores on the blast all other players ratio outcome measure and the choices to blast in the presence of two, five and nine players did not support the first hypothesis regarding the relations between high dehumanizer status, anxiety, and indiscriminate aggression.

These findings indicate that, for high dehumanizers, anger and anxiety may be differentially associated with varying degrees of indiscriminately aggressive behavior. Within the indiscriminate aggression game paradigm, the choice to blast all other players always involves a greater number of victims as compared to the choice to blast one random player, and is therefore more severely aggressive. When angry, high dehumanizers tend to choose this more severe form of indiscriminate aggression. When anxious, high dehumanizers tend to choose to blast one random player. This pattern may be explained in the following way: if anger is a more negative emotion as compared to anxiety, then anger leads to a larger negative cognitive processing shift in high dehumanizers. Subsequently, this greater shift to negative cognitive processing leads to more severely aggressive behavior in high dehumanizers.

However, the data on the choice to blast in the presence of varying numbers of victims generally do not lend additional support to the above interpretation. If anger in high dehumanizers is associated with more severe indiscriminate aggression involving a greater number of victims, it would be expected that angry high dehumanizers would choose to blast in the presence of nine victims at a greater rate compared to anxious and neutral participants. This scenario was not supported in by the data. Instead, for high dehumanizers, angry participants chose to blast in the presence of five players at a greater rate compared to neutral participants.

An alternative to conceptualizing anger and anxiety arranged on a linear axis from more to less negative is needed in order to interpret the array of current findings. One option is to conceptualize these two negative emotional states as distinct in terms of their social functionality. Anxiety is importantly associated with social attachments. The amount of anxiety present in a social attachment is known to be associated with aggressive outcomes. For example, individuals whose maternal attachments were characterized by anxiety during childhood tend to behave in a more aggressive way during adulthood as compared to individuals who had secure maternal attachments (Smallbone & Dadds, 2000). Perhaps the association between anxiety and the choice to blast one other player within the indiscriminate aggression game can be understood as an activation of close relationship schemata. Another option in explaining the observed link between anxiety and blasting one random other player with noise is provided by the General Aggression Model. Within the GAM, the acquisition of aggressive behavioral scripts leads to increases in aggressive behavior (Huesmann, 1988). An individual's aggressive scripts may be activated by triggering features of the environment, including

emotional cues (Anderson & Bushman, 1992). Clinical symptoms of anxiety are known to be associated with aggressive behaviors (Marsee et al., 2008; Zoccolillo, 1992). Experiencing anxiety as induced within the current experimental paradigm may have functioned as such a negative emotional cue.

The second hypothesis stated that for individuals low in dehumanization beliefs, experiencing an angry mood would be associated with increases in indiscriminately aggressive behavior as compared to experiencing a neutral mood. The current findings support the second hypothesis regarding the relations between high dehumanizer status, anger, and indiscriminate aggression. Within the group of low dehumanizers, angry participants had higher rates of choosing to blast all compared to neutral participants. Also within the group of low dehumanizers, neutral participants had higher rates of choosing to blast no one as compared to angry participants. Additionally, within the group of low dehumanizers, angry participants had higher rates of choosing to blast throughout the game compared to neutral participants. Finally, within the group of low dehumanizers, angry participants had higher rates of choosing to blast in the presence of nine victims compared to neutral participants. Scores on the blast one random player ratio outcome measure and the choices to blast in the presence of two and five victims did not support the second hypothesis regarding the relations between low dehumanizer status, anger, and indiscriminate aggression.

The third hypothesis stated that, within the anger mood induction condition, individuals high in dehumanization beliefs would display indiscriminate aggression at greater rates as compared to individuals low in dehumanization beliefs. The results indicated that, within the angry condition, high dehumanizers differed from low

dehumanizers in the expected direction on the choice to blast all other players, the choice to blast no other players, choosing either blast throughout the game, and blasting two, five, and nine victims throughout the game. Differences were not found across high and low dehumanizers on the choice to blast one random player. These results support the idea that high dehumanizers, when angry, engage in indiscriminately aggressive behavior at a greater rate as compared to low dehumanizers.

Theorists have proposed that a dehumanized view of others is related to changes in affective and behavioral processes (Bar-Tal, 1990; Opotow, 1990; Staub,1989). The current findings help to outline the links between a dehumanized view of others and negative affectivity and aggressive behavior. In general, the results of the current study provide evidence that holding dehumanization beliefs is associated with indiscriminate aggression. High dehumanizer status, negative affect, and the combination of the two are associated with indiscriminately aggressive behavior.

Past research on associations between dehumanization and negative emotions has been inconsistent. Past research has found no relation between dehumanization and guilt (Castano & Giner-Sorolla, 2006; Zebel et al., 2008). However, researchers have found relations between dehumanization and disgust (Harris & Fiske, 2006; Hodson & Costello, 2007). Given the current findings that rates of indiscriminately aggressive behavior vary by dehumanizer status and mood, the current investigation provides support for the idea that emotional processing may indeed be importantly related to the relation between a dehumanized view of others and aggressive behavior.

Differences across high and extremely low dehumanizers were detected within the full sample on the choice of either blast and the choice to blast no one. However, when

these data were analyzed separately across the three mood conditions, differences across high and extremely low dehumanizers remained only for angry participants. No differences across high and extremely low dehumanizers were detected among participants in the anxiety or neutral mood induction conditions. Apparently, differences across high and extremely low dehumanizers were driven by the angry mood induction. These findings were replicated in dissertation study 2 insofar as no differences were detected across groups of high and extremely low dehumanizers when participants did not undergo an angry mood induction.

Finally, this investigation provided evidence that callous-unemotional traits do not differ across groups of high and low dehumanizers. Callous-unemotional traits are essential characteristics of psychopathy (Cleckley, 1976). Callous-unemotional traits include a lack of guilt and a diminished experience of empathy (Hare, 1993). The mechanisms underlying aggression in psychopathic and non-psychopathic populations may differ (Lykken, 1995). Though psychopaths and high dehumanizers are expected to be similar on measures of antisocial and aggressive behaviors, the populations are expected to differ in their style of emotional processing. The current findings support the notion that high dehumanizers do not experience the blunting of negative emotions typical of psychopaths.

Dissertation Study 2

Dissertation study 1 tested the prediction that individuals high in dehumanization beliefs will exhibit more indiscriminately aggressive behavior following a negative mood induction as compared to their counterparts who have not undergone a negative mood induction. Building upon this, the purpose of dissertation study 2 was to test the

prediction that high dehumanizers will spontaneously exhibit higher levels of indiscriminate aggression as compared to low dehumanizers. Dissertation study 2 examines whether the relation between dehumanizer status and indiscriminate aggression exists outside of a negative emotional context. Data comparing the rate of indiscriminately aggressive behavior across groups of high and low dehumanizers who have not undergone a negative mood induction were generated within the neutral mood condition of dissertation study 1. However, the sample size within dissertation study 1's neutral condition was relatively small ($N = 64$). Dissertation study 2 contains data from a larger sample on rates of indiscriminately aggressive behavior from groups of high and low dehumanizers. Dissertation study 2 is a quasi-experimental study.

Overview

This study was a quasi-experimental laboratory-based study. The purposes of this study were to: 1) build upon the examination of the link between dehumanization beliefs and indiscriminate aggression begun in dissertation study 1, and (2) to examine the relative rates of indiscriminate aggression across groups of high and low dehumanizers. It is hypothesized that individuals high in dehumanization beliefs will display higher rates of indiscriminate aggression as compared to individuals low in dehumanization beliefs.

Dissertation study 1 provided evidence that high dehumanizers tend to engage in indiscriminate aggression at a greater rate as compared to low dehumanizers. However, the entire sample in dissertation study 1 underwent a mood induction procedure, and two thirds of the sample in dissertation study 1 underwent a negative mood induction. Dissertation study 2 captures a relatively larger sample of participants who have not undergone a mood induction.

Additionally, a measure of trait aggression will be included in this study. The purpose of this measure is to examine the relation between dehumanizer status and self-reported aggressiveness.

Methods

Participants

Participants (N = 260) were undergraduate students at Rutgers University in Newark, New Jersey. Participants earned 2 research point credits in exchange for their participation. The sample was racially/ethnically diverse (12.4% African American, 25.2% Asian, 23.1% Caucasian, 22.3% Hispanic, 9.1% Middle Eastern, 8% other). The participant population consisted of 43% males and 57% females. Participants ranged in age from 18 to 56 (M = 20.30, SD = 3.61). Eleven participants did not provide data on their gender. Of the 107 male participants, 36.6 % were high dehumanizers. Of the 142 female participants, 26.9% were high dehumanizers.

Materials

The Dehumanization Beliefs Scale. The measure of dehumanization beliefs was identical to the one employed in preliminary study 3 and dissertation study 1, wherein participants responded to a 30 item questionnaire about the rate at which they endorse dehumanizing statements (α = .92).

Trait aggression. Trait aggression was assessed using a 10 item short form of the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992). The items asked how well examples of hostile attitudes and behavior described the participant (e.g., “I can’t help getting into arguments when people disagree with me”). Participants indicated their

responses using a 7-point Likert scale ranging from 1 ("extremely uncharacteristic of me") to 7 ("extremely characteristic of me;" α = .87).

The indiscriminate aggression game. The indiscriminate aggression game was identical to the one employed in dissertation study 1, wherein participants played a reaction time game and had the chance to blast other players with an unpleasantly loud noise.

Procedure

All procedures were reviewed and approved by the institutional review board. As in dissertation study 1, participants completed the Dehumanization Beliefs Scale online before participating in the laboratory component as a part of the department-wide pre-screening survey. Additionally, participants also completed a measure of trait aggression within the online pre-screening survey. Upon arriving at laboratory space in Smith hall, all participants were greeted and walked through the informed consent process by a research assistant. Then all participants completed the same game-based measure of indiscriminate aggression used in dissertation study 1. Also as in dissertation study 1, the entire laboratory component of the study was completed at a computer.

Results

Participants with an average response of 3 or higher on DBS items were classified as high dehumanizers. All other participants were classified as low dehumanizers. Creating dehumanizer status groups in this way resulted in 72 high dehumanizers and 158 low dehumanizers in the sample.

A series of independent samples t-tests were conducted using dehumanizer status as the independent variable. High dehumanizers (M = .49, SD = .31) displayed higher

rates of choosing either blast throughout the game as compared to low dehumanizers (M = .40, SD = .28), $t(228) = 2.15$, $p < .05$, $d = .30$. High dehumanizers (M = .39, SD = .26) displayed higher rates of choosing to blast all other players as compared to low dehumanizers (M = .31, SD = .25), $t(228) = 2.01$, $p < .05$, $d = .29$. Low dehumanizers (M = .60, SD = .28) displayed a higher rate of choosing to blast no other player as compared to high dehumanizers (M = .51, SD = .31), $t(228) = 2.51$, $p < .05$, $d = .30$. High dehumanizers (M = .48, SD = .35) displayed a higher rate of choosing to blast in the presence of two victims as compared to low dehumanizers (M = .36 SD = .30), $t(228) = 2.80 p < .01$, $d = .39$. No differences were found across high and low dehumanizers in the rate they chose to blast one random player, the rates they chose to blast in the presence of either five or nine victims, or on trait aggression.

