

**Determinants and Consequences of Dehumanization: An Interspecies Model of**

**Prejudice**

by

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## ABSTRACT

Dehumanizing ideologies that explicitly liken other humans to “inferior” animals can have negative consequences for intergroup attitudes and relations. Surprisingly, very little is known about the causes of dehumanization, and essentially no research has examined strategies for reducing dehumanizing tendencies. The Interspecies Model of Prejudice specifies that animalistic dehumanization may be rooted in basic hierarchical beliefs regarding human superiority over animals. This theoretical reasoning suggests that narrowing the human-animal divide should also reduce dehumanization. The purpose of the present dissertation, therefore, was to gain a more complete understanding of the predictors of and solutions to dehumanization by examining the Interspecies Model of Prejudice, first from a layperson’s perspective and then among young children. In Study 1, laypeople strongly rejected the human-animal divide as a probable cause of, or solution to, dehumanization, despite evidence that their own personal beliefs in the human-animal divide positively predicted their dehumanization (and prejudice) scores. From Study 1, it was concluded that the human-animal divide, despite being a robust empirical predictor of dehumanization, is largely unrecognized as a probable cause of, or solution to, dehumanization by non-experts in the psychology of prejudice. Studies 2 and 3 explored the expression of dehumanization, as well as the Interspecies Model of Prejudice, among children ages six to ten years (Studies 2 and 3) and parents (Study 3). Across both studies, White children showed evidence of racial dehumanization by attributing a Black child target fewer “uniquely human” characteristics than the White child target, representing the first systematic evidence of racial dehumanization among children. In Study 3, path analyses supported the Interspecies Model of Prejudice among children.

Specifically, children's beliefs in the human-animal divide predicted greater racial prejudice, an effect explained by heightened racial dehumanization. Moreover, parents' Social Dominance Orientation (preference for social hierarchy and inequality) positively predicted children's human-animal divide beliefs. Critically, these effects remained significant even after controlling for established predictors of child-prejudice (i.e., parent prejudice, authoritarian parenting, and social-cognitive skills) and relevant child demographics (i.e., age and sex). Similar patterns emerged among parent participants, further supporting the Interspecies Model of Prejudice. Encouragingly, children reported narrower human-animal divide perceptions after being exposed to an experimental prime (*versus* control) that highlighted the similarities among humans and animals. Together the three studies reported in this dissertation offer important and novel contributions to the dehumanization and prejudice literature. Not only did we find the first systematic evidence of racial dehumanization among children, we established the human-animal divide as a meaningful dehumanization precursor. Moreover, empirical support was obtained for the Interspecies Model of Prejudice among diverse samples including university students (Study 1), children (Studies 2 and 3), and adult-aged samples (Study 3). Importantly, each study also highlights the promising social implication of targeting the human-animal divide in interventions to reduce dehumanization and other prejudicial processes.

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## CHAPTER 1: GENERAL INTRODUCTION

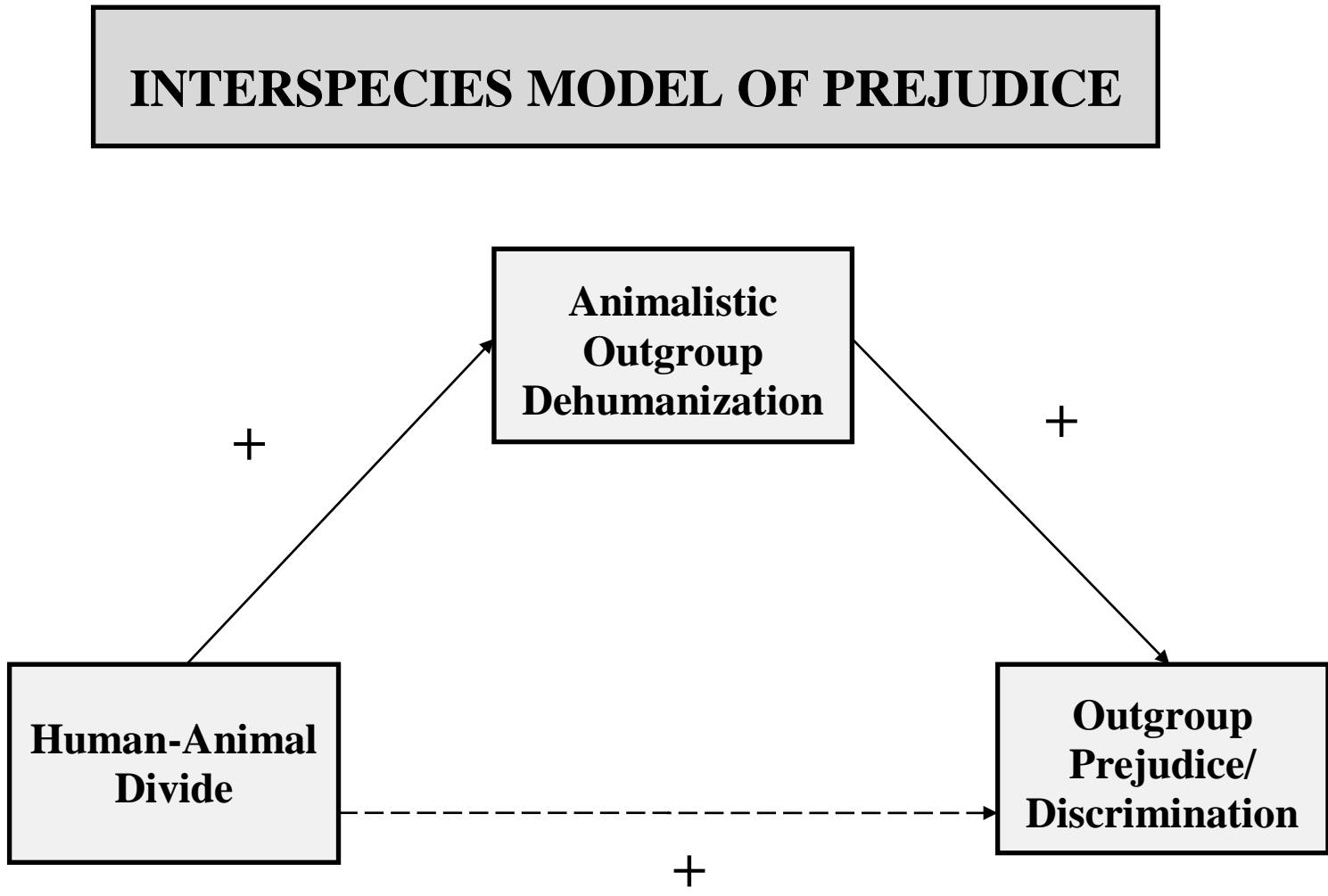
Many historical occurrences of extreme intergroup violence were fueled and sustained by dehumanizing characterizations of the enemy (Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). Arguably the most documented examples of dehumanization include the enslavement of Blacks in America, the annihilation of Indigenous people by European colonists, and the genocide of Jews during the Holocaust. In each case, the enemy was systematically stripped of their humanity by means of ideologies that explicitly likened them to “inferior” animals. Black slaves were described as “barbaric apes,” Indigenous people as “savage beasts,” and Jews as “parasitic rats” (Jahoda, 1999; Livingstone-Smith, 2011). These dehumanizing metaphors portray the marginalized outgroups as uncivilized, contaminated, morally inferior and ultimately “deserving” of inhumane treatment (Jahoda, 1999; Livingstone-Smith, 2011). Disturbingly, dehumanization is not limited to isolated historical events; rather, dehumanization is a familiar and significant phenomenon today. In contemporary society, dehumanizing metaphors are often used to portray immigrants as infectious parasites or contaminated vermin (O’Brien, 2003). Consider also the prevalent use of dehumanizing metaphors in discussions of the recent “War on Terror” -- Canadian media consistently referred to Muslims and Arabs in *animalistic* terms, with media reports likening the war itself to a “hunting expedition,” and enemy camps to “nests” or “caves” (Stueter & Wills, 2009). These dehumanizing metaphors arguably paved the way for the infamous degradation and prisoner abuses inside Abu Ghraib (Stueter & Wills, 2009).

Clearly dehumanization can lead to serious intergroup consequences, which highlights the need for systematic examination into the probable causes of dehumanizing

processes. At present, however, very little is known about factors contributing to dehumanization of other humans. The Interspecies Model of Prejudice (Costello & Hodson, 2010, in press; Hodson, MacInnis, & Costello, in press) specifies that basic hierarchical beliefs regarding human superiority over animals lay the foundation for the dehumanization of other humans (see Figure 1-1). The general goal of this dissertation is to gain a more complete understanding of the determinants of and solutions to dehumanization by examining the Interspecies Model of Prejudice first from a layperson perspective, and then among young children. In this Chapter, I will first review the relevant literature pertaining to dehumanization, human-animal divide, and the Interspecies Model of Prejudice. Furthermore, given that Studies 2 and 3 of the dissertation explore the Interspecies Model of Prejudice among children, I will provide a brief overview of the literature on prejudice development in children.

### **Dehumanization**

Dehumanization can be defined as a psychological belief or representation that an entire group of people is “less human” and consequently more “animal-like” (Hodson et al., forthcoming; see also Haslam, 2006; Leyens et al., 2000). Certainly, dehumanization can also involve objectification (i.e., viewing a target as a means to an end; see Nussbaum, 1999), mechanization (i.e., viewing a target as machine-like; see Haslam, 2006), or de-individualization (i.e., viewing a target as meaningless or non-autonomous beings; see Barnard, 2001). For the present dissertation, however, I am interested in the human-animal divide as a precursor to dehumanization. Consequently, I focus on *animalistic* dehumanization (i.e., viewing outgroups as animal-like).