Correlational analyses were conducted in order to examine the relation between trait aggression and the outcome measures from the indiscriminate aggression game. The measure of trait aggression was not significantly correlated with any of the 7 outcome measures from the indiscriminate aggression game.

A series of regression analyses were conducted to examine the interactive effect of DBS score and level of trait aggression on the indiscriminate aggression game outcome measures. Both continuous DBS score and Buss-Perry Aggression Questionnaire score were entered in step one of the regression. An interaction term calculated by multiplying these two values was entered in step two of the regression. Separate regression analyses were conducted using each of the 7 indiscriminate aggression game outcome measures as dependent variables. These analyses did not

indicate a significant interaction between dehumanization beliefs and trait aggression for any dependent measure.

Gender Effects

A series of independent samples t-tests were conducted using gender as the independent variable and DBS score and all indiscriminate aggression outcome variable and trait aggression as dependent variables. No differences across gender were detected for any of the indiscriminate aggression outcome variables. Males participants (M = 23.75, SD = 7.94) reported higher levels of trait aggression as compared to female participants (M = 26.15, SD = 7.10), $t(147) = 1.95$, $p < .05$.

High versus Extremely Low Dehumanizers

The following analyses were conducted in order to examine differences across conceptually extreme groups of high and low dehumanizers only, omitting a middle range of individuals who reported neither very high nor low levels of dehumanization beliefs. As in the above analyses, a group of high dehumanizers were defined as having a total DBS score of 90 or higher. This group closely corresponded with the range of the upper quartile DBS scores for this sample, which included scores of 94 or above. Extremely low dehumanizers were defined as having a total DBS score within the lower quartile. The lower quartile included individuals with a DBS score of 62 or lower. These analyses include 72 high dehumanizers and 64 extremely low dehumanizers. Significant differences were not detected across groups of high and extremely low dehumanizers on the dependent outcomes.

Discussion

The goal of dissertation study 2 was to examine the relation between dehumanizer status and rates of indiscriminately aggressive behavior. The results of the current study indicate that high dehumanizers tend to behave in an indiscriminately aggressive way at a greater rate compared to low dehumanizers, even in the absence of negative mood. High dehumanizers differed in the expected direction from low dehumanizers on the choice to blast all other players, blast no other players, choosing either blast throughout the game and choosing to blast in the presence of two victims. These results support the hypothesis that high dehumanizers would spontaneously exhibit higher levels of indiscriminate aggression as compared to low dehumanizers.

Seemingly contradictory findings emerged in the analyses of low dehumanizers versus extremely low dehumanizers. When differences across high and low dehumanizers were examined, differences across the choice of either blast, blasting all other players, and blasting no other player were detected. However, when differences across high and extremely low dehumanizers were examined, no differences across any dependent variable were detected. One explanation for why extremely low dehumanizers did not differ from high dehumanizers on the dependent outcomes is that the narrow criterion used to define extremely low dehumanizers combined with the relatively small number of extremely low dehumanizers included in the analyses resulted in a restricted range of dependent scores. Under conditions of restricted sampling, two variables that are related in the broader population may appear unrelated (Wiberg & Sundstrom, 2009). Perhaps, when conducting these analyses with a more representative sample of extremely low dehumanizers, differences across high and extremely low dehumanizers would be detectable on indiscriminate aggression measures.

The current findings are important because they provide evidence that the relation between dehumanizer status and indiscriminate aggression is not dependent upon a negative emotional context. Indeed, these results support the idea that no triggering event is needed for high dehumanizers to behave in an indiscriminately aggressive way. Instead, the results indicate that high dehumanizers engage in relatively higher rates of indiscriminately aggressive behavior regardless of emotional context. However, compared to severe acts of indiscriminate violence such as random shootings, the behavior captured by the indiscriminate aggression game captures low levels of indiscriminate aggression. Further research is needed to determine whether dehumanizer status is related to more severe acts of indiscriminate aggression outside of a triggering emotional context.

The current results along with the findings from dissertation study 1 indicate that males and females do not differ in their rates of engaging in indiscriminately aggressive behavior. This is surprising given reliably obtained findings that males tend to be more physically and verbally aggressive (for a meta-analytic review, see Hyde, 1984). Additionally, males reported higher levels of trait aggression as compared to females in the current study. Perhaps features of the indiscriminate aggression game paradigm influenced one gender's aggressive responses. Perhaps females, who are generally expected to engage in lower levels of aggression, felt free to aggress in the abstracted interpersonal context of the game. On the other hand, perhaps males tended to feel disengaged within the game setting and therefore tended to aggress at lower than characteristic levels. The current data are unable to speak to why the lack of gender differences in aggressive behavior were obtained.

Surprisingly, levels of trait aggression were not related to the aggressive outcome measures from the indiscriminate aggression game. Instead, non-significant trends in the expected directions were observed. These findings provide some evidence that indiscriminate aggression is a unique type of aggression. However, the lack of observed relation between trait aggression and the indiscriminate aggression measures suggest low convergent validity of the indiscriminate aggression game outcomes. Perhaps the computer-mediated nature of the indiscriminate aggression game provided a context for people who do not normally engage in aggression to feel comfortable doing so. Future research on indiscriminate aggression may benefit from a measurement paradigm that is not characterized by computer-mediated behavioral assessment.

Because dehumanizer status is a quasi-independent variable, limited causal claims can be drawn about the causal influence of dehumanizer status from the results of both dissertation studies 1 and 2. Although the results of both studies indicate a relation between dehumanizer status and rates of indiscriminate aggression, it cannot be asserted with certainty that high dehumanizer status causes increases in indiscriminate aggression. Additional research in which dehumanizing cognitions are manipulated is needed to determine the causal relation between viewing others in a dehumanized way and indiscriminate aggression.

General Discussion

The three preliminary studies and two dissertation studies described above encompass methodology and theory that build upon past research while making novel contributions to the understanding of aggression. This research has contributed an original measure of dehumanization beliefs (the Dehumanization Beliefs Scale), an

original behavioral measure of indiscriminate aggression, as well as a novel application of Velten mood induction procedures to anxiety. Important theoretical contributions of this work include a novel psychological construct (dehumanization beliefs) and a re-conceptualization of apparently random aggression under the rubric of indiscriminate aggression. Important outcomes of this research include the pilot testing and validation of the DBS, the examination of the correlates of identification with indiscriminate aggressors, the examination of the relation between anger and aggression-supporting cognitions, and the examination of relation between dehumanization beliefs and aggression. The ultimate goal of this program of research is the understanding and prevention of aggression.

Dehumanization

The current research focuses in part on dehumanization, a term that has been applied broadly to any behavior that an individual executes with the intention of denying full human status to another person (e.g., Haslam, 2006; Harris & Fiske, 2006). In order to capture the cognitive components of dehumanization, the current research employs the construct of dehumanization beliefs operationalized as the Dehumanization Beliefs Scale. Dehumanization beliefs, defined as the tendency to think of all or most other people as less than fully human, are a novel construct original to the current dissertation. The current work examined several essential properties of dehumanization beliefs. This dissertation research has shown that dehumanization beliefs are relatively stable within individuals across time, are related a variety of measures of maladaptive psychological functioning, and are related to anger and trait aggression. Importantly, this dissertation

research has also shown that dehumanization beliefs are related to acts of aggressive behavior in which the victim's identity is not fully known to the perpetrator.

Thinking of others in a dehumanized way has long been theorized to be related to maladaptive cognitive and emotional functioning as well as to aggressive behavior. Dehumanization has been proposed as working to weaken inhibitions on aggression (Diener, 1977). Dehumanization has also been cited as an influence in reducing empathy for the suffering of others (Halpern & Weinstein, 2004). Perhaps most significantly, dehumanization has long been posited as a cause of violence (Bernard, Ottenberg & Redl, 1965; Chirot & McCauley 2006; Kelman 1973). This research has shown that a dehumanized view of others is related to aggressive behavior. For example, both dissertation studies 1 and 2 indicated that individuals with higher scores on the Dehumanization Beliefs Scale tend to blast other people with unpleasantly loud noise at a greater rate compared to individuals with lower scores.

The current work represents the first time that the phenomenon of dehumanization has been conceptualized in terms of belief. Conceptualizing dehumanization in this way allows for the examination of stable, measurable individual differences in the tendency to engage in dehumanizing cognitions. Some of the past work on dehumanization has focused on situational factors that cue individuals to think and behave in dehumanizing ways (e.g., Turner et al, 1975). A context-limited conceptualization of dehumanization does not account for stable individual differences in the tendency to dehumanize. For example, the context-limited view of dehumanization is unable to account for which individuals might be most likely to dehumanize others regardless of the situation. The

belief-centric view of dehumanization, on the other hand, accounts for stable individual differences as well as the activating role of contextual factors.

The Dehumanization Beliefs Scale

The current research encompasses the development and validation of a new measure, the Dehumanization Beliefs Scale. Preliminary study 3 assessed the reliability and construct validity of the DBS. Dissertation studies 1 and 2 further assessed the reliability and validity of the DBS and examined the relation between scores on the DBS and a behavioral measure of aggression.

In preliminary study 3 and dissertation studies 1 and 2, the DBS exhibited high internal consistency, with Chronbach's alphas over .9 in each study. Preliminary study 3 provided an opportunity to examine the convergent and discriminant validity of the DBS. The DBS tended to be positively correlated with measures indicating psychological maladaptation (e.g., trait anger) and negatively correlated with measures of adaptive psychological functioning (e.g., self-esteem). Dissertation studies 1 and 2 added additional evidence for the convergent and discirminant validity of the DBS. In these studies, higher scores on the DBS were associated with increases in aggressive behavior (e.g., blasting others with noise) and inversely associated with prosocial behavior (e.g., choosing to not blast others with noise).

The DBS in preliminary study 3 provided a profile of the individual dehumanizer. Preliminary study 3 revealed that individuals who frequently experience dehumanizing cognitions also tend to: be physically aggressive; engage in aggressive fantasy, identify with violent media characters, frequently experience anger; infrequently express anger; have low self esteem and self compassion; have little social support; be insecurely

attached; and have little need for cognition. Dissertation studies 1 and 2 indicated that the rates of indiscriminately aggressive behavior are associated with holding dehumanization beliefs. In general, the current research has shown that an individual who holds dehumanization beliefs tends to be at risk for a range maladaptive psychological and behavioral outcomes.

The DBS is the first empirical way to measure the extent to which an individual tends to dehumanize others. The DBS is brief, inexpensive to use, and easy to administer. The DBS has shown adequate levels of reliability and validity, and therefore is a tool that may be useful in a diverse range of future research.

Indiscriminate Aggression

Indiscriminate aggression is a real problem with many real world consequences. Indiscriminate aggression has been documented in many real world conflicts throughout history. This type of aggression is particularly important to current trends in terrorist attacks (Martin, 2003). Real world indiscriminate attacks affect many lives and are capable of being responsible for large scale damage (e.g., Hastings, 2008; Ricks, 2006). Though indiscriminate attacks can be counted among some of the most vicious in the world, the construct of indiscriminate aggression lends itself to empirical study if measured using a laboratory analog task. In dissertation studies 1 and 2, indiscriminate aggression was assessed using a noise blast paradigm. Noise blast paradigms are commonly used in laboratory studies on aggression (e.g., Bushman et al., 1995).

Theorists have long proposed that a dehumanized view of others will be related to increases in aggressive behaviors (e.g., Bandura et al., 2001; Gibson & Haritos-Fatouros, 1986). However, the current investigation represents the first time that dehumanization

has been discussed in relation to indiscriminate aggression. Given the unique psychological attributes of dehumanization beliefs, particularly that an individual who holds dehumanization beliefs tends to see all other people as less than fully human, a goal of the current investigation was to examine the relation between holding dehumanization beliefs and engaging in indiscriminate aggression. Within in the GAM framework, proximal affective and cognitive factors are strong influences on behavioral outcomes. The GAM proposes that engaging in aggression-related cognitions should lead to a greater likelihood of engaging in aggressive behaviors. Following this logic, if an individual engages in aggression-related cognitions with the specific theme that all other people are less than human, this should be associated with a greater likelihood of engaging in aggression against others generally. Given that dehumanization beliefs encompass the ideas that people and relationships are of little value and that there is little difference between one person and the next, aggressing against an unknown or haphazardly selected target fits into the GAM framework of the development and maintenance of aggressive behavior.

The current research adds to extant investigations into aggressive behavior by building from and expanding upon the GAM. The current work represents a novel application of the GAM framework to a relation between an aggression-supporting beliefs and a type of aggressive behavior that has not previously been accounted for by past theory or research.

The Indiscriminate Aggression Game

The current research encompasses a novel laboratory measure of indiscriminately aggressive behavior. The use of the indiscriminate aggression game in dissertation

studies 1 and 2 represents the first time that indiscriminately aggressive behavior has been examined within a laboratory paradigm.

As dissertation studies 1 and 2 indicate, participants frequently choose to forego point accumulation within the game and instead choose to indiscriminately aggress. For example, in dissertation study 1, within the whole sample, participants chose one of the two blast options 32% of the time. Additionally, in dissertation study 2, within the whole sample, participants chose one of the two blast options 42% of the time. The current findings indicate that indiscriminately aggressive behavior can be observed in the laboratory.

Identification with Indiscriminate Aggressors

The current research represents the first assessment of the rates and correlates of identification with an indiscriminate aggressor. Cho Seung-Hui perpetrated one of the largest one-man mass killings of civilians in recent American history. A major goal of preliminary study 2 was to gauge reactions to this event by asking about identification with Seung-Hui.

The results of preliminary study 2 revealed that nearly a fifth of respondents had imagined being Seung-Hui. Smaller numbers of participants also reported wishing they were like or believing they are currently like Seung-Hui, perceiving his actions as justifiable, and being glad when hearing reports of the shootings. The results of preliminary study 2 also identified correlates of identification with Seung-Hui. These findings support the idea that identification is related to aggressive outcomes, relationally aggressive behavior, aggressive fantasies, and holding mean world beliefs.

These results replicate the previous findings that identification with both fictional and real-world aggressors is associated with aggressive outcomes. This research adds to previous work by examining identification with a particular type of aggressor, an indiscriminate aggressor. Additional research is needed to determine whether individuals who identify with indiscriminate aggressors are at increased risk of behaving in indiscriminately aggressive ways. The indiscriminate aggression game provides an opportunity to test the relation between identification with indiscriminate aggressors and indiscriminately aggressive behavior.

Anger and Aggressive Cognitions and Behavior

Preliminary studies 1 and 3 provided new evidence for the idea that angry affect is associated with aggression-supporting cognitions. Past research has indicated that anger is importantly related to aggressive cognitions. For example, Bryant and Zillman (1979) found that anger is related to adopting the intent to retaliate against others in a provoking situation. Less previous work is available about how anger might influence the perception of violent media, or about the relation between anger and the tendency to view others in a dehumanized way. Preliminary studies 1 and 3 provided new information about the relation between anger and cognitive processing.

Preliminary study 1 indicated that the intensity of anger experienced by participants was associated with an increased perception of the justification of the violent acts portrayed in the clip, an increased perception of the realism of the events of the clip, and increased liking for the protagonist of the clip. These findings indicate that feeling angry can have an effect on the way individuals think about violent events. These findings have implications for both fictional media violence and real-world violence.

Past research on the effects of viewing violent media support the idea that exposure to violent media causes an increase in aggressive behavior and cognitions (Anderson et al., 2003; Bushman & Huesmann, 2006; Paik & Comstock, 1994). The media violence effects research has identified moderators of this causal relation (e.g., Huesmann & Eron, 1986). Given the findings of preliminary study 1, a potential future area of inquiry within media effects research might be the examination of the moderating role of emotional state on the relation between viewing violent media and thinking and behaving aggressively. Perhaps under conditions of increasingly negative mood, exposure to media violence may have a stronger effect on aggressive outcomes. Further research is needed in order to test this possibility.

The finding in preliminary study 1 that the degree of reported anger is associated with increased positive attitudes toward a violent clip might be driven by individuals with tendencies to both become easily angered and who view violence events positively regardless of their mood. Personality traits may influence the effectiveness of mood inductions (e.g., Rusting, 1998; Srivastava et al., 2003). These individuals may have generally hostile dispositions as well as difficultly regulating their negative moods. There is evidence that media violence effects are moderated by the individual's level of trait aggressiveness (Bushman, 1995). It may also be the case that individuals predisposed to experience negative, especially hostile, emotionality may also be at increased risk for experiencing the effects of media violence. However, additional research is needed in order to test this proposition.

Preliminary study 3 indicated that both state and trait anger are positively correlated with dehumanization beliefs, and that anger expression is negatively correlated

with dehumanization beliefs. These findings provide important support for the theorized model of the development and maintenance of dehumanization beliefs. These findings add key elements to the profile of the individual dehumanizer. Theorized processes in the proposed model of the development and maintenance of dehumanization beliefs include the activation of dehumanizing cognitions by angry affect. According to the model, both state and trait anger are expected to be associated with dehumanization beliefs. The current findings strongly support a key element of the theorized model. The finding that anger expression is inversely associated with dehumanization beliefs adds an additional dimension to the theorized model. Perhaps frequently experiencing anger yet not expressing anger causes an individual to focus their resultant negative thoughts on all people generally, opening the door for the development of dehumanization beliefs. Alternatively, perhaps individuals who frequently experience yet rarely express anger hold a low position with a social status hierarchy. Perhaps their position within a hierarchy is associated with punishment following anger expression. Past research has indicated that social status is associated with others' toleration of anger expression (Miller & Sperry, 1987; Tiedens, 2001). Either low social status or punishment following anger expression may be importantly related to the development of dehumanization beliefs. Further research is needed to test this proposition.

Dissertation study 1 provided new evidence that negative affect is associated with indiscriminate aggression. Previous work linking anger and aggressive behavior has been dominated by theory over empirical demonstration (Berkowitz, 2001). For example, Anderson and Bushman (2002) outlined mechanisms than may underlie a causal link from anger to aggression. These potential causal mechanisms included: the reduction of

inhibitions on aggressive behavior by influencing moral reasoning processes, the facilitation of aggression-supporting intentions, cueing aggressive interpretations of social information, priming of aggressive scripts and schemata, and arousal processes.

Dissertation study 1 directly tests the proposition that both anger and anxiety cause increases in indiscriminate aggression. The results of dissertation study 1 provide evidence that anger causes indiscriminate aggression. For example, participants in the angry condition chose to blast all other players in the indiscriminate aggression game with noise in 34% of all trials, a rate significantly higher than that of participants in the neutral condition (17% of trials). The results of dissertation study 1 also provide evidence that anxiety causes indiscriminate aggression. For example, participants in the anxiety condition chose to blast all other players in the indiscriminate aggression game with noise in 22% of all trials, a rate significantly higher than that of participants in the neutral condition. Additionally, participants in the anxiety condition chose to blast one random player in 11% of all trials, a rate significantly higher than that of participants in the neutral condition (4% of trials).

These data provide evidence that negative affect causes aggression. These effects can be interpreted within the GAM framework as due to short-term affective processes. Further research is needed to determine the specific mechanisms, which could potentially include both affective and cognitive mechanisms, underlying these effects. Given the variation in findings across the anger and anxiety inductions, it is possible that the mechanisms underlying these effects may not be identical.

Dehumanization Beliefs and Indiscriminate Aggression

Dissertation studies 1 and 2 provide new information about the relation between a dehumanized view of others and aggressive behavior. Past research has shown that an individual's style of thinking about the social world is related to aggressive outcomes (e.g., Guerra et al., 2003). For example, individuals with an aggressive cognitive style tend to interpret ambiguous social information in an aggressive way (Dodge, 1980). Such an aggression-oriented misinterpretation of social information is related to increases in aggressive behavior (de Castro et al., 2002; Dodge, 1980). There is a lack of previous work available on the relation between the tendency to view others in a dehumanized way and aggressive outcomes.

Theorists have proposed that a dehumanized view of others may underlie a range of antisocial behaviors ranging from acts of extreme violence to mundane bureaucratic injustices (e.g., Bandura, 2002). The results of dissertation studies 1 and 2 indicate that dehumanizer status is related to rates of aggression. For example, in dissertation study 1, high dehumanizers chose to blast all other players in the indiscriminate aggression game with noise in 32% of all trials, a rate significantly higher than that of low dehumanizers (21% of all trials). Additionally, in dissertation study 2, high dehumanizers chose to blast all other players in the indiscriminate aggression game with noise in 39% of all trials, a rate significantly higher than that of low dehumanizers (31% of all trials). In general, the current findings indicate that individuals who endorse higher levels of dehumanization beliefs tend to engage in indiscriminate aggression at a greater rate as compared to individuals who endorse lower levels of dehumanization beliefs.

Although only limited causal conclusions can be drawn from the current data due to the quasi-experimental design, the current findings support the theorized model of the

relation between dehumanization beliefs and indiscriminately aggressive behavior. Within the current theoretical model, chronic episodes of negative emotionality and aggression lead to stable dehumanization beliefs. These beliefs in turn lead to increases in indiscriminately aggressive behavior. Additionally, once dehumanization beliefs become stable, they should remain at least partially activated regardless of context. The current findings provide support for this model by establishing that dehumanization beliefs are related to rates of indiscriminately aggressive behavior. Additionally, this relation is present even in the absence of a negative emotional context.