**Figure 1-1.** Conceptual illustrations of the Interspecies Model of Prejudice (based on Costello & Hodson, 2010).

Dotted line represents a path predicted to be weak (or non-significant) when dehumanization is included as a mediator.

Historically, dehumanization has received scattered attention within the scientific literature. Many classic psychological theories consider dehumanization as a psychological process that justifies interpersonal or intergroup conflict. For example, Opatow (1990, 1995) considers dehumanization a form of moral exclusion whereby marginalized others are denied basic humanity and are subsequently considered undeserving of humane treatment. Similarly, Bandura (1999, 2002) viewed dehumanization as a psychological mechanism that allows people to circumvent or “disengage” their natural inhibitions towards harming others; after all, dehumanized others are less worthy of ethical treatment. In support, Bandura, Underwood, and Fromson (1975) conducted an experiment in which participants were asked to deliver electric shocks to targets who were described in neutral, humanizing (e.g., perceptive and understanding) or dehumanizing (e.g., animalistic and rotten) terms. Participants administered electric shocks at a significantly greater intensity to targets who were described in dehumanizing (*versus* humanizing or neutral) terms. In a more recent study, Osofsky, Bandura, and Zimbardo (2005) examined the use of dehumanization by corrections personnel in US penitentiaries who were directly (i.e., executioners) or indirectly (i.e., support staff and prison guards) involved in the execution of the death penalty. In support of theorizing that dehumanization is a form of moral disengagement, executioners (*versus* support staff or guards) were significantly more likely to dehumanize prisoners as evidenced by increasing beliefs that prisoners were not human beings.

Other approaches consider dehumanization as a psychological consequence of intergroup (*versus* interpersonal) conflict. Specifically, Bar-Tal (1989) refers to

delegitimization strategies, which are used to create negative portrayals of outgroups who are perceived as violating human values. According to Bar-Tal, dehumanization is one type of delegitimization that involves categorizing the outgroup as non-humans (e.g., savages, monsters). Accordingly, delegitimization strategies, such as dehumanization, justify extreme intergroup (*versus* interpersonal) violence and ultimately inhibit conflict resolution. For example, the ongoing Israeli–Palestinian conflict (e.g., terror attacks) is thought to be fuelled by delegitimizing portrayals (e.g., dehumanizing representations) of each of the respective outgroups, which undoubtedly perpetuates the violence and prevents peaceful resolution (Oren & Bar Tal, 2006).

In another intergroup (*versus* interpersonal) approach, Struch and Schwartz (1989) argue that dehumanizing perceptions are rooted in perceived intergroup differences in pro-social values or morals. Specifically, Struch and Schwartz found that intergroup conflict is associated with greater perceptions that an outgroup is deficient in or in violation of pro-social values (e.g., helpfulness, forgiveness, and compassion), which increases support for outgroup negativity. In line with this reasoning, Esses, Veenvliet, Hodson, and Mihic (2008, Study 3) report evidence that Canadian participants express greater contempt for refugees and less support for Canadian refugee policies when refugees are described in a dehumanizing manner (*i.e.*, as violating moral values).

Most of the theories discussed thus far concern blatant forms of dehumanization that are believed to predict or justify violence at the interpersonal or intergroup level. Contemporary theorizing, however, recognizes that dehumanization can also take more subtle forms, emerging even in the absence of extreme intergroup violence (Haslam, 2006; Leyens et al., 2000, 2001). For example, recent theorizing focuses on the subtle

tendency for people to perceive their ingroup as possessing a more complete “human” essence than the outgroup (Haslam, 2006; Leyens et al., 2000, 2001). This approach to dehumanization assumes that the “human essence” is represented by characteristics that separate humans from animals (e.g., emotions, language, morality, intelligence).

Consequently, outgroups who are denied or attributed fewer of these uniquely human characteristics are considered less civilized and ultimately more animal-like (Haslam, 2006; Leyens et al., 2000, 2001).

Perhaps the most influential attribute-based theory of dehumanization is the Infraclassification theory by Leyens and colleagues (2000, 2001). The authors focus on the attribution of uniquely human emotions to the ingroup *versus* outgroup, and in doing so, distinguish between secondary and primary emotions. Secondary emotions (e.g., compassion, remorse, and guilt) are generally perceived to be higher-order in nature and relatively unique to humans. In contrast, primary emotions are assumed to be primitive in nature and include sentiments that humans share with other animals (e.g., happiness, sadness, and fear; Demoulin et al., 2004). According to the infraclassification hypothesis people reserve the experience of uniquely human (secondary) emotions, and hence a greater human essence, to members of their ingroup (*versus* outgroup), representing a subtle form of dehumanization (Leyens et al., 2000, 2001; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007). Numerous studies testing the infraclassification hypothesis indicate that people do attribute fewer and/or deny outgroup members the complete experience of emotions that are believed to be unique to humans (Demoulin et al., 2004; Leyens et al., 2000, 2001). In contrast, emotions that humans share with other animals are not typically denied to the outgroup relative to ingroup. Importantly, the

infracommunication effect is not reducible to mere preferences for the ingroup because both positive and negative uniquely human emotions are typically denied to the outgroup (Leyens et al., 2000, 2001, 2007).

The infracommunication effect has now been verified in several cultures using various methodologies. In addition to self-reported attributions of emotions to the ingroup versus outgroup, the infracommunication hypothesis has also been supported using implicit measures including an adapted version of the implicit association task (Paladino et al., 2002) and the process-dissociation procedure (Gaunt, Leyens, & Demoulin, 2002). For example, in Paladino et al. (2002) participants were faster at responding to compatible stimuli pairings involving the outgroup (*versus* ingroup) and primary emotions, and the ingroup (*versus* outgroup) and secondary emotions. In another study, Vaes, Paladino, and Leyens (2006) showed that the concept of humanity is activated only when the ingroup (not outgroup) is implicitly linked with uniquely human (secondary) emotions. These studies confirm that uniquely human emotions are reserved for the concept of humanity that is associated with the ingroup and not the outgroup.

Haslam (2006) and colleagues present a model of dehumanization that also focuses on the denial of uniquely human qualities to others. However, the focus of Haslam's theory concerns the attribution of uniquely human personality characteristics (as opposed to emotions). Akin to the Infracommunication Hypothesis, Haslam argues that animalistic dehumanization occurs when uniquely human traits are denied to others, thereby rendering them as uncivilized, immoral, and inferior. However, Haslam expands his conception of dehumanization to include a second dimension of the human essence, "human-nature." That is, he argues that people can also be denied characteristics that are

considered *essential*, but not necessarily unique, to humans (e.g., emotion, warmth, and depth). The denial of these human-nature (as opposed to uniquely human) traits is thought to lead to mechanistic (not animalistic) dehumanization, with targets rendered cold and rigid, and ultimately likened to machines. Pertaining to Haslam's theory of animalistic dehumanization, participants typically judge traits that are indicative of Conscientiousness (e.g., conservative) and Openness (e.g., artistic) as more uniquely human in nature (Haslam, Bain, Douge, Lee, & Bastian, 2005; see also Hodson & Costello, 2007). Additionally, research finds that uniquely human traits are seen as more representative of the self relative to others (Haslam et al., 2005). Pertaining to intergroup relations, we find in our own research that participants are also less likely to attribute uniquely human traits (i.e., openness and conscientiousness) to immigrants relative to their Canadian ingroup (Costello & Hodson, 2010; Hodson & Costello, 2007).

Other contemporary research on dehumanization focuses on implicit dehumanizing metaphors or mental associations measured using social-cognitive methodology. For example, using the Implicit Association Task, Viki et al. (2006) found that participants demonstrate stronger automatic associations between "human" words (e.g., humanity, citizen) and the ingroup (*versus* outgroup), and between "animal" words (e.g., feral, creature) and the outgroup (*versus* ingroup), regardless of the word valence (i.e., positivity or negativity). Similarly, Boccato, Capozza, Falva, and Durante (2008) report evidence that people are faster at categorizing ingroup (*versus* outgroup) names when subliminally primed with "human" images (Studies 1 and 2), and outgroup (*versus* ingroup) names when subliminally primed with animal (e.g., chimpanzee) images (Study 2). Additional evidence for implicit outgroup animalization is reported in Goff,

Eberhardt, Williams, and Jackson (2008). Across a series of studies, participants were faster at identifying images of apes when subliminally primed with Black (*versus* White) faces. Moreover, participants were also quicker at identifying Black (*versus* White) faces following exposure to subliminal “ape” primes.

Despite being subtle or implicit in nature, contemporary occurrences of dehumanization still have negative consequences for intergroup relations typifying normal, everyday life. Some research indicates that the denial of uniquely human characteristics to outgroups predicts more negative intergroup attitudes. For example, in Costello and Hodson (2010, Study 1), participants attributed fewer uniquely human emotions and traits to immigrants relative to their Canadian ingroup, a tendency that in turn predicted more negative attitudes toward immigrants.

Other research highlights the detrimental effects that subtle dehumanization can exert on intergroup helping. In Costello and Hodson (2011), we experimentally manipulated whether immigrants were described as posing symbolic threats (to values and traditions), realistic threats (to resources, safety, and well-being), or no threat (control) to the host society. Overall, we found that Canadians who prefer social dominance and inequality were more likely to deny uniquely human emotions to immigrants when the immigrants were perceived to be threatening to the ingroups’ culture (i.e., symbolic threats). Importantly, the increased dehumanization under conditions of symbolic threat predicted reduced willingness to offer aid to both fictitious and real immigrant outgroups. In another study, Cuddy, Rock, and Norton (2007) examined the effect of dehumanization on intergroup helping during the aftermath of hurricane Katrina. Participants dehumanized outgroup victims by denying them the

experience of negative uniquely human emotions (e.g., anguish) relative to ingroup victims. Moreover the more participants dehumanized outgroup victims the more resistant they were to providing relief assistance to this group. Lastly, Goff and colleagues (2008) explored the contemporary consequences of unconscious Black-Ape dehumanizing associations within the criminal justice system. In their fourth study, implicit Black-ape associations predicted greater support for police violence toward a Black (*versus* White) crime suspect. Even more disturbingly, Goff and colleagues (Study 5) report evidence that Black criminals who are portrayed as more ape-like in actual news stories are more likely to be sentenced to the death penalty. Overall the research reviewed provides strong evidence that even subtle dehumanization is associated with prejudicial attitudes and outgroup discrimination.

Other research suggests that dehumanization can also emerge to rationalize past negative intergroup conflict, and in doing so, negatively impacts chances for healing and reparation. For example, Castano and Giner-Sorolla (2006) examined the emergence of dehumanization after exposing participants to one of two experimental conditions describing a past outgroup atrocity caused by either the ingroup or accidental circumstances. Across several experiments, participants in the collective responsibility condition (i.e., where ingroup was responsible for violence to another group) were more likely to infra-humanize fictitious (Study 1) and actual (Studies 2 and 3) outgroup targets by denying them the full experience of uniquely human emotions. The authors concluded that dehumanization can also operate as a subtle self-defense mechanism to protect people from accepting responsibility and/or feeling guilty for past wrongdoings by their ingroup (see also Cehajic, Brown, & Gonzalez, 2009). Moreover, Zebel, Zimmermann,

Viki, and Doosje (2008) found that dehumanization also inhibits support for reparation policies that benefit disadvantaged outgroups. In this study, participants were more likely to associate “animal” words with the outgroup and “human” words with the ingroup, and these automatic links each predicted weaker support for reparation policies benefiting Islamic people (outgroup). Moreover, the effect of dehumanization on support for reparation policies was partially explained by reduced feelings of collective guilt for the atrocities committed (Zebel et al., 2008). In another study, Tam et al. (2008) investigated the consequences of infrahumanization for intergroup forgiveness within a context characterized by genuine intergroup conflict (i.e., Protestants *versus* Catholics in Northern Ireland). Overall, infrahumanization (i.e., denial of uniquely human emotions to the outgroup versus ingroup) hindered the willingness to forgive an outgroup for past atrocities (Tam et al., 2008).

Despite the accumulating evidence for subtle dehumanization as a vital precursor to prejudice and negative intergroup relations, surprisingly little is known about the origins of dehumanizing processes. Discussed next is the Interspecies Model of Prejudice, which specifies that beliefs in the human-animal divide may be responsible for facilitating dehumanization (Costello & Hodson, 2010, in press; Hodson et al., in press).

### **Interspecies Model of Prejudice**

Some theorists argue that human prejudices are motivated by ideologically driven beliefs in the human-animal divide and accompanying connotations of human superiority over animals (Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). Theoretically, the human-animal divide reflects an ideological belief system of human supremacy, where humans are considered fundamentally distinct from, superior to and ultimately more

important than non-human animals. The idea that humans are superior to animals has persisted throughout history, being discussed by religious theologians and philosophers alike. Arguably, the notion of a human-animal hierarchy originated with Aristotle who coined the theoretical hierarchy referred to as *scala naturae*. To Aristotle, this hierarchy was a system used to classify the existence of all things ranging from inanimate objects to plants, animals, and ultimately humans (as cited in Brandt & Reyna, 2011). Over time, the hierarchy has expanded to include additional categories (e.g., demonic to supernatural) and in doing so has become less descriptive and more moral in nature (Brandt & Reyna, 2011). Accordingly, Brandt and Reyna theorize that a social target's perceived position on the moral "chain of being" has serious consequences for how the target is viewed and/or treated. Specifically, targets falling lower on the hierarchy, such as non-human animals, are considered morally inferior and ultimately more "deserving" of exclusion and exploitation (i.e., speciesism). Today, Western societies in particular, continue to place great emphasis on the perceived dividing line between humans and animals (Noske, 1997). Indeed, we are socialized from a young age to endorse the hierarchical human-animal divide through exposure to cultural teachings (e.g., religious doctrine) that express human dominion over animals, the mass consumption of animal products, and participation in industries that prosper from exploiting non-human animals.

Some argue that the mere concept of a hierarchical divide between humans and animals also necessitates the assumption that some "humans" are more/less valuable than others, depending on their ranking in the human-animal hierarchy (Hodson et al., in press; Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). Human groups that are judged as being closer in resemblance to non-human animals are considered "sub-

humans,” and, like non-human animals, are naturally devalued and exploited (Patterson, 2002). More specifically, Patterson (2002) argues “human domination, which promotes and justifies the exploitation of animals, legitimized the oppression of humans alleged to be in an animal condition” (p. 25). In keeping with this reasoning, our Interspecies Model of Prejudice (see Figure 1-1) specifies that hierarchical human-animal divide beliefs are associated with heightened outgroup negativity because such beliefs systematically strengthen the derogatory meaning of animalistic dehumanization (Costello & Hodson, 2010, in press; see also Hodson et al., in press).

In support of this reasoning, Costello and Hodson (2010, Study 1) provided evidence that dehumanization indeed takes root in perceptions of a hierarchical human-animal divide. In our first study, we found that university students who endorse greater beliefs in the human-animal divide are more likely to exhibit prejudice toward immigrants generally. This happens, we confirmed, because the human-animal divide facilitates greater beliefs that immigrants possess fewer uniquely human characteristics (i.e., dehumanization; Costello & Hodson, 2010, Study 1). Thus, outgroup dehumanization *explains* the link between perceptions of human superiority over animals and human outgroup prejudice (see conceptual Figure 1-1). Moreover, those scoring higher in social dominance orientation (SDO; Sidanius & Pratto, 1999), an ideology involving preferences for social hierarchy in general, were naturally more inclined to believe in a hierarchical human-animal divide. This last finding suggests that the human-animal divide may stem from basic social-motivational concerns about social dominance in general.

In a subsequent study (Costello & Hodson, 2010, Study 2) we reasoned that because dehumanization emerges from heightened human superiority beliefs, narrowing the human-animal divide should reduce dehumanizing tendencies. To test this proposition, we randomly exposed participants to one of four editorials containing scientific information emphasizing animals' similarity to humans, humans' similarity to animals, animals' inferiority to humans, or humans' superiority to animals. Overall, participants in the "animals are similar to humans" condition exhibited significantly lower immigrant dehumanization (denial of uniquely human traits and emotions) relative to the other experimental conditions. Moreover, the lower dehumanization in this condition facilitated positive intergroup inclusivity between immigrants and Canadians (i.e., a sense of "we/us") and greater empathy toward immigrants, both of which predicted more favourable attitudes toward immigrants (Costello & Hodson, 2010, Study 2).

Critically, our research also highlights the significance of framing human-animal comparisons. Specifically, only the condition that induced beliefs that animals are similar to humans facilitated greater attribution of uniquely human characteristics to immigrants (Costello & Hodson, 2010, Study 2). In contrast, animalizing humans by highlighting humans' similarity to animals was associated with negativity towards immigrants, akin to emphasizing the human-animal divide. We reason that thinking about humans as animal-like makes salient our "animal-nature" thereby justifying our endorsement of morally questionable intergroup attitudes and behaviours (see also Bastian, Costello, Loughnan, & Hodson, 2012). In line with this reasoning, Bastian et al. (2012, Study 3) also found that an experimental prime highlighting animal-to-human similarities (but not human-to-animal similarities) heightened moral concern towards marginalized human outgroups. In

other words, reducing the gap between animals and humans by “humanizing” animals (not by animalizing humans) can delegitimize the dehumanization of human outgroups and in some cases improve intergroup attitudes.

### **Lay Beliefs About Dehumanization**

Clearly dehumanization is an important precursor to prejudice, with mounting evidence indicating that the human-animal divide is an important predictor of dehumanization. Despite the emerging evidence for the Interspecies Model of Prejudice, we have observed anecdotally through conversations with laypeople, colleagues, and reviewers, that people are largely oblivious of, and sometimes resistant to acknowledge the notion that our thinking about animals facilitates negative inter-human relations. Insight into non-expert’s explanatory belief systems is important for understanding the nature of social phenomena, as such knowledge can influence scientific theory development and implementation (Levy, Chiu, & Hong, 2006). According to Levy and colleagues, scientific theories do not always reflect lay perceptions. Indeed, for cognitive or motivational reasons, people often have poor insight into their own psychological processes (Nisbett & Wilson, 1977). The first study of this dissertation (see Chapter 2) therefore investigates whether laypeople are “unaware” of the impact that human-animal divide plays in predicting animalistic dehumanization, despite recent empirical research demonstrating the importance of the human-animal divide for human intergroup relations (Bastian et al., 2012; Costello & Hodson, 2010, in press). If people are unaware of the possibility that human-animal divide beliefs influence dehumanizing tendencies, they may be hesitant towards, or resistant, to implementing or participating in interventions that target the human-animal divide to reduce dehumanization.