Potentially, dehumanization beliefs may be implicated in real-world acts of indiscriminate aggression and violence. Anecdotal evidence has indicated that dehumanization beliefs are related to real-world acts of indiscriminate aggression. For example, the psychology of Nazi Germany included themes that heavily dehumanized indiscriminately selected victims (Grodin & Annas, 2007; Lang, 2003). The current findings provide a foundation for viewing acts of real-world indiscriminate aggression in terms of underlying dehumanization beliefs.

Limitations and Future Research

The potential avenues of future research on the link between dehumanization and indiscriminate aggression include studies in which the tendency to view others in a dehumanizing way is manipulated. A limitation of dissertation studies 1 and 2 is the quasi-independent nature of the assignment participants to groups of high and low dehumanizers. Due to this, only limited causal claims can be drawn from the current data. In the future, instead of using dehumanizer status as a quasi-independent variable, a dehumanized view of others could potentially be induced in the laboratory. Procedures

for inducing this point of view could be similar to the mood induction procedures used in the current research. Incorporating a dehumanizing cognitions induction into an experimental paradigm would potentially allow for stronger causal conclusions to be drawn about the influence of dehumanizing beliefs and cognitions on indiscriminate aggression.

Additional research is also needed on the rates and correlates of identification with indiscriminate aggressors. A major limitation of preliminary study 2 was the inclusion of questions about identification with only one indiscriminate aggressor. Unfortunately, the act of violence perpetrated by Cho Seung-Hui is not unique. Similar acts have occurred over the past few decades in the U.S. and continue to occur (e.g., Aronson, 2000; Shubert et al., 1999). For example, in November of 2009, Nidal Hasan killed 13 people in a shooting incident at Fort Hood, Texas (Cooper et al., 2009). Additional research assessing attitudes about a range of indiscriminate aggressors would allow for a more complete profile of the individual who identifies with indiscriminate aggressors. Also, future research is needed on attitudes toward indiscriminate aggressors whose acts of aggression vary in severity. For example, such research might include aggressors who have committed acts of extreme violence to aggressors who have committed non-violent acts of indiscriminate aggression.

Additionally, future research on both identification with indiscriminate aggressors and indiscriminately aggressive behavior itself should examine links with suicidality. Many of the high-profile acts of indiscriminate violence in the U.S. have ended in suicide. For example, Eric Harris and Dylan Klebold, the perpetrators of the Columbine High School shooting, killed themselves with self-inflicted gunshots to the head

(Weintraub et al., 2001). Given the rates of suicide among individuals who engage in such acts, suicidality may be an important underlying causal factor in events of indiscriminate violence. Future research is needed to test this proposition.

A limitation of dissertation study 1 is the lack of a low arousal negative affective control group. Both experimental conditions (the anger and anxiety induction conditions) may have generated physiological arousal in the participants. Potentially, the negative physiological arousal may have caused the observed increases in aggression. Induced anger and anxiety are associated with physiological arousal responses (Schachter, 1970; Schwartz & Weinberger, 1980). In contrast, sadness is associated with low physiological arousal (Shields, 1984). Further research including a low arousal negative affect condition (such as a sadness condition) would be useful in determining the role of physiological arousal in causing changes in aggression.

Conclusion

The major goal of this dissertation research was to examine the extent to which beliefs that dehumanize others underlie support for and engagement in acts of indiscriminate aggression. This research represents the first empirical inquiry into both dehumanization beliefs and indiscriminate aggression. Acts of indiscriminate violence are by their nature difficult to predict and prevent. This investigation represents a significant first step toward the prediction and prevention of such acts of violence. This research encompassed the development and validation of original measures of aggressive beliefs and behaviors. This research has resulted in a new measure of dehumanization beliefs and a behavioral measure of indiscriminant aggression. The DBS is a reliable and valid measure of the degree to which individuals tend to think of others in a dehumanized

way. The indiscriminant aggression game is the first measure of its kind which assesses the tendency to harm unidentified victims. These new measures have implications for public safety and violence prevention efforts.

The research described herein contributes broadly to theory in the study of aggressive behavior. Specifically, this work's contributions to theory include the constructs of dehumanization beliefs and indiscriminate aggression. This program of research is grounded in a testable model of the development and maintenance of dehumanization beliefs. Dehumanization has never before been conceptualized as a stable cognitive structure. Importantly, however, dehumanization beliefs fit into the broader framework of social cognitive theory on aggression, and findings from the current research program support past theory. Additionally, the construct of indiscriminate aggression fills a gap in aggression theory. This work represents the first integration of acts of apparently random aggression into the social cognitive-theoretical framework. This program of research has already uncovered evidence that dehumanization may usefully be conceptualized as a belief, and outlines future studies intended to test the role dehumanization beliefs play in aggressive behavior.

References

Anderson, C. A., Anderson, K. B., & Deuser, W. E. (1996). Examining an affective aggression framework: Weapon and temperature effects on aggressive thoughts, affect, and attitudes. *Personality and Social Psychology Bulletin, 22*, 366–376.

Anderson, C.A., Berkowitz, L., Donnerstein, E., Huesmann, R.L., Johnson, J.D., Linz, D., Malamuth, N. M., & Wartella, E. (2003). The influence of media violence on youth. *Psychological Science in the Public Interest, 4*(3), 81-110.

Anderson, C.A., & Bushman, B.J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science, 12*(5).

Anderson, C.A., & Bushman, B.J. (2002). Human aggression. *Annual Review of Psychology, 53*(1).

Anderson, C.A., & Carnagey, N.L. (2004). Violent evil and the general aggression model. In A. Miller (Ed.), *The social psychology of good and evil*. New York: Guilford.

Anderson, C.A., & Dill, K. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology, 78*(4), 772-790.

Anderson, C.A., Lindsay, J.J., & Bushman, B.J. (1999). Research in the psychological laboratory: Truth or triviality? *Current Directions inPsychological Science, 8*.

Aron, R. (1966). *Peace and war*. London: Weidenfeld & Nicolson.

Aronson, E. (2000). *Nobody left to hate: Teach compassion after Columbine*. New York: Worth.

Auvinen, P. (2007). Retrieved January 2009 from http://pekka-eric.com/

Baker, M. J. (1974). The reasons and cure for dehumanization in nursing homes. *Hospital and Community Psychiatry, 25*(3).

Bandura, A. (1991). Social cognitive theory of moral thought and action. In W.M. Kurtines & J.L. Gewirtz (Eds.), *Moral behavior and development: Advances in theory, research, and applications*. Hillsdale, NJ: Lawrence Erlbaum.

Bandura, A. (1992). Exercise of personal agency through the self-efficacy mechanism. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action.* Washington, D. C.: Hemisphere.

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education, 31*(2), 101-119.

Bandura, A., Barbaranelli, C., Caprara, G.V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology, 71*(2), 364-374.

Bandura, A., Caprara, G.V., Barbaranelli, C., Pastorelli, C., & Regalia, C. (2001). Sociocognitive self-regulatory mechanisms governing transgressive behavior. *Journal of Personality and Social Psychology, 80*(1), 125-135.

Bandura, A., Underwood, B., & Fromson, M.E. (1975). Disinhibition of aggression through diffusion of responsibility and dehumanization of victims. *Journal of Research in Personality, 9*(4), 253-269.

Bar-Tal, D. (1990). Causes and consequences of delegitimization: Models of conflict and ethnocentrism. *Journal of Social Issues, 46*(1), 65-81.

Bar-Tal, D. (2000). From intractable conflict through conflict resolution to reconciliation: Psychological analysis. *Political Psychology, 21*(2).

Bartholow, B. D., & Anderson, C. A. (2001). Effects of violent video games on aggressive behavior: Potential sex differences. *Journal of Experimental Social Psychology, 38*(3).

Bastian, B., & Haslam, N. (2009, in press). Excluded from humanity: The dehumanizing effects of social ostracism. *Journal of Experimental Social Psychology.*

Bauer, H. (2001). *Rethinking the Holocaust*. New Haven, CT: Yale University Press.

Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin, 115*, 243–267.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*.

Belman, J. (2004). *A cockroach cannot give birth to a butterfly and other messages of hate propaganda.* Retrieved November 1, 2009 from http://www.jonescollegeprep.org/ourpages/auto/2009/2/3/40497010/Hate%20Propaganda%20Article.doc

Berkowitz, L. (1984). Some effects of thoughts on anti- and prosocial influences of media events: A cognitive-neoassociation analysis. *Psychological Bulletin, 95*, 410-427.

Berkowitz, L. (1998). Aggressive personalities. In D. F. Barone, M. Hersen, & V. B. Van Hasselt (Eds.), *Advanced personality*. New York: Plenum Press.

Berkowitz, L. (1993). *Aggression: Its causes, consequences, and control.* New York: McGraw-Hill.

Berkowitz, L. (2001). Affect, aggression and antisocial behavior. In R. J. Davidson, K. Scherer, & H. H. Goldsmith (Eds.), *Handbook of Affective Sciences*. New York: Oxford University Press.

Bernard, V., Ottenberg, P., & Redl, F. (1965). Dehumanization: A composite psychological defense in relation to modern war. *Behavioral science and human survival, 64-82*.

Blase, J. J. (1986). Socialization as humanization: One side of becoming a teacher. *Sociology of Education, 59*(2).

Bogdan, R., & Taylor, S. J. (1989). Relationships with severely disabled people: The social construction of humanness. *Social Problems, 36*(2).

Bryant, J., & Zillman, D. (1979). The effect of the intensification of annoyance through residual excitation from unrelated prior stimulation on substantially delayed hostile behavior. *Journal of Experimental Social Psychology, 15*.

Bushman, B.J. (1995). Moderating role of trait aggressiveness in the effects of violent media on aggression. *Journal of Personality and Social Psychology, 69*(5).

Bushman, B.J., & Anderson, C.A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others. *Psychological Science, 20*(3).

Bushman, B. J., Bonacci, A. M., Pedersen, W. C., Vasquez, E. A., & Miller, N. (1995). Chewing on it can chew you up: Effects of rumination on triggered displaced aggression. *Journal of Personality and Social Psychology, 88*(6).

Bushman, B.J., & Huesmann, R.L. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatric and Adolescent Medicine,160*, pp. 348-352.

Buss, A.H. (1961). *The psychology of aggression.* New York: Wiley.

Buss, A.H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology, 63*(3).

Cantor, J. (1998). *"Mommy, I'm scared": How TV and movies frighten children and what we can do to protect them.* Orlando, FL, US: Harcourt.

Castano, E., & Giner-Sorolla, R. (2006). Not quite human: Infrahumanization in response to collective responsibility for intergroup killing. *Journal of Personality and Social Psychology, 90*.

Cehajic, S., Brown, R., & Gonzalez, R. (2009). What do I care? Perceived ingroup responsibility and dehumanization as predictors of empathy felt for the victim group. *Group Processes and Intergroup Relations, 12*(6).

Cherek, D.R. (1981). Effects of smoking different doses of nicotine on human aggressive behavior. *Psychopharmacology, 75*(4).