### Dehumanization Among Children

If the ultimate goal is to reduce dehumanization, it is imperative that we better understand children's dehumanizing tendencies and whether they also take root in human-animal divide belief systems. Consequently, Studies 2 and 3 of this dissertation examine the Interspecies Model of Prejudice among children (see Chapter 3). To provide a context for Studies 2 and 3, I will next provide a brief overview of the developmental literature pertaining to prejudice and dehumanization among children.

It is well established that children display prejudicial attitudes toward racial outgroups by middle childhood (Aboud, 2003; Bigler & Liben, 2007; Rutland, Cameron, Milne, & McGeorge, 2005). Many theories have been proposed to explain this emergence of prejudice among children, with the most relevant approaches discussed here. Aboud's (1988) influential social-cognitive theory specifies that prejudice development is dependent on individual differences in cognitive-perceptual abilities. Specifically, abstract (*versus* concrete) reasoning and inclusive (*versus* rigid) categorization abilities are considered important precursors to racially *unbiased* expressions in children (Aboud, & Spears Brown, 2013; Bigler, Jones, & Loblinger, 1997; Bigler & Liben, 1992). For example, Doyle and Aboud (1995) report evidence that conservation skills (i.e., the ability to recognize that different objects/people can actually have similar properties despite apparent physical differences), are associated with more flexible and favourable intergroup attitudes. Moreover, longitudinal research indicates that weaker cognitive ability in childhood predicts greater prejudice in adulthood (Deary, Batty, & Gale, 2008; Hodson & Busseri, 2012).

Rooted in psychodynamic theory are approaches to the development of prejudice that focus on individual differences in personality. More specifically, children who are exposed to authoritarian parenting (characterized by harsh discipline and rejection) are thought to develop prejudiced attitudes due to the emergence of abnormal personality traits (Adorno, Frenkel-Brunswik, Levinson, & Sanford; 1950; Allport, 1954; Altemeyer, 1996). In support, Hassan (1987) found that adolescents who reported experiencing authoritarian child rearing were more likely to exhibit heightened prejudice.

Other theoretical accounts of children's prejudice focus on social influences. For example, it is believed that children have strong desires to conform to parental norms and consequently observe and internalize parental prejudices (Allport, 1954; see also Altemeyer, 1996). Indeed, research by Sinclair, Dunn, and Lowery (2005) indicates that children who highly identify with their parents exhibit greater implicit prejudices to the extent that their parents also exhibit heightened (explicit, observable) prejudice. In another study, Rodriguez-Garcia and Wagner (2009) report evidence that parental prejudice directly predicts child prejudice, even after controlling for important variables including the child's sex and age, and parent's and child's outgroup contact experiences (see also White & Gleitzman, 2006). Parental ideological variables have also been empirically linked to children's expressions of prejudice. Specifically, parents characterized by prejudice-related ideologies, namely social-dominance orientation (and right-wing authoritarianism), are more likely to raise prejudiced children (Duriez & Soenens, 2009). Overall, these studies provide evidence that children's prejudices are determined in part by prejudicial parental attitudes and ideologies associated with preference for social dominance generally.

Also considered in the developmental literature are motivational roots for children's prejudices, such as the desire to comply with social-norms and to maintain a positive self image (e.g., Rutland et al., 2005). For example, Monteiro, de Franca, and Rodrigues (2009) randomly assigned White children to experimental conditions of high (experimenter present) or low (experimenter absent) public accountability and subsequently completed a resource allocation task. The results indicated that children distributed less money to a Black (*versus* White) child under the low (*versus* high) accountability condition. In another series of experiments, Nesdale and colleagues (2005) experimentally manipulated both societal norms for prejudice (i.e., ingroup's preference for intergroup exclusion *versus* inclusion) and perceived outgroup threat (i.e., competitive *versus* harmonious intergroup contexts). In this study, children expressed higher levels of prejudice when exposed to a combination of social norms about outgroup exclusivity and intergroup competition (see also Rutland et al., 2005). These studies suggest that children's expressions of prejudice are sometimes determined by motivated desires to adhere to societal norms regarding public expressions of prejudice and perceived outgroup threat.

These developmental approaches have undoubtedly advanced our understanding of prejudice in children. Notably absent from the extant literature, however, is the role of outgroup dehumanization as a precursor to prejudice development among children. To date, only a handful of studies have attempted to examine children's propensity for dehumanization. In a study by Bandura, Barbaranelli, Caprara, and Pastorelli (1996), older children (aged 10-15) who scored higher in moral disengagement, a measure that contained one item tapping the extent to which people deserve to be treated like animals,

reported being more antisocial and aggressive towards others. However, given that the authors did not use a sole measure of dehumanization, the unique influence of dehumanization on the dependent measures remains unknown.

The only other studies that attempted to measure dehumanization among children are based on Leyens and colleague's (2000, 2001, 2007) Infracommunication Hypothesis. In a study by Brown, Eller, Leeds, and Stace (2007) children between the ages of 11 and 16 attributed fewer positive uniquely human emotions to students from a neighbouring (outgroup) versus home (ingroup) school. Furthermore, this index of dehumanization was associated with heightened negativity toward members of the student outgroup (Brown et al., 2007). Similarly, in a study by Martin, Bennett, and Murray (2008) younger children between the ages of six and eleven showed evidence of subtle dehumanization by attributing more intense uniquely human emotions to their National sports team (ingroup) relative to members of an opposing sports team (outgroup). Together, these studies provide preliminary evidence for children's capacity for subtle dehumanization involving the attribution of uniquely human emotions, but they are limited by focusing on trivial social outgroups (e.g., schools, teams) and the use of dehumanization measures that were not always reliable (see Brown et al., 2007). Thus, it remains unknown as to whether children engage in *racial* dehumanization specifically. Studies 2 and 3 (Chapter 3) examine children's dehumanization of a marginalized *racial* outgroup using standard dehumanization measures adapted for use with children (i.e., attributions of "human" characteristics).

Do children hold meaningful beliefs in the human-animal divide? Previous research indicates that children are generally supportive of human's exploitation of

animals if such practices are deemed necessary for human benefit and/or do not involve death, such as the use of animals for human entertainment (Wells & Hepper, 1995). Given these findings, and the existence of entrenched societal norms for human superiority over animals (Plous, 2003), it should be possible to measure individual differences in the extent to which children endorse or reject human-animal divide beliefs. Consequently, Studies 2 and 3 of this dissertation (Chapter 3) also examine whether children's dehumanizing tendencies are rooted in human-animal divide beliefs, as specified by the Interspecies Model of Prejudice. Overall, these studies will considerably enhance our understanding of dehumanization and prejudice development in children as well as highlight novel contributors to dehumanization (i.e., the human-animal divide) that can be targeted in prejudice interventions. With this objective in mind, Studies 2 and 3 (Chapter 3) also consider the flexibility of children's human-animal divide beliefs, exposing them to a manipulation of human-animal similarity paralleling that used among university students in Costello and Hodson (2010, Study 2).

### **Dissertation Structure**

Each of the studies reported in this dissertation addresses research questions that are central to our understanding of dehumanization. In Chapter 2, I report Study 1, which examines whether laypeople acknowledge the human-animal divide as a probable cause of and/or solution to dehumanization (and prejudice). Studies 2 and 3 are reported in Chapter 3. Study 2 is a preliminary analysis involving a small sample of children aged six to ten, that was conducted to validate the child-friendly measures, to determine whether children engage in racial dehumanization, and to explore basic correlations among the Interspecies Model of Prejudice variables (i.e., human-animal divide, dehumanization,

and prejudice). In Study 3, the Interspecies Model of Prejudice is formally tested among a larger sample of children, considering also the extent to which children's human-animal divide beliefs are informed by parental ideology (i.e., SDO). Also examined is the effect of an experimental manipulation of human-animal similarities (*versus* control) on children's beliefs in the human-animal divide. Finally, in Chapter 4, I summarize and integrate the main findings from the three studies reported, discuss limitations, as well as consider the implications for future research and dehumanization interventions.

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## CHAPTER 2

This section is based on the following article: Costello, K., & Hodson, G. (in press). Lay beliefs about the causes of and solutions to dehumanization and prejudice: Do non-experts recognize the role of human-animal relations? *Journal of Applied Social Psychology*

Note: The article submitted did not include analyses on the causes of or solutions to human-animal divide, or Footnote 1, but these analyses are included in this thesis chapter.

### Abstract

We investigate lay-people's beliefs about the causes of and solutions to outgroup dehumanization and prejudice. Specifically, we examine whether non-experts recognize the role that beliefs in the human-animal divide play in the formation and reduction of intergroup biases, as observed empirically in the Interspecies Model of Prejudice (Costello & Hodson, 2010, in press). Interestingly, despite evidence in the present study that human-animal divide beliefs predict greater dehumanization and prejudice, participants strongly rejected the human-animal divide as a probable cause of (or solution to) dehumanization or prejudice. We conclude with a meta-analytic test of the relation between human-animal divide and prejudice (mean  $r = .34$ ) in the literature, establishing the human-animal divide as an important but largely unrecognized prejudice precursor. Applied implications for the development and implementation of prejudice interventions are considered.

**Lay Beliefs About the Causes of and Solutions to Dehumanization and Prejudice:  
Do Non-Experts Recognize the Role of Human-Animal Relations?**

*"The animals of the world exist for their own reasons, they were not created for men  
anymore than black people were created for whites or women for men"*  
~Alice Walker

*"I am in favor of animal rights as well as human rights. That is the way of a whole human  
being."*  
~Abraham Lincoln

*"Auschwitz begins wherever someone looks at a slaughterhouse and thinks: they're only  
animals"*  
~Theodor Adorno

*"The greatness of a nation and its moral progress can be judged by the way its animals  
are treated"*  
~Mahatma Gandhi

Some of the most prominent and influential thinkers of the last few centuries have put forth the idea that how we interact with non-human *animals* has important implications for how we view and treat *each other* (i.e., humans). This proposition seems, on the surface, extremely credible, given that all forms of injustice (e.g., racism, sexism or speciesism) ultimately involve a hierarchical divide whereby a dominant group (e.g., Whites, men, humans) seeks to oppress a lower-status group (e.g., Blacks, woman, animals). Regarding human-animal relations specifically, some theorists note the parallels between animal exploitation and the oppression of Blacks during slavery or Jews during the Holocaust to highlight the interconnections among these injustices (Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). A very powerful way to degrade another human group, therefore, is to deprive them of the very qualities that are believed to separate humans from "lower" animals, a process referred to as *dehumanization*. Indeed, when individuals or entire groups are equated with inferior

animal-kinds (i.e., dehumanized), they are placed outside the boundary of moral consideration, thereby leaving them vulnerable to targeted discrimination (Bandura, 1999; Bar-Tal, 1989; Opatow, 1990). By its nature, however, dehumanization would serve little purpose if society did not place a lesser value on non-human animals relative to humans. In other words “the very act of ‘treating people like animals’ would lose its meaning if animals were treated well” (Plous, 2003b, p. 510). It is possible, therefore, that our basic hierarchical beliefs regarding human superiority over animals lay the foundation for many of our prejudices and discriminatory behaviors towards *other humans*. This premise forms the basis of the Interspecies Model of Prejudice (Costello & Hodson, 2010, in press; Hodson, MacInnis, & Costello, in press), where beliefs in the human-animal divide are thought to pave the way for human outgroup prejudices by facilitating outgroup dehumanization.

Over the last decade there has been a renewed interest in the scientific study of the impact of dehumanization, but little consideration has been given to the probable causes of dehumanizing processes. Moreover, the psychological community has been largely silent on the notion that human prejudices can be meaningfully connected to our attitudes toward and beliefs about non-human animals. In fact, very few psychology textbooks on prejudice and discrimination include chapters on dehumanization (see Hodson et al., in press), with virtually none discussing human-animal relations (for an exception see Plous, 2003a). Moreover, despite mounting empirical support for the Interspecies Model of Prejudice, we have observed anecdotally that people, including our colleagues and reviewers, are largely oblivious to the role that our thinking about animals plays in facilitating negative inter-human relations. The goal of the present investigation

is to determine empirically whether *laypeople* (i.e., non-experts) are truly unaware of the important role that the human-animal divide plays in facilitating, and perhaps solving, dehumanization and human intergroup prejudices. A true divide between scientific theory (e.g., Interspecies Model of Prejudice) and lay beliefs can have important implications for public policy decision-making. If people are largely unaware of the influential role that our thinking about animals plays in the formation of human intergroup biases, then they may be resistant to interventions and education strategies targeting the human-animal divide as prejudice solutions.

### **Human Outgroup Dehumanization**

Outgroup dehumanization involves beliefs that another group is relatively less human or more animal-like than the ingroup (Hodson et al., in press; see also Haslam, 2006; Leyens et al., 2000). As mentioned, many of the most extreme instances of outgroup-directed violence, such as slavery and genocide, are believed to be contingent on collectivized dehumanization processes (Bandura, 1999; Hagan & Rymond-Richmond, 2008; Livingstone-Smith, 2011). However, outgroup dehumanization can also emerge in the absence of extreme intergroup violence, leading to negative intergroup relations within normal everyday circumstances. For example, subtle instances of dehumanization can impede the willingness to offer immigrant aid (Costello & Hodson, 2011) or outgroup forgiveness (Tam et al., 2007), and can justify discrimination of outgroup members within the judicial system (Goff, Eberhardt, Williams, & Jackson, 2008).

Manifestations of dehumanization can involve explicit animal-outgroup metaphors (Steuter & Wills, 2008), implicit activations of outgroup-animal associations

(Goff et al., 2008; Loughnan & Haslam, 2007), the lesser association of “human” related words to the outgroup (Viki et al., 2006), and the denial of “uniquely human” attributes to outgroups (Haslam, 2006; Leyens, 2000; 2001; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007; see also Costello & Hodson, 2010, in press; Hodson & Costello, 2007). Regarding attribute-based dehumanization, there are numerous characteristics that can form the basis for dehumanizing contrasts. Leyens and colleagues’ emphasize the role of “uniquely human” or “secondary” emotions in their Infracommunication Theory (2000, 2001, 2007). Tests of the infracommunication hypothesis indicate that people deny outgroup members the experience of sophisticated (higher-order) emotions that are believed to be unique to humans, but are content attributing outgroup members the basic sentiments that humans share with other animals (e.g., Demoulin et al., 2004; Leyens et al., 2000, 2001; Paladino et al., 2002). Similarly, according to Haslam’s (2006) dehumanization model, people are also motivated to deny members of the outgroup personality traits that are considered to be more uniquely human, but not traits that humans share with other animals (see also Costello & Hodson, 2010; Hodson & Costello, 2007). By denying outgroups the experience of uniquely human characteristics, members of these outgroups are regarded as less sophisticated/rational and essentially more similar to animals (i.e., *animalistic* dehumanization, Haslam, 2006). In addition to the “uniquely human” aspect of dehumanization, Haslam’s (2006) model incorporates a second dimension of “human nature.” Here, individuals or groups who are perceived as deficient in characteristics that are considered essential, but not necessarily unique, to the human essence are *mechanistically* dehumanized (i.e., considered unemotional and robotic). Although we are primarily concerned with people’s beliefs about animalistic

dehumanization given our focus on human-animal relations, one of our goals is to explore whether laypeople naturally think of dehumanization in terms of animalistic *versus* mechanistic outgroup processes. Given the focus on animalistic dehumanization in the scientific literature, we expect that people will naturally conceive of dehumanization in animalistic (*versus* mechanistic) terms.

Despite being subtle in nature, attribute-based manifestations of dehumanization nonetheless have significant consequences for intergroup relations. The denial of uniquely human characteristics to immigrant outgroups is associated with negative evaluations of immigrants generally (Hodson & Costello, 2007), heightened beliefs that immigrants are undeserving of special treatment (Costello & Hodson, 2010), greater resistance towards empowering immigrants (Costello & Hodson, 2011), reluctance to support government policies favouring refugees (Esses, Veenvliet, Hodson, & Mihic, 2008), and negativity toward reparation policies for outgroups (Zebel, Zimmermann, Viki, & Doosje, 2008). Denying uniquely human characteristics to an outgroup can also absolve the ingroup from taking responsibility for their inconsiderate treatment of an outgroup (Castano & Giner-Sorolla, 2006), diminish the likelihood of intergroup forgiveness during conflict (Tam et al., 2007), and reduce the willingness to help a foreign outgroup member in need of immediate relief assistance (Cuddy, Rock, & Norton, 2007). Although dehumanization is clearly an important precursor to prejudice, surprisingly little is known about its origins. Here, we investigate laypeople's beliefs about the causes of, and solutions to, dehumanization, as well as outgroup prejudice. More specifically, we examine whether or not laypeople *recognize* the contribution that beliefs in the human-animal divide play in the formation and reduction of intergroup

biases, as specified by the Interspecies Model of Prejudice (Costello & Hodson, 2010, in press; Hodson et al., in press).

### **Interspecies Model of Prejudice**

Some theorists argue that dehumanizing processes are motivated by ideologically driven beliefs in the human-animal divide (Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). In keeping with this approach, the Interspecies Model of Prejudice specifies that hierarchical human-animal divide beliefs lead to heightened prejudice because such beliefs strengthen the derogatory importance of animalistic dehumanization (Costello & Hodson, 2010, in press; see also Hodson et al., in press). That is, by placing a psychological barrier between humans and animals, people can justify their negativity towards outgroups that they perceive to be closer in nature to non-human animals.

Empirical support for the processes underlying the Interspecies Model of Prejudice has been found among university students, community adults, and young children. For example, in Costello and Hodson (2010), greater beliefs in the human-animal divide systematically predicted university students' prejudice by fostering dehumanizing representations of immigrants, or more specifically, beliefs that immigrants possess fewer uniquely human characteristics than the ingroup. Similarly, in Costello and Hodson (in press), White children exhibiting greater human-animal divide beliefs were more prejudiced toward Black children, with racial dehumanization mediating this relation. Thus, outgroup dehumanization *explains* the link between perceptions of human superiority over animals and outgroup prejudice. Moreover, those scoring higher in social dominance orientation (SDO; Sidanius & Pratto, 1999), an ideology involving preferences for social hierarchy are, unsurprisingly, more inclined to

endorse beliefs in the human-animal divide (Costello & Hodson, 2010, Study 1). In fact, children of high SDO parents also hold greater beliefs in the human-animal divide (Costello & Hodson, in press, Study 2). The human-animal divide, therefore, appears to be a fundamental *cause* of dehumanization, perhaps stemming from basic cognitive and social-motivational concerns about social dominance in general.