Chirot, D., & McCauley, C. (2006). *Why not kill them all? The logic and prevention of mass political murder*. Princeton, NJ: Princeton University Press.

Chory-Assad, R., & Cicchirillo, V. (2005). Empathy and affective orientation as predictors of identification with television characters. *Communication Research Reports, 22*(1).

Chronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*(4).

Cleckley, H. (1976). *The mask of sanity.* St Louis, MO: Mosby.

Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology*, *32*.

Colder, C.R., & Stice, E. (1998). The moderating effect of impulsivity on the relationship between anger and adolescent problem behavior: Cross-sectional and prospective findings. *Journal of Youth and Adolescence, 27*.

Cooper, A., Rowlands, T., Starr, B., & Todd, B. (2009, November 12). Fort Hood suspect charged with murder. Retrieved December 1, 2009 from http://www.cnn.com/2009/CRIME/11/12/fort.hood.investigation/index.html

Cornell, D.G., Peterson, C.S., & Richards, H. (1999). Anger as a predictor of aggression among incarcerated adolescents. *Journal of Consulting and Clinical Psychology, 67*.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115,* 74–101.

Cronbach, L.J., & Meehl, P.E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*.

de Castro, B. O., Veerman, J. W., Koops, W., Bosch, J. D., & Monshouwer, H. (2002). Hostile attribution of intent and aggressive behavior: A meta- analysis. *Child Development, 73*(3).

Deffenbacher, J.L. (1992). Trait anger: Theory, findings, and implications. In C.D. Spielberger & J.N. Butcher (Eds.), *Advances in Personality Assessment*. Hillsdale, NJ: Erlbaum.

Diener, E. (1977). Deindividuation: Causes and consequences. *Social Behavior and Personality*, *5*.

Dodge, K. A. (1980). Social cognition and children's aggressive behavior. *Child Development, 51*(1).

Dodge, K. A. (2006). Translational science in action: Hostile attributional style and the development of aggressive behavior problems. *Development and Psychopathology, 18*(3).

Dukas, H., & Hofmann, B. (1979). *Albert Einstein: The human side*. Princeton University Press.

Falk, R., Gendzier, I.L., & Lifton, R.J. (2006). *Crimes of War: Iraq.* New York: Nation Books.

Farrington, D.P., & Jolliffe, D. (2001). Personality and crime. In N. J. Smelser & P. B. Baltes, (Eds.), *International encyclopedia of the social and behavioural sciences*. Amsterdam: Elsevier.

FBI Uniform Crime Reports for the U.S. 2008. (2008). Retrieved March 3, 2008 from http://www.fbi.gov/ucr/ucr.htm

Ferenczi, S. (1980). Confusion of tongues between adults and the child. In M. Balint (Ed.), *Final contributions to the problems and methods of Psycho-Analysis.* London: Karnac.

Feshbach, S. (1997). *Aggression*. New York: Plenum.

Fisk, S. A. (2009). *When words take lives: The role of language in the dehumanization and devastation of the Jews in the Holocaust.* Unpublished master's thesis: University of Canterbury.

Fletcher, J. (1973). Ethics and euthanasia. *The American Journal of Nursing, 73*(4).

Fletcher, J. (1974). Ethics and euthanasia. In R. H. Williams (Ed.), *To Live and to Die: When, Why, and How.* New York: Springer-Verlag.

Frankl, V. E. (1963). *Man's search for meaning.* Beacon Press: Boston.

Freud, A. (1936). Identification with the aggressor. *Writings, 2.*

Frick, P. J. (1998). Callous-unemotional traits and conduct problems: Applying the two-factor model of psychopathy to children. In D.J. Cooke, A. Forth, & R.D. Hare (Eds.), *Psychopathy: Theory, research and implications for society.* Amsterdam: Kluwer.

Frick, P. J. (2004). The Inventory of Callous-Unemotional Traits. Unpublished rating scale.

Fromm, E. (1973). *The anatomy of human destructiveness*. New York: Holt, Rinehart and Winston.

Ganor, B. (1998). *Defining terrorism: Is one man's terrorist another man's freedom fighter?* International Policy Institute for Counter Terrorism: Herzliya, Israel. Retrieved December, 2008, from http://www.ict.org.il/articles/define.htm

Gastal, P. (2008). *Targeting civilians with indiscriminate violence.* Unpublished doctoral dissertation: Naval Postgraduate School, Monterey, California.

Geen, R.G. (1990). *Human aggression.* Pacific Grove, CA: Brooks/Cole.

Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1980). The "mainstreaming" of America: Violence profile no. 11. *Journal of Communication, 30*(3).

Gibson, J.T., & Haritos-Fatouros, M. (1986). *The education of a torturer.* Psychology Today, 20(11), 50-58.

Ginges. J. (1997). A psychological evaluation of different strategies for deterring terrorism. *Terrorism and Political Violence, 9*(1).

Golberg, E.,& Hubert, D. (2001). The security council and the protection of civilians. In , R. McRae & D. Hubert (Eds.), *Human Security and the New Diplomacy*. Montreal: McGill-Queens University Press.

Goldstein, S. E., & Tisak, M. S. (2004). Adolescents' outcome expectancies about relational aggression within acquaintanceships, friendships, and dating relationships. *Journal of Adolescence, 27*(3).

Goodwin, J. (2006). A theory of categorical terrorism. *Social Forces, 84*.

Guerra, N. G., & Huesmann, L. R. (2004). A cognitive-ecological model of aggression. *Revue Internationale de Psychologie Sociale, 17*(2).

Guerra, N. G., Huesmann, L. R., & Spindler, A. (2003). Community violence exposure, social cognition, and aggression among urban elementary school children. *Child Development, 74*(5).

Grieme, W. C. (1999). *Heavy artillery: Military operations in urban terrain (MOUT)*. Unpublished doctoral dissertation: School of Advanced Military Studies, United States Army Command and General College, Fort Leavenworth, Kansas.

Grodin, M., & Annas, G. (2007). Physicians and torture: Lessons from the Nazi doctors. *International Review of the Red Cross, 89*(867).

Gross, J.J., & John, O.P. (1995). Facets of emotional Expressivity: Three self-report factors and their correlates. *Personality and Individual Differences, 19* (4).

Halpern, J., & Weinstein, H. M. (2004). Rehumanizing the other: Empathy and reconciliation. *Human Rights Quarterly,26*,561–583.

Hare, R. D. (1993). *Without conscience: The disturbing world of the psychopaths among us.* Pocket Books: New York.

Harris, L.T., & Fiske, S.T. (2006). Dehumanizing the lowest of the low: Neuroimaging responses to extreme out-groups. *Psychological Science,17*(10), 847-853.

Haslam, N., & Bain, P. (2007). Humanizing the self: Moderators of the attribution of lesser humanness to others. *Personality and Social Psychology Bulletin, 33*(1), 57-68.

Haslam, N., Kashima, Y., Loughnan, S., Shi, J., & Suitner, C. (2008). Subhuman, inhuman, and superhuman: Contrasting humans with nonhumans in three cultures. *Social Cognition, 26*(2).

Hastings, M. (2008). *Retribution: The battle for Japan, 1944-1945*. New York: Knopf.

Hawkins, J. (2006). The costs of artillery: Eliminating harassment and interdiction fire during the Vietnam War. *Journal of Military History, 70* (1).

Herman, P. C., Polivy, J., Lank, C. N., & Heatherton, T. E. (1987). Anxiety, hunger, and eating behavior. *Journal of Abnormal Psychology, 96*(3).

Hermsen, M.A., & ten Have, H.A.M.J. (2002). Euthanasia in Palliative Care Journals. *Journal of Pain and Symptom Management, 23*(6).

Hodson, G., & Costello, K. (2007). Interpersonal disgust, ideological orientations, and dehumanization as predictors of intergroup attitudes. *Psychological Science, 18*(8).

Huesmann, R.L. (1998). The role of social information processing and cognitive schema in the acquisition and maintenance of habitual aggressive behavior. In R.G. Geen & E. Donnerstein (Eds.), *Human aggression: Theories, research, and implications for social policy*. San Diego: Academic Press.

Huesmann, R. L. (2002). *How to grow a terrorist without really trying*. Paper presented at the annual meeting of the American Psychological Association, Chicago, August 2.

Huesmann, R.L., & Eron, L.D. (1986). *Television and the aggressive child: A cross-national comparison*. Hillsdale, NJ: Erlbaum.

Huesmann, R.L., & Guerra, N.G. (1997). Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology, 72*(2), 408-419.

Huesmann, R.L., Moise-Titus, J., Podolski, C., & Eron, L.D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977-1992. *Developmental Psychology, 39*(2), 201-221.

Hultman, L. (2005). *Killing civilians to signal resolve: Rebel strategies in intrastate conflicts*. Paper presented at the Jan Tinbergen Peace Science Conference.

Hyde, J. S. (1984). How large are gender differences in aggression? A developmental meta-analysis. *Developmental Psychology, 20*(4).

Jenkins, B. M. (1975). *Will terrorists go nuclear?* Santa Monica, CA: The Rand Corporation.

Johnson, D. W., & Hebeisen, A. A. (1977). Attitudes toward interdependence among persons and psychological health. *Psychological Reports, 40*.

Kalyvas, S. N. (2004). The paradox of terrorism in civil war. *The Journal of Ethics, 8*.

Kampfe, C.M. (1990). *Dignity versus dehumanization in long-term care settings for older persons: A training outline.* Poster presented at the Annual Convention of the American Association of Counseling and Development, Cincinnati, OH.

Keen, E. (1986). Paranoia and cataclysmic narratives. In T.R. Sarbin (Ed). *Narrative psychology: The storied nature of human conduct.* Westport, CT, US: Praeger Publishers/Greenwood Publishing Group.

Kelly, E.P. (2009). A case study of ethics and mutual funds mismanagement at Putnam. *Ethics and Behavior, 19*(1).

Kelman, H.C. (1973). Violence without moral restraint: Reflections on the dehumanization of victims and victimizers. *Journal of Social Issues, 29*(4), 25-61.

Kimbrell, T. A., George, M. S., Parekh, P. I., Ketter, T. A., Podell, D. M., Danielson, A. L., Repella, J. D., Benson, B. E., Willis, M. W., Hervscovitch, P., & Post, R. M. (1999). Regional brain activity during transient self-induced anxiety and anger in healthy adults. *Biological Psychiatry, 46*(4).

Kimonis, E. R., Frick, P. J., Skeem, J. L., Marsee, M. A., Cruise, K., Munoz, L. C., Aucoin, K. J., & Morris, A. S. (2008). Assessing callous-unemotional traits in adolescent offenders: Validation of the Inventory of Callous-Unemotional Traits. *International Journal of Law and Psychiatry, 31*(3).

Lang, B. (2003). *Act and idea in the Nazi genocide*. Chicago, IL: University of Chicago Press.