One implication of this finding is that if the human-animal divide truly drives prejudice by facilitating dehumanizing representations of outgroups, it should be possible to reduce dehumanization by blurring or reducing the human-animal divide. Experimental research indicates that human-animal divide beliefs are indeed malleable. For example, experimentally narrowing the human-animal divide via editorials highlighting the similarities among humans and animals significantly reduced prejudice toward immigrants by decreasing outgroup dehumanization (Costello & Hodson, 2010, Study 2). Critically, these “re-humanizing” effects were dependent on the framing of the human-animal comparison. As anticipated, inducing perceptions that animals are similar to humans (*and not that humans are similar to animals*) led to the re-humanization of immigrants (i.e., increased attributions of uniquely human characteristics), which resulted in increased empathy and inclusivity toward immigrant outgroups and ultimately lower levels of immigrant prejudice (Costello & Hodson, 2010, Study 2). In contrast, inducing beliefs that *humans are like animals* proved detrimental, eliciting defensive reactions and heightening negativity towards the immigrant outgroup. In a related study, inducing animal-to-human similarities (but not human-to-animal similarities) similarly led to heightened beliefs that marginalized outgroups are more worthy of moral concern (Bastian, Costello, Loughnan, & Hodson, 2012, Study 3). Thus, closing the human-

animal divide by highlighting the similarity of animals to humans reduces outgroup prejudice by delegitimizing or disempowering dehumanization.

### **Lay Perspectives on Dehumanization and Prejudice**

Lay beliefs reflect non-expert's explanatory knowledge or belief systems about the nature of and interrelations among (social) phenomena (Levy, Chiu, & Hong, 2006). Lay beliefs, like formal scientific theories, offer meaningful insight into people's psychological perceptions and thus provide structure and meaning to one's social world (Crandall, 2000; Levy et al., 2006). It is established that people have prevalent belief systems about the nature of prejudice and that these beliefs contribute to and sometimes justify negative intergroup attitudes and relations (Crandall & Eshleman, 2003; Levy et al., 2006). For example, people vary in their beliefs about essentialism and group entitativity (e.g., Haslam, Rothschild, & Ernst, 2002), the flexibility versus rigidity of human attributes (Levy, Stroessner, & Dweck, 1998), and the extent to which intergroup similarity/familiarity guide intergroup behaviours (Cameron, Alvarez, Ruble, & Fuligni, 2001). Of particular relevance is research by Hodson and Esses (2005), which demonstrated that people hold coherent beliefs about the causes and solutions to ethnic prejudice. In that study, laypeople reported that ignorance, parental influence, and negative intergroup contact are critical determinants of ethnic prejudice, forwarding education and positive parental influence as the most viable methods for reducing prejudice. To date, however, researchers have yet to directly examine lay beliefs about the causes and solutions to *dehumanization*, an important precursor to prejudice. Of prime interest, we explore lay beliefs about the extent to which the human-animal divide impacts both dehumanization and ethnic prejudice.

Scientific theories and lay perceptions do not always share conceptual overlap, and lay beliefs are often less clear and systematic than scientific theories (Levy et al., 2006). Nisbett and Wilson (1977) argue that people often have poor insight into their own psychological processes, particularly with regards to explanatory causes of social phenomena. Thus, it is possible that lay views on the causes and solutions to dehumanization deviate considerably from those factors established by scientific research. Specifically, people may be unaware of the impact that human-animal divide plays in predicting negative intergroup relations, despite recent empirical research demonstrating otherwise. Uncovering such patterns is problematic because experimentally closing the human-animal divide can systematically reduce dehumanization and subsequent prejudices (see Costello & Hodson, 2010, Study 2; see also Bastian et al., 2012).

In summary, we explore non-expert's construal of the relations underlying the Interspecies Model of Prejudice. First we expect that people will naturally define dehumanization in animalistic (*versus* mechanistic) terms (H1). We then expect White participants to demonstrate attribute-based dehumanization, operationalized as the lesser attribution of uniquely human characteristics (i.e., traits and emotions) to Blacks versus Whites (H2). In keeping with the Interspecies Model of Prejudice, participant's greater beliefs in the human-animal divide are expected to systematically predict prejudice with this relation explained by increased dehumanization (H3). Finally, in our main analysis, we explore whether the human-animal divide is an unrecognized belief system setting the foundation for dehumanization and prejudice. Specifically, we expect that non-experts will fail to recognize the importance of human-animal divide beliefs when asked about

the causes of dehumanization (H4) or prejudice (H5), and the solutions to dehumanization (H6) or prejudice (H7).

## Methods

### Participants and Procedure

Participants included 140 undergraduate students from a Canadian University who participated for course credit or \$5 payment. One participant self-categorized as Black and was excluded from analyses, given the focus on prejudice toward Blacks. The final sample included 139 participants ( $M_{age} = 19.68$ ,  $SD = 2.53$ ). The sample was primarily female (113 women, 26 men) and Caucasian/ White (82%). Nine participants self-identified as Asian, two as Native Indian, one as Middle Eastern, four as Hispanic, and eight as “other.” After giving consent, participants individually completed the questionnaire package in groups of 8-10.

### Measures

**Lay definitions of dehumanization** (see Appendix C). Participants were provided with several blank lines to provide a written open-ended definition for dehumanization. Specifically, participants were asked: “*How would you define Dehumanization?*”

**Causes of dehumanization and ethnic prejudice** (see Appendix D). Participants were provided with a definition of animalistic dehumanization (i.e., beliefs that members of other groups are more animalistic) and ethnic prejudice (see Hodson & Esses, 2005). It was necessary to provide definitions to ensure that all participants were “on the same page” when responding to the forthcoming questions. Afterwards participants were asked, “*To what extent is each of the following factors responsible for causing*

*dehumanization?*” followed by 15 items rated along 7-point scales (1 = *not at all*, to 7 = *very much so*). A similar question then asked about the extent to which these same factors cause ethnic prejudice. Included among the 15 causal factors were prejudice precursors typically targeted in the scientific literature (e.g., closed-mindedness, negative experiences with other groups; see Hodson & Esses, 2005), as well as the human-animal divide. In an exploratory analysis for this dissertation, participants also indicated the extent to which the 15 factors were responsible for causing/maintaining the human-animal divide (i.e., beliefs that humans are superior to animals).

**Perceived solutions to dehumanization and ethnic prejudice** (see Appendix E). To assess beliefs about solutions to dehumanization participants were asked, *“To what extent is each of the following factors useful in reducing or solving dehumanization?”* followed by 10 factors rated along 7-point scales (1 = *not at all*, to 7 = *very much so*). A similar question asked about the usefulness of the same solutions for ethnic prejudice, using the same response items. Included among the solution factors were attempts to close the human animal divide by highlighting “animal-to-human” or “human-to-animal” similarities (emphasized by the Interspecies Model of Prejudice) among other more typical prejudice interventions (e.g., education, parental influence, and intergroup contact; see Hodson & Esses, 2005). As an exploratory analysis for this dissertation, participants also indicated the usefulness of the same 10 strategies for closing the human-animal divide (i.e., reducing beliefs that humans are superior to animals).

**Human-animal divide** (see Appendix F). Self-reported beliefs in the human-animal divide were measured via 10 items from Costello and Hodson (2010, in press) tapping beliefs that humans are distinct from and superior to animals. Sample items read:

*“Humans are so vastly different from other life forms that it is a mistake to classify humans as animals;” Humans are superior to animals”* (1 = *strongly disagree* to 7 = *strongly agree*). Higher scores reflect greater beliefs that humans are separate from and superior to non-human animals.

**Dehumanization** (see Appendix G). Following Hodson and Costello (2007; see also Costello & Hodson, 2010, in press), participants indicated the extent to which uniquely human traits (measuring openness and conscientiousness) and non-uniquely human traits (measuring agreeableness and neuroticism) apply to Whites and Blacks. Similar to Leyens and colleagues (2001), participants also indicated the extent to which Whites and Blacks experience positive (hope, empathy) and negative (guilt, despair) secondary/uniquely human emotions, and positive (happiness, excitement) and negative (scared, sad) primary/non-human emotions. Respondents rated eight traits and emotions in total. All emotion and trait items were rated on a 7-point scale (1 = *does not apply* to 7 = *strongly applies*).

**Prejudice toward Blacks** (see Appendix H). Participants completed the widely used seven-item Modern Racism Scale (McConahay, Hardee, & Batts, 1981). A sample item reads: *“Black people are getting too demanding in their push for equal rights”* (0 = *strongly disagree* to 4 = *strongly agree*). Higher scores reflect greater prejudice.

## Results

Presented first are the definitions of dehumanization provided by participants. Next we present evidence for dehumanization and the Interspecies Model of Prejudice. Lastly, we explore participant’s responses to the potential causes and solutions to dehumanization and prejudice.

## Lay Definitions of Dehumanization

Open-ended definitions were first categorized into three pre-determined categories (see Table 2-1 for category labels and exemplars). We focused on representations of others as animal-like and machine-like (see Haslam's 2006 conceptual model), and on the (anecdotally relevant) discriminatory or action-based aspect of denying others their humanity. The responses were not independent, meaning that a single participant's response could fall into multiple categories. A second trained rater who was unaware of the research goals coded a subsample ( $n = 50$ ) of responses using the same three response categories. Agreement among raters was high within each of the three definition categories (Cohen's kappas = .769 - 1.00).

**Table 2-1**

*Open-ended Definitions of Dehumanization*

Definition	Percentage	Sample Responses
Discriminatory Behaviour	69	<i>"To degrade/ To humiliate/ To disrespect / To demoralize/ To strip human rights/ To eradicate"</i>
Animalization	63	<i>"Humans are given animal-status/ Groups viewed as animalistic/ People given animal traits/ Depicted as an animal"</i>
Mechanization	14	<i>"When people are treated like machines/ When people are treated as objects/ The act of Objectification"</i>

*Note.*  $N = 139$ .