Leslie, A. (1994). ToMM, ToBY and agency: Core architecture and domain specificity. In L. A. Hirschfeld & S. A. Gelman (Eds.), *Mapping the mind: Domain specificity in cognition and culture*. Cambridge, UK: Cambridge University Press.

Leventhal, H. (1975). The consequences of depersonalization during illness and treatment: An information-processing model. .In J. Howard & A. Strauss (Eds.). *Humanizing Health Care*.

Leyens, J., Cortes, B., Demoulin, S., Dovidio, J.F., Fiske, S.T., Gaunt, R., Paladino, M., Rodriguez-Perez, A., Rodriguez-Torres, R., & Vaes, J. (2003). Emotional prejudice, essentialism, and nationalism: The 2002 Tajfel Lecture. *European Journal of Social Psychology, 33*(6).

Leyens, J., Rodriguez-Perez, A., Rodriguez-Torres, R., Gaunt, R., Paladino, M., Vaes, J., & Demoulin, S. (2001). Psychological essentialism and the differential attribution of uniquely human emotions to ingroups and outgroups. *European Journal of Social Psychology, 31*(4).

Lifton, R. J. (1986). *The Nazi doctors: Medical killing and the psychology of genocide*. New York: Basic Books.

Lindsay, J.J., & Anderson, C.A. (2000). From antecedent conditions to violent actions: A general affective aggression model. *Personality and Social Psychology Bulletin, 26*(5).

Liska, A. E., & Baccaglini, W. (1990). Feeling safe by comparison: Crime in the newspapers. *Social Problems, 37*.

Loughnan, S., & Haslam, N. (2007). Animals and androids: Implicit associations between social categories and nonhumans. *Psychological Science, 18*(2).

Luhmann, N. (1979). *Trust and power.* New York: Wiley.

Lykken, D. T. (1995). *The antisocial personalities.* Hillsdale, NJ: Erlbaum.

Marcu, A., Lyons, E., & Hegarty, P. (2007). Dilemmatic human–animal boundaries in Britain and Romania: Post-materialist and materialist dehumanization. *British Journal of Social Psychology, 46* (4).

Marsee, M., Weems, C.& Taylor, L. (2008). Exploring the association between aggression and anxiety in youth: A look at aggressive subtypes, gender, and social cognition. *Journal of Child and Family Studies, 17*(1).

Martin, G. (2003). *Understanding terrorism: Challenges, perspectives, and issues*. Thousand Oaks, CA: Sage.

McCain, R.A. (2003). *Game Theory: A Nontechnical Introduction to the Analysis of Strategy.* South Western College Publishers.

McFaul, A. F., Boxer, P., & Terranova, A. M. (2008). Investigating effects of identification with real-world aggressors and victims on the link between exposure to political violence in the news media and aggressive worldviews. *American Journal of Media Psychology, 1*(1/2).

Merari, A. (1999). Terrorism as a strategy of struggle: Past and future. *Terrorism and Political Violence, 11.*

Metzger, R. L. (1976). A reliability and validity study of the state-trait anxiety inventory. *Journal of Clinical Psychology, 32*(2).

Miller, P., & Eisenberg, N., (1988). The relation of empathy to aggressive and externalizing/antisocial behavior. *Psychological Bulletin*, *103*.

Miller, P., & Sperry, L. (1987). The socialization of anger and aggression. *Merrill-Palmer Quarterly, 33*, 1–31.

Mitchell, J. P., Mason, M. F., Macrae, C. N., & Banaji, M. R. (2006). Thinking about others: The neural substrates of social cognition. In J. T. Cacioppo, P. S. Visser,

& Pickett, C. L. (Eds.), *Social Neuroscience: People thinking about thinking people*. Cambridge, MA: MIT Press.

Muldoon, M., & King, N. (1995). Spirituality, health care, and bioethics. *Journal of Religion and Health, 34*(4), 329–349.

Nacos, B.L. (1994). *Terrorism and the media: From the Iran hostage crisis to the World Trade Center bombing.* Columbia University Press.

Newman, M.E.J., Forrest, S., & Balthrop, J. (2002). Email networks and the spread of computer viruses. *Physical Review*, *66*(3).

Nichols, S., & Stich, S. (2003). *Mindreading*. Oxford: Oxford University Press.

Opotow, S. (1990). Moral exclusion and injustice: An introduction. *Journal of Social Issues, 46*(1), 1-20.

Paik, H., & Comstock, G. (1994). The effects of television violence on anti-social behavior: A meta-analysis. *Communication Research, 21*(4).

Pinn, A. B. (2003). *Terror and triumph: The nature of black religion.* Minneapolis: Fortress Press.

Richters, J. E., & Martinez, P. (1992). *Things I have seen and heard: A structured interviewfor assessing young children's violence exposure.* Rockville, MD: National Institute of Mental Health.

Ricks, T. (2006). *Fiasco: The American military adventure in Iraq*. New York: Penguin.

Riley, W. T., McCormick, M. G. F., Simon, E. M., Stack, K., Pushkin, Y., Overstreet, M. M., Carmona, J. J., & Magakian, C. (1995). Effects of alprazolam dose on the induction and habituation processes during behavioral panic induction treatment. *Journal of Anxiety Disorders, 9*(3).

Rosenfeld, E., Huesmann, L.R., Eron, L.D., & Torney-Purta, J. (1982). Measuring patterns of fantasy behaviors in children. *Journal of Personality and Social Psychology*, *42*, 347-366.

Rusting, C.L. (1998). Personality, mood, and cognitive processing of emotional information: Three conceptual frameworks. *Psychological bulletin, 124*(2).

Sargent, J. D., Heatherton, T. F., Ahrens, M. B., Dalton, M. A., Tickle, J. J., & Beach, M. L. (2002). Adolescent exposure to extremely violent movies. *Journal of Adolescent Health, 31*(6).

Schachter, S. (1970). The assumption of identity and peripheralist-centralist controversies in motivation and emotion. In M. B. Arnold (Ed.), *Feelings and Emotions.* New York: Academic Press.

Schaffer, R. (1980). American military ethics in World War II: The bombing of German civilians. *The Journal of American History, 67*(2).

Schelling, T. C. (1960). *The Strategy of Conflict*. Cambridge, MA: Harvard University Press.

Schlecter, H., & Everitt, D. (1997). *The A to Z encyclopedia of serial killers*. New York: Pocket Books.

Schmid, A. (2000). *Magnitudes of terrorist victimization*. Paper prepared for the Ancillary Meeting on Terrorist Victimization: Prevention, Control, and Recovery, on the occasion of the Tenth United Nations Congress on the Prevention of Crime and the Treatment of Offenders on Crime and Justice: Meeting the Challenges of the 21st Century, held in Vienna, pp. 5-6.

Schwartz, G. E., & Weinberger, D. A. (1980). Patterns of emotional responses to affective situations: Relations among happiness, sadness, anger, fear, depression, and anxiety. *Motivation Emotion 4.*

Sells, M. (1996). Religion, history, and genocide in Bosnia-Herzegovina. In G. S. Davis (Ed.), *Religion and justice in the war over Bosnia*.

Shaw, E. D. (1986). Political terrorists: Dangers of diagnosis and an alternative to the psychopathology model. *International Journal of Law & Psychiatry*, *8*.

Shields, S. A. (1984). Reports of bodily change in anxiety, sadness, and anger. *Motivation and Emotion, 8*(1).

Shubert, T. H., Bressette, S., Deeken, J., & Bender, W. N. (1999). Analysis of random school shootings. In W. N. Bender, G. Clinton, & R. L. Bender (Eds.), *Violence prevention and reduction in schools*. Austin: PRO-ED.

Siemer, M. (2005). Mood-congruent cognitions constitute mood experience. *Emotion, 5*(3).

Sinclair, R. C., Soldat, A. S., & Ryan, C. A. (1997). Development and validation of Velten-like image-oriented anxiety and serenity mood inductions. *Basic and Applied Social Psychology, 19*(2).

Slovic, P. (2007). "If I Look at the Mass I Will Never Act": Psychic Numbing and Genocide. *Judgment and decision making, 2*(2), 79-95.

Smallbone, S. W., & Dadds, M. R. (2000). Attachment and coercive sexual behavior. *Sexual Abuse: A Journal of Research and Treatment, 12*(1).

Soderstrom, H. (2003). Psychopathy as a disorder of empathy. *European Child and Adolescent Psychiatry, 12* (5).

Sohn, L. (1997). Unprovoked assaults: Making sense of apparently random violence. In D. Bell (Ed.), *Reason and passion: A celebration of the work of Hanna Segal.* Routledge.

Spielberger, C.D. (1985). Assessment of state and trait anxiety: Conceptual and methodological issues. *The Southern Psychologist, 2*, 6-16.

Spielberger, C.D. (1988). M*anual for the State-Trait Anger Expression Inventory (STAXI).* Odessa, FL: Psychological Assessment Resources.

Spielberger, C. D. (1989). *State-Trait Anxiety Inventory: A comprehensive bibliography.* Palo Alto, CA: Consulting Psychology Press.

Spielberger, C. D., & Gorsuch, R. L. (1970). *STAI manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychology Press.

Srivastava, S., Sharma, H.O., & Mandal, K.M. (2003). Mood induction with facial expressions of emotion in patients with generalized anxiety disorder. *Depression and Anxiety, 18*(3), 144-148.

Staub, E. (1989). *The roots of evil: The origins of genocide and other group violence.* New York: Cambridge University Press.

Staub, E. (2000). Genocide and mass killing: Origins, prevention, healing and reconciliation. *Political Psychology, 21*(2), 367-382.

Tennyson, K.N. (2009). US surge in Afghanistan. *Air Power Issue Brief.* Center for Air Power Studies.

Thornberry, C. (1996). Saving the war crimes tribunal. *Foreign Policy*, *104.*

Tiedens, L.Z. (2001). The effect of anger on the hostile inferences of aggressive and nonaggressive people: Specific emotions, cognitive processing, and chronic accessibility. *Motivation and Emotion, 25*(3), 233-251.

Tiedens, L. Z. (2001). Anger and advancement versus sadness and subjugation: The effect of negative emotion expressions on social status conferral. *Journal of Personality and Social Psychology, 80*(1).

Turner, C.W., Layton, J.F., & Simons, L.S. (1975). Naturalistic studies of aggressive behavior: aggressive stimuli, victim visibility, and horn honking. *Journal of Personality and Social Psychology, 31*(6), 1098-1107.

Twenge, J.M., Baumeister, R.F., Tice, D.M., & Stucke, T.S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. *Journal of Personality and Social Psychology, 81*(6).

Vaes, J., Paladino, M., Castelli, L., Leyens, J., & Giovanazzi, A. (2003). On the behavioral consequences of infrahumanization: The implicit role of uniquely human emotions in intergroup relations. *Journal of Personality and Social Psychology, 85*(6).

Valkenburg, P. M., & Janssen, S. C. (1999). What do children value in entertainment programs? A cross-cultural investigation. *Journal of Communication, 49*(2).