The majority of participants (69%) defined dehumanization in terms of degrading and disrespectful behaviors, often involving human rights violations. Of theoretical importance, most participants also defined dehumanization as involving animalization (63%) as opposed to mechanization (14%), supporting H1. That is, respondents were

more likely to spontaneously mention that dehumanization involves animalized perceptions of the outgroup (e.g., the outgroup is animalistic, primitive, savage) rather than perceptions that the outgroup is cold and rigid (i.e., mechanistic dehumanization).

### **Evidence of Racial Dehumanization**

We then sought to determine whether the sample expressed evidence of outgroup dehumanization. To examine differential attributions of uniquely and non-uniquely human characteristics across groups, we conducted a 2 (Group: Black vs. White) x 2 (Trait: Human vs. Non-human) ANOVA on the trait-attribution measure, and a 2 (Group: Black vs. White) x 2 (Emotion Type: Human vs. Non-human) x 2 (Emotion Valence: Positive vs. Negative) ANOVA on the emotion-attribution measure. For the trait-attribution analyses, only a significant Group x Trait interaction,  $F(1, 138) = 4.32, p = .040$ , emerged. In support of H2, significantly more uniquely human traits were attributed to Whites ( $M = 3.54, SD = .56$ ) than to Blacks ( $M = 3.42, SD = .74$ ),  $t(138) = 2.36, p = .020, d = .18$ . In contrast, no difference in the attribution of non-human traits to Whites ( $M = 3.56, SD = .57$ ) versus Blacks ( $M = 3.55, SD = .61$ ) emerged,  $t(138) = .19, p = .849$ , as expected.

For the emotion-attribution analysis, significant main effects emerged for Emotion Type,  $F(1, 138) = 11.30, p = .001$ , and Emotion Valence,  $F(1, 138) = 58.21, p < .001$ . Specifically, more primary (vs. secondary) and fewer negative (vs. positive) emotions were attributed overall. Of greater theoretical importance, there was a significant Group x Emotion interaction,  $F(1, 138) = 11.41, p < .001$ . As expected, participants attributed significantly more uniquely human emotions to Whites ( $M = 3.79, SD = .90$ ) than Blacks ( $M = 3.55, SD = .87$ ),  $t(138) = 3.89, p < .001, d = .27$ . In contrast,

no significant differences emerged for the attribution of non-human emotions to Whites ( $M = 3.96, SD = .78$ ) versus Blacks ( $M = 3.94, SD = .93$ ),  $t(138) = .32, p = .735$ .

Moreover, the attribution of uniquely human emotions to Whites and Blacks was not moderated by emotion valence,  $F(1,138) = 2.35, p = .128$  (see Leyens et al., 2000).

Overall, fewer uniquely human traits and emotions were attributed to Blacks relative to Whites, supporting H2. To simplify model testing, a dehumanization composite variable was created by aggregating the (reversed) standardized total uniquely human traits and emotions attributed to Blacks ( $r = .54, p < .001$ ), with higher values reflecting greater dehumanization.

### **Descriptive Statistics and Bivariate Correlations**

Descriptive statistics and inter-correlations among all continuous variables are presented in Table 2-2. Overall, there were no missing values on any of the continuous variables and only one univariate outlier ( $> 3 SD$  from the mean) was identified on the prejudice variable. No differences emerged upon removing the outlier; thus the outlier was included in the final analyses. As indicated in Table 2-2, skewness and kurtosis levels were within the acceptable range ( $< |2|$ ) for all variables, suggesting that the assumptions for univariate normality had been met. Moreover, as expected by the Interspecies Model of Prejudice, human-animal divide, dehumanization, and prejudice were positively correlated with one another.

### **Tests of the Interspecies Model of Prejudice**

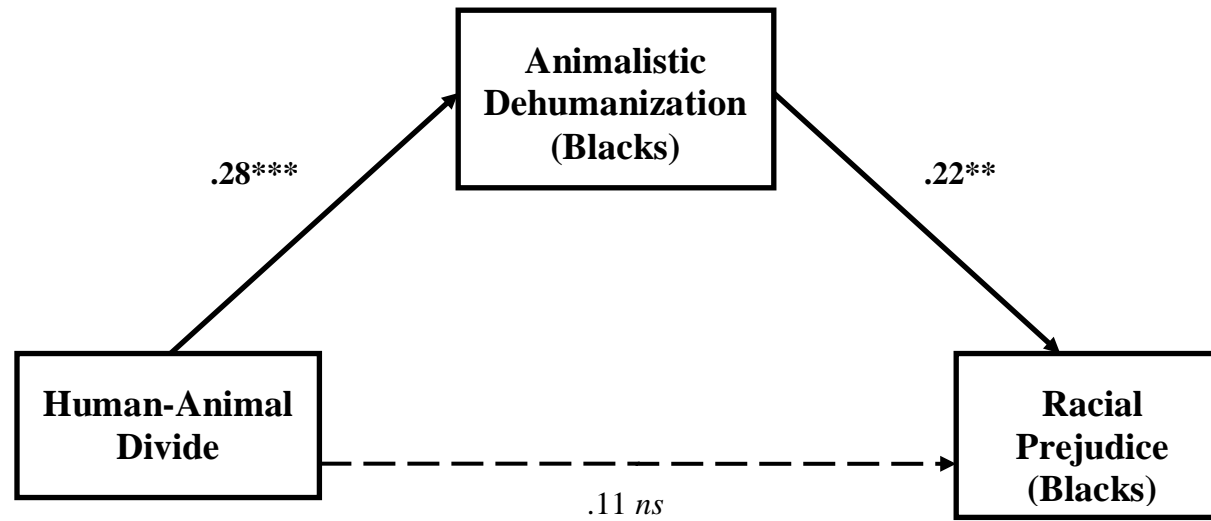
Next we test the mediation predictions proposed by the Interspecies Model of Prejudice to determine whether outgroup dehumanization explains the relation between human-animal divide and prejudice. We tested this mediation model with AMOS 18 software, using bootstrapping methods ( $n = 2,000$ ) with maximum likelihood procedures

**Table 2-2***Inter-Correlations among Interspecies Model of Prejudice Variables*

	Human-Animal Divide	Outgroup Dehumanization	Racial Prejudice
Human-Animal Divide	.85	.36***	.26**
Outgroup Dehumanization		.80	.34***
Racial Prejudice			.81
<i>Mean</i>	2.92	.00	.94
<i>Standard Deviation</i>	1.08	1.00	.69
<i>Skewness</i>	.37	.52	.15
<i>Kurtosis</i>	1.07	1.08	.76

*Note.*  $N = 139$ . Outgroup Dehumanization = standardized attribution of uniquely human traits and emotions to Blacks. Italicized values in diagonal represent scale reliabilities. \*\* $p < .01$ ; \*\*\* $p < .001$ .

to estimate the significance of the effects. As illustrated in Figure 2-1, heightened beliefs in the human-animal divide predicted increased dehumanization, which in turn predicted heightened prejudice, supporting H3. In keeping with the Interspecies Model of Prejudice, the indirect effect of human-animal divide on prejudice via increased dehumanization was significant ( $p = .005$ ). In contrast, the direct effect of human-animal divide on prejudice in this mediation model was non-significant ( $p = .860$ ), despite being significantly correlated at the bivariate level ( $r = .26$ , see Table 2-2). In other words, dehumanization (i.e., beliefs that outgroup members possess fewer uniquely human characteristics), fully explained the link between participant's human-animal divide beliefs and racial prejudice, supporting the Interspecies Model of Prejudice.<sup>1</sup>



**Figure 2-1.**  $N = 139$ . Interspecies Model of Prejudice. Dotted line represents the path between human-animal divide and prejudice that becomes non-significant when dehumanization is included as a mediator. \*\* $p < .01$ ; \*\*\* $p < .001$ .

### **Lay Beliefs about the Causes of Dehumanization and Prejudice**

Descriptive statistics for the causes of dehumanization and prejudice are presented in Table 2-3. Participants were most likely to perceive both dehumanization and prejudice as being caused by close-mindedness, ignorance, the media, cultural differences (i.e., symbolic threats), and parental influence. Less emphasis was placed on intergroup causal variables, including social identity concerns, resource competition, and human nature, which are often stressed in the empirical literature. These latter findings (with regard to prejudice) are consistent with findings by Hodson and Esses (2005). As expected, participants placed the least emphasis on the human- animal divide (ranking 15/15) as a probable cause of both dehumanization and prejudice, supporting H4 and H5 respectively. In fact, human-animal divide was the only potential causal factor to fall significantly below the scale midpoint (i.e., 4) for both dehumanization,  $t(139) = -17.46, p < .001$ , and prejudice,  $t(139) = -19.24, p < .001$ . Thus participants considered interspecies relations (i.e., between humans and animals) a very unlikely explanation for human intergroup biases. In contrast, all other factors were significantly higher than the scale midpoint and thus considered relatively plausible causes of dehumanization ( $ps < .001$ ) and prejudice, ( $ps < .028$ ), with the exception of human nature as a cause of dehumanization ( $p = .253$ ). Thus, despite empirical evidence that human-animal divide beliefs actually facilitated dehumanization and prejudices in the sample (as demonstrated in Figure 2-1), these same participants rejected the human-animal divide as a probable cause of dehumanization or prejudice.