Velten, E. (1968). A laboratory task for the induction of mood states. *Behavior Research and Therapy, 6*(4).

Viki, G. T.,Winchester, L., Titshall, L., Chisango, T., Pina, A., & Russell, R. (2006). Beyond secondary emotions: The infrahumanization of outgroups using human-related and animal-related words. *Social Cognition, 24*, 753–775.

Wax, E. (2003, 4 December). Journalists sentenced in Rwanda Genocide—Prosecutor said "hate media" urged killings. *Washington Post Foreign Service*, pp. A20.

Weintraub, P., Hall, H. L., & Pynoos, R. S. (2001). Columbine High School shootings: Community response. In S. L. Shafii (Ed.), *School violence: Assessment, management, prevention.* New York: American Psychiatric Publishing.

Westermeyer, J. (1972). A comparison of amok and other homicides in Laos. *American Journal of Psychiatry, 129*.

White, R.K. (1972). Dehumanization, more than aggression. *PsycCRITIQUES, 17*(4).

Wiburg, M., & Sundstrom, A. (2009). A comparison of two approaches to correction of restriction of range in correlational analysis. *Practical Assessment, Research & Evaluation, 14*(5).

Zebel, S., Zimmermann, A., Viki, G. T., & Doosje, B. (2008). Dehumanization and guilt as distinct but related predictors of support for reparation policies. *Political Psychology, 29*(2).

Zelli, A. (1992). Aggression and attributions of hostile intent: Validation of a scale of beliefs about the prevalence of aggression in the social world. *Dissertation Abstracts International, 53*(6-B).

Zelli, A., Huesmann, R.L., & Cervone, D. (1995). Social inference and individual differences in aggression: Evidence for spontaneous judgments of hostility. *Aggressive Behavior, 21*(6), 405-417.

Zillman, D. (1983). Arousal and aggression. In R.G. Geen & E.I. Donnerstein (Eds.), *Aggression: Theoretical and empirical reviews.* New York: Academic Press.

Zimet, G.D., Dahlem, N.W., Zimet, S.G., & Farley, G.K. (1988). The Multidimensional

Scale of Perceived Social Support. *Journal of Personality Assessment, 52.*

Zoccolillo, M. (1992). Co-occurrence of conduct disorder and its adult outcomes with depressive and anxiety disorders: A review. *Journal of the American Academy of Child and Adolescent Psychiatry, 30.*

Table 1

Correlations Among Dehumanization Total Score and Pre-screening Study Variables

	Trait aggression	Need for cognition	Emotional expressivity	Self esteem	Just world	Exposure to violence	Self compassion	Identification act	Identification wish
Total dehumanization	.30**	-.22**	-.08	-.37**	-.09*	.09*	-.24**	.16**	.12**

(* indicates significance at the .05 level; ** indicates significance at the .01 level).

(N = 617)

Table 2

Correlations between Time 1 and Time 2 Dehumanization Assessments

	Total scale (t2)	Relational Value (t2)	Value (t2)	Uniqueness (t2)	Thinking (t2)	Transcendence (t2)
Total scale (t1)	.36**					
Relational Value (t1)		.28*				
Value (t1)			.51**			
Uniqueness (t1)				.24*		
Thinking (t1)					.46**	
Transcendence (t1)						.17

(* indicates a significant correlation at the 0.05 level, ** indicates a significant correlation at the 0.01 level; N = 77)

Table 3

Correlations Among Dehumanization Total Score and Pre-screening Study Variables by Gender

	Trait aggression	Need for cognition	Emotional expressivity	Self esteem	Just world	Exposure to violence	Self compassion	Identification act	Identification wish
Female dehumanization	.23**	-.20**	-.07	-.35**	-.01	.01	-.23**	.13*	.08
Male dehumanization	.40**	-.26**	-.06	-.35**	-.18*	-.11	-.28**	.18*	.12

(* indicates significance at the .05 level; ** indicates significance at the .01 level).

(N = 617)

Table 4

Continuous Attachment Style Items and Dehumanization Total Scale

	Secure	Fearful	Preoccupied	Avoidant
Dehumanization	-.30**	.22**	.20**	.12**

(* indicates a significant correlation at the 0.05 level; ** indicates a significant correlation at the 0.01 level)

Table 5

Means and Standard Deviations for Dehumanization Total and Subscales across Attachment Style Categories

	Attachment style			
Scale	Secure	Fearful	Preoccupied	Avoidant
Dehumanization total				
M	72.00[a]	83.40[b]	84.11[b]	80.00[b]
SD	(22.0)	(22.1)	(26.0)	(24.1)
Relational Value				
M	12.01[a]	15.80[b]	15.60[b]	15.60[b]
SD	(6.0)	(6.3)	(6.2)	(7.1)
Value				
M	15.40[a]	18.51[b]	18.50[b]	17.60[b]
SD	(6.6)	(7.0)	(6.4)	(7.0)
Uniqueness				
M	12.70[a]	14.00[a,b]	15.33[b]	13.74[a,b]
SD	(6.0)	(6.1)	(6.1)	(6.1)
Thinking				
M	18.05[a]	20.15[b]	20.10[b]	18.85[a,b]
SD	(5.4)	(5.1)	(6.0)	(6.0)
Transcendence				
M	13.60[a]	15.03[b]	15.40[b]	14.22[a,b]
SD	(5.0)	(5.0)	(6.0)	(5.2)

(Different superscripts indicate significant differences)

Table 6

Correlations among Dehumanization Total Score and Follow-up Study Variables

	Trait Aggression	Depression	Aggressive Fantasy	Mean World Beliefs	Normative Beliefs	Social Support	State Anger	Trait Anger	Anger Expression
Dehuman-ization	.15	.42**	.48**	.04	-.11	-.64**	.79**	.56**	-.46**

(* indicates significance at the .05 level; ** indicates significance at the .01 level; N = 77)

Table 7

Correlations among Dehumanization Total Score and Follow-up Study Variables by Gender

	Trait Aggression	Depression	Aggressive Fantasy	Mean World Beliefs	Normative Beliefs	Social Support	State Anger	Trait Anger	Anger Expression
Female dehumanization	.09	.45**	.53**	-.19	-.13	-.63**	.78**	.56**	-.55**
Male dehumanization	.17	.43*	.69**	.19	-.08	-.67**	.79**	.52*	-.21

(* indicates significance at the .05 level; ** indicates significance at the .01 level; N = 77)

Appendix A

Dehumanization Beliefs Scale

Please indicate how often each of the following statements describes your point of view.

There is no point in getting to know most people.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people are worth getting to know.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Meeting new people is bothersome and usually not worth my time.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Interacting with others is an important part of life.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

I don’t derive much from my interactions with others.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

I don’t see the point of trying to talk with and get to know other people.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

The average person doesn’t do much of importance with their life.

1 describes						7 describes

my point of view **none** of the time	2	3	4	5	6	my point of view **all** of the time

Most people live day to day, and don't contribute much of value to the world.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people contribute something to the world during their lives.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Even if it is very small, most people make a positive impact on society each day.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people don't make much of a difference in the world.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Each person has something to contribute to the world.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Each human being is unique and irreplaceable.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

There is not much difference between one person and the next.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

When one person dies, no one can ever really replace them.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people are not unique or original individuals.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Meeting new people is just more of the same.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Each person has something special about them that makes them unique.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

In general, most people make thoughtful choices in their lives.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people go through their lives on automatic pilot.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people have rich inner thoughts.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Humans experience complex emotions.

1 describes my point of view **none**	2	3	4	5	6	7 describes my point of view **all** of

of the time						the time

Most people engage in judgment, planning and forethought throughout their lives.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Most people think carefully about important issues.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

A person is greater than the sum of their accomplishments and possessions.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Human life has meaning or purpose that is greater than just day to day living.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

The human mind is complex, and may never be fully understood.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Humans are driven mainly by instincts, and do not integrate much meaning or purpose into their lives.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

All human beings are connected in some way.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

There is no point or meaning behind human existence.

1 describes my point of view **none** of the time	2	3	4	5	6	7 describes my point of view **all** of the time

Appendix B

Mood Induction Phrases

Angry Mood Induction Phrases

1. Today is neither better nor worse than any other day.
2. However, I do feel a little irritated today.
3. If someone isn't being logical, I don't just let it go by.
4. There have been times when I've been criticized unjustly.
5. I can be impatient with foolish people.
6. I've worked under people who take credit for good work but pass off mistakes on to those under them.
7. Some of my family and friends have habits that bother and annoy me very much.
8. I know what it feels like to be cheated.
9. At times, I've been deceived by others.
10. No one cares much what happens to anyone but themselves.
11. Some of the policies at school make me indignant.
12. Sometimes I think people do things just to irritate me.
13. I've been bad-tempered at times in my life and I can recapture those feelings easily.
14. Few things make me more bitter than being taken for granted.
15. I feel like being sarcastic with someone who has angered me.
16. I can become quick-tempered if the situation provokes me enough.
17. There are occasions when I'm hot-headed.
18. I get angry when I think about the creeps that make it unsafe to walk alone at night.
19. It's maddening the way people don't really listen to me.
20. I feel rather aggravated now.
21. There are people who I thought I could trust who betrayed me.
22. I feel grouchy and spiteful.
23. Members of my family have treated me poorly at times and made me very angry.
24. If someone mistreats me, I can really harbor a grudge.
25. It makes me bitter to think of the way so-called friends have sometimes treated me.
26. Although it is probably irrational, I can't help but see red when someone insults me.
27. Some of the things that go on at school make me downright angry and resentful.
28. I feel vindictive.
29. I can feel my body getting tense with anger.
30. I can be incredibly bitchy at times. In fact I'm feeling that way now.
31. The cruelty that goes on in the world often incenses and even enrages me.
32. I feel angry at the whole world.
33. I can be confronting with people who are rude or annoying. They piss me off!
34. I feel rebellious and ready to fight.
35. I'm not going to take any mistreatment from anyone. Just let someone even try to take advantage of me today!
36. I feel vicious.

37. There have been days when I feel hostile and bitter and unable to control those feelings.
38. To make this anger go away would be nearly impossible.
39. I feel like striking out at someone who has angered me.
40. I've lain awake at night so mad that I couldn't stop thinking about what made me feel that way.
41. Sometimes I seem to go blind with rage.
42. I'm so hostile, I could easily lose control.
43. I've been so angry I could have bashed someone's head in!
44. I can feel my fists clenched in fury.
45. I feel like I could explode.
46. I want to yell and scream. That's how upset I feel.
47. I couldn't stay calm now no matter what. I'm to incensed.
48. My heart is pounding and I'm boiling inside.
49. I am consumed with hatred.
50. I'm livid with rage.

Sad Mood Induction Phrases

1. Today is neither better nor worse than any other day.
2. However, I feel a little low today.
3. I feel rather sluggish now.
4. Sometimes I wonder whether school is all that worthwhile.
5. Every now and then I feel so tired and gloomy that I'd rather just sit than do anything.
6. I can remember times when everybody but me seemed full of energy.
7. Too often I have found myself staring listlessly into the distance, my mind a blank, when I definitely should have been studying.
8. It has occurred to me more than once that studying is basically useless, because you forget almost everything you learned anyway.
9. I do feel somewhat discouraged and drowsy — maybe I'll need a nap when I get home.
10. I'm afraid the fighting in Ireland may get a lot worse.
11. There have been days when I felt weak and confused, and everything went miserably wrong.
12. I've had daydreams in which my mistakes kept occurring to me — sometimes I wish I could start over again.
13. I feel terribly tired and indifferent to things today.
14. Just to stand up would take a big effort.
15. I'm getting tired out. I can feel my body getting exhausted and heavy.
16. I'm beginning to feel sleepy. My thoughts are drifting.
17. At times I've been so tired and discouraged that I went to sleep rather than face important problems.
18. My life is so tiresome — the same old thing day after day depresses me.
19. I couldn't remember things well right now if I had to.
20. I just can't make up my mind: it's so hard do make simple decisions.
21. I want to go to sleep —I feel like just closing my eyes and going to sleep right here.
22. I'm not very alert: I feel listless and vaguely sad.
23. I've doubted that I'm a worthwhile person.
24. I feel worn out: my health may not be as good as it's supposed to be.
25. It seems that no matter how hard I try, things still go wrong.
26. I've noticed that no one seems to really understand or care when I complain or feel unhappy.
27. I'm uncertain about my future.
28. I'm discouraged and unhappy about myself.
29. I've laid awake at night worrying so long that I've hated myself.
30. Things are worse now than when I was younger.
31. The way I feel now, the future looks boring and hopeless.
32. Some very important decisions are almost impossible for me to make.
33. Things are easier and better for other people than for me. I feel like there's no use in trying again.
34. Often people make me very upset. I don't like to be around them.
35. It takes too much effort to convince people of anything, there's no point in trying.
36. I fail in communicating with people about my problems.
37. It's so discouraging the way people don't really listen to me.

38. I've felt so alone before, that I could have cried.
39. Sometimes I've wished I could die.
40. My thoughts are so slow and downcast I don't want to think or talk.
41. I just don't care about anything. Life just isn't any fun.
42. Life seems too much for me anyhow — my efforts are wasted.
43. I'm so tired.
44. I don't concentrate or move. I just want to forget about everything.
45. I have too many bad things in my life.
46. Everything seems utterly futile and empty.
47. I feel dizzy and faint. I need to put my head down and not move.
48. I don't want to do anything.
49. All of the unhappiness of my past life is taking possession of me.
50. I want to go to sleep and never wake up.

Happy Mood Induction Phrases

1. Today is neither better nor worse than any other day.
2. I do feel pretty good today, though.
3. I feel light-hearted.
4. This might turn out to have been one of my good days.
5. If your attitude is good, then things are good and my attitude is good.
6. I feel cheerful and lively.
7. I've certainly got energy and self-confidence to share.
8. On the whole, I have very little difficulty in thinking clearly.
9. My parents are pretty proud of me most of the time.
10. I'm glad that I'm in college - it's the key to success nowadays.
11. For the rest of the day, I bet things will go really well.
12. I'm pleased that most people are so friendly to me.
13. My judgments about most things are sound.
14. It's encouraging that I get farther into my major, it's going to take less study to get good grades.
15. I'm full of energy and ambition - I feel like I could go a long time without sleep.
16. This is one of those days when I can grind out schoolwork with practically no effort at all.
17. My judgment is keen and precise today. Just let someone try to put something over me.
18. When I want to, I can make friends extremely easily.
19. If I set my mind to it, I can make things turn out fine.
20. I feel enthusiastic and confident now.
21. There should be opportunity for a lot of good times coming along.
22. Some of my friends are so lively and optimistic.
23. I feel talkative - I feel like talking to almost anybody.
24. I'm full of energy, and am really getting to like the things I'm doing on campus.
25. I feel like bursting with laughter - I wish somebody would tell a joke and give me an excuse.
26. I feel an exhilarating animation in all I do.
27. I know good and well that I can achieve the goals I set.
28. Now that it occurs to me, most of the things that have depressed me wouldn't have if I'd just had the right attitude.
29. I feel so vivacious and efficient today - sitting on top of the world.
30. In the long run, it's obvious that things have gotten better and better during my life.
31. I know in the future I won't over-emphasize so-called "problems".
32. I'm optimistic that I can get along very well with most of the people I meet.
33. I'm too absorbed in things to have time for worry.
34. I'm feeling amazingly good today.
35. I feel superb! I think I can work to the best of my ability.
36. Things look good. Things look great!
37. I feel that many of my friendships will stick with me in the future.
38. I feel highly perceptive and refreshed.
39. I can find the good in almost everything.

40. My thinking is clear and rapid.
41. Life is so much fun; it seems to offer so many sources of fulfillment.
42. Things will be better and better today.
43. I can make decisions rapidly and correctly; and I can defend them against criticisms easily.
44. I feel industrious as heck - I want something to do!
45. Life is firmly in my control.
46. I wish somebody would play some good loud music!
47. This is great -- I really do feel good. I am elated about things!
48. I'm really feeling sharp now.
49. This is just one of those days when I'm ready to go!
50. God, I feel great!

Neutral Mood Induction Phrases

1. At the end appears a section entitled “bibliography notes.”
2. We have two kinds of nouns denoting physical things: individual and mass nouns.
3. This book or any part thereof must not be reproduced in any form.
4. Agricultural products comprised seventy percent of the income.
5. Saturn is sometimes in conjunction, beyond the Sun from the Earth, and is not visible.
6. Some streets were still said to be listed under their old names.
7. The system is supervised by its board of regents.
8. There is a large rose-growing center near Tyler, Texas.
9. Many states supply milk for grammar school children.
10. The typography, paper, and the bind were of the highest quality.
11. The machine dominated county posts for as long as anyone could remember.
12. The desk was old, and scratched into its surface was a profusion of dates, initials, and pleading messages.
13. The orient express travels between Paris and Istanbul.
14. When the banyan bent down under its own weight, its branches began to take root.
15. There isn’t a scientific explanation for every U.F.O. sighting.
16. The Hope diamond was shipped from South Africa to London through the regular mail service.
17. The review is concerned with the first three volumes.
18. Slang is a constantly changing part of the language.
19. The ship was ancient, and would soon be retired from the fleet.
20. There is a small article in the local newspaper which indicates acceptance of the kidnapper’s terms.
21. There is some form in which no oath is required.
22. Match.com finds partners for the lonely.
23. 99.1% of Alaska is owned by the federal government.
24. Two men dressed up as repairmen will appear shortly after the van pulls up.
25. The wood was discolored as if it had been held in a fire.
26. A light is noticed in the dark outside, and it moved eerily towards the house.
27. Painting in a few other non-European countries is treated in a separate volume.
28. Provoked arousal and orientation are accompanied by steeper negative shifts.
29. The names of the holiday mailing list are alphabetically ordered.
30. Significantly, these changes occur during the full moon.
31. The magazine’s report was slanted, as usual.
32. West Samoa gained its independence in 1965.
33. The map would prove useless as a beginning guide.
34. The speaker outlined a plan whereby the current deficits could be eliminated.
35. Black and white pictures are arranged in ten sections.
36. The papers had been front-paging it for days.
37. No man worked harder than he.
38. The notice made it clear that coffee breaks were being limited.
39. A free sample will be given to each person who enters the store.
40. At low tide the bulk of the old ship could be seen.
41. The Chinese language has many dialects, including Cantonese, Mandarin, and Wu.

42. Boeing's main plant in Seattle employs 35,000 people.
43. The doorkeeper was dressed in red.
44. During the next ten year, the group participated in politics.
45. The parliament depended on the people for support.
46. In 1965, Elizabeth made the first state visit by a British monarch to Germany in 56 years.
47. It was their sixth consecutive best seller.
48. It all fitted in with the officer's story.
49. The merger did not change the company's policy.
50. The mansion was rented by the delegation.

Anxiety Mood Induction Phrases

1. Today is neither better nor worse than any other day.
2. However, I do feel a little worried today.
3. I feel more nervous and anxious than usual.
4. I feel more jumpy than usual, and my stomach feels nervous and upset.
5. I can feel my heart beating fast.
6. I feel that I will make a fool of myself in front of other people.
7. I feel like something bad is about to happen.
8. I anticipate having to talk in front of large groups in the future.
9. I am bothered by stomach aches and indigestion.
10. Looking at people I don't know very well in the eyes seems like it would be very unpleasant right now.
11. I feel panicky and as if I could become easily upset.
12. I fear dying and a painful death.
13. I feel that it would be almost impossible to resist a high-pressure salesperson right now.
14. I wish that I could be as calm as others appear.
15. It can sometimes be difficult for me to feel relaxed.
16. Others have reason to dislike me.
17. My face feels hot and red.
18. I am experiencing unreasonable worry about a number of events or activities, like work or school.
19. I feel afraid and worried for no reason at all.
20. I feel numbness and tingling in my fingers and toes.
21. I am bothered by headaches neck and back pain.
22. I am bothered by dizzy spells.
23. I feel full of nervous energy, as if I cannot sit still.
24. I feel upset and have no idea why or what I can do to stop it.
25. I worry about what other people think of me.
26. My mouth feels very dry.
27. I feel I cannot trust my own senses.
28. I need an escape plan at all times and in every situation.
29. Sounds feel like they have become louder, and the lights seem brighter.
30. It feels like the end of the world could happen.
31. My hands are unusually dry and warm.
32. I sometimes feel like the only person in the world who feels so bad inside.
33. My clothes feel hot and stifling.
34. The people that I know have reasons to dislike me.
35. I am tense.
36. I do not feel secure at all.
37. I am presently worrying over possible misfortunes
38. I feel overexcited and rattled.
39. I will probably be unable to escape bad things in the future.
40. I suddenly feel as if I can't breathe even though there is no reason for this.
41. I have an uncomfortable feeling in my stomach that I can't control.

42. I feel as if I am experiencing a waking nightmare.
43. There is no escape from the bad things that will happen to me in the future.
44. I feel as if my life could just fall apart and go to pieces.
45. I worry that something awful will happen to someone in my family.
46. Traveling in a car, bus, or train is more dangerous than people realize.
47. I worry that I will suddenly get a scared feeling, even when there is nothing to be afraid of.
48. I feel like I am having difficulty breathing in and out.
49. I feel as if I may choke or faint.
50. My heart is beating very fast, and I can't slow it down.

VITA

Adrienne F. McFaul

1983	Born May 19 in New Orleans, Louisiana
2001	Graduated from De La Salle High School, New Orleans, Louisiana
2005	B.A., Louisiana State University, Baton Rouge, Louisiana
2005-2006	Graduate work in psychology, University of New Orleans
2006-2010	Graduate work in psychology, Rutgers University, Newark, New Jersey
2010	Ph.D. in psychology