Regarding the human-animal divide, participants rated animal inferiority, ignorance, human nature, and negative or lack of interspecies contact (between humans

**Table 2-3***Perceived Causes of Dehumanization, Ethnic Prejudice, and Human-Animal Divide*

<b>Potential Causes</b>	<b><u>Dehumanization</u></b>		<b><u>Ethnic Prejudice</u></b>		<b><u>Human-Animal Divide</u></b>	
	<b><i>M</i></b>	<b><i>SD</i></b>	<b><i>M</i></b>	<b><i>SD</i></b>	<b><i>M</i></b>	<b><i>SD</i></b>
Closed-Mindedness	6.06	1.29	6.09	1.46	5.39	1.74
Ignorance	5.95	1.38	6.17	1.27	5.72	1.59
Media Portrayals	5.84	1.35	6.05	1.32	5.27	1.52
Symbolic Threats	5.70	1.40	6.00	1.13	4.67	1.11
Parental Influence	5.69	1.28	6.10	1.09	5.07	1.56
Negative Contact	5.53	1.40	5.97	1.25	5.55	1.68
Fear of the Outgroup	5.49	1.51	5.68	1.47	5.54	1.61
Disgust	5.47	1.73	5.91	1.26	4.74	1.82
Lack of Contact	5.42	1.70	6.00	1.34	5.60	1.62
Organized Religion	4.91	1.58	5.11	1.55	3.37	1.97
Social Identity threats	4.54	1.45	4.57	1.56	3.62	1.74
Realistic Threats	4.52	1.63	4.84	1.52	3.57	2.11
Outgroup Inferiority	4.21	1.31	4.37	1.48	5.97	1.15
Human Nature	3.49	1.36	3.84	1.05	5.66	1.39
Human-Animal Divide	2.42	1.41	2.16	1.62	--	--

*Note.*  $N = 139$ .

and animals) as leading causes of beliefs that humans are superior to animals. On the other hand, participants rejected realistic threats (i.e., resource competition) social-identity threats (i.e., motivation to protect the human-identity), and especially religious beliefs as fundamental causes of the human-animal divide. Indeed, these factors (i.e., realistic threat, social identity threat, and religiosity) were the only causes to fall

significantly below the scale midpoint ( $t_s < -2.57, p_s < .011$ ). In contrast, all the other factors were significantly higher than the scale midpoint ( $t_s > 4.78, p_s < .001$ ).

### **Lay Beliefs about the Solutions to Dehumanization and Prejudice**

Descriptive statistics for the solutions to dehumanization and ethnic prejudice are presented in Table 2-4. Participants were especially likely to recommend intergroup contact, cross-group or interracial friendships, education, open-mindedness, and parental influence as solutions to both dehumanization and prejudice. Once again these findings (with regard to prejudice) are in keeping with Hodson and Esses (2005). Of particular interest, participants were most reluctant to recommend narrowing the human-animal divide as a means to reduce dehumanization or prejudice, supporting H6 and H7 respectively. Indeed, the only solutions rated significantly below the scale midpoint (i.e., 4) for dehumanization and prejudice were attempts to highlight “animal-to-human” similarity,  $t(139) = -17.52, p < .001$ , and “human-to- animal” similarity,  $t(139) = -19.62, p < .001$ . In contrast, all other potential solutions were significantly greater than the scale midpoint and thus were considered relatively plausible methods for reducing dehumanization ( $p_s < .011$ ), and prejudice ( $p_s < .042$ ). In other words, participants believed that all the proposed solutions were useful for reducing dehumanization/ prejudice *except* for closing the human-animal divide. Interestingly, highlighting “human-to-animal” similarity was considered less likely to reduce prejudice than “animal-to-human” similarity,  $t(139) = -3.11, p = .002, d = .19$ . For dehumanization, there was no significant difference between the human-animal similarity remedies,  $t(139) = -1.31, p = .191$ .

**Table 2-4***Perceived Solutions to Dehumanization, Ethnic Prejudice, and Human-Animal divide*

<b>Potential Solutions</b>	<b><u>Dehumanization</u></b>		<b><u>Ethnic Prejudice</u></b>		<b><u>Human-Animal Divide</u></b>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive Intergroup Contact	6.21	1.16	6.23	1.11	5.99	1.36
Cross-Group Friendships	6.11	1.28	6.01	1.49	5.88	1.38
Education	6.11	1.25	6.05	1.30	5.64	1.34
Open-mindedness	6.09	1.41	6.08	1.36	5.98	1.32
Parental Influence	6.05	1.21	6.07	1.19	5.17	1.55
Intergroup Similarity	5.90	1.17	5.92	1.20	2.21	1.62
Media Influence	5.81	1.50	5.93	1.48	5.42	1.52
Organized Religion	4.66	1.62	4.69	1.77	2.93	1.66
Animal-to-Human Similarity	2.31	1.42	2.37	1.72	6.01	1.26
Human-to-Animal Similarity	2.14	1.44	2.02	1.97	4.99	1.29

*Note.*  $N = 139$ .

Regarding solutions for the human-animal divide, organized religion and highlighting similarities among humans were rated significantly below the scale midpoint ( $ts < -7.28, ps < .001$ ). In other words, participants largely rejected these factors as probable solutions for reducing beliefs that humans are superior to animals. In contrast, all other solutions listed in Table 2-4 fell significantly above the scale midpoint ( $ts > 5.45, ps < .001$ ), with positive interspecies contact and highlighting animals' similarity to humans rated as the most useful solutions. Interestingly, highlighting "human to animal" similarity was rated as significantly less likely to reduce the human-animal divide than "animal-to-human" similarity,  $t(139) = -6.99, p = .001$ , representing a relatively large effect,  $d = .80$ .

In summary, we found evidence that laypeople naturally define dehumanization in terms animalistic (*versus* mechanistic) outgroup associations. Moreover, support for the Interspecies Model of Prejudice was provided, whereby participants' self-reported beliefs in the human-animal divide predicted greater prejudice, an effect fully explained through heightened outgroup dehumanization. Interestingly, despite empirical evidence that participants' *own* human-animal divide beliefs facilitated *their* dehumanization and subsequent prejudices, these same participants rejected the human-animal divide as a probable cause of or solution to dehumanization or prejudice.

### **Exploratory Meta- Analysis**

To examine the predictive utility of considering the human-animal divide in the context of human intergroup relations, we conducted a meta-analysis of our existing data thus far, to determine the average magnitude of the correlation between human-animal divide beliefs and outgroup prejudice. The results of this analysis are illustrated in Table 2-5. The average mean correlation between human-animal divide beliefs and prejudice variables (Mean  $r = .34$ ) was moderate-to-large in magnitude following Cohen (1988). Thus, despite having no surface-level connection to the outgroup in question, the human-animal divide is a meaningful predictor of outgroup prejudice.

### **Discussion**

Outgroup dehumanization involves beliefs that another group is relatively less human or more animal-like than the ingroup (Hodson et al., in press). Animalistic (*versus* mechanistic) dehumanization implies a vertical comparison among humans and animals and is typically considered an intergroup phenomenon (Haslam, 2006). Interestingly, most of the non-experts in the present study conceived of dehumanization as involving

**Table 2-5***Meta-Analysis Examining the Predictive Strength of Human-Animal Divide on Prejudice*

<b>Sample</b>	<b><i>N</i></b>	<b><i>r</i></b>	<b>Target Outgroup</b>	<b>Measure</b>
Costello & Hodson (2010), <i>Study 1</i>	70	.43***	Immigrants	<i>Modern Racism Scale</i>
Costello & Hodson ( <i>In press</i> ) <i>Study 1 (Children)</i>	20	.45*	Blacks	<i>Multi-Response Racial Attitude Measure</i>
<i>Study 2 (Children)</i>	53	.48***	Blacks	<i>Multi-Response Racial Attitude Measure</i>
<i>Study 2 (Parents)</i>	53	.46***	Blacks	<i>Modern Racism Scale</i>
Hodson, Costello, & MacInnis ( <i>Unpublished</i> )	183	.15*	Immigrants	<i>Attitude Thermometer</i>
Current Study <sup>2</sup>	139	.26**	Blacks	<i>Modern Racism Scale</i>
<b>Total N</b>	518			
<b>Mean <i>r</i></b>	.34			

*Note.* Mean *r* calculated using Fisher z transformation weighted by sample size, Fail Safe *N* = 131. Modern Racism Scale (McConahay, et al., 1981); Attitude Thermometer (Haddock, Zanna, & Esses, 1993); Multi-Response Racial Attitude Measure (Doyle & Aboud, 1995). \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

outgroup animalization rather than mechanization, mirroring the emphasis in the empirical literature. Our participants also defined dehumanization in terms of behaviour, such as acts of degradation and humiliation, rather than mental representations of groups (e.g., blacks are “ape-like”) that psychologists often emphasize (e.g., Goff et al., 2008).

We argue that beliefs about the human animal divide and accompanying connotations of human superiority have important implications for the formation and legitimization of negative human outgroup biases. An exploratory meta-analysis of the existing data thus far, supports the predictive utility of the human-animal divide in the context of human intergroup relations. It is noteworthy that the mean effect size for the

relation between human-animal divide and prejudice ( $r = .34$ , see Table 2-5) is within the range found for many well-established and empirically recognized prejudice predictors, including intergroup contact (Mean  $r = .22$ , Pettigrew & Tropp, 2006), realistic and symbolic threats (Mean  $r = .42$  and  $.45$  respectively) (Riek, Mania, & Gaertner, 2006), and intergroup anxiety (Mean  $r = .46$ , Riek et al., 2006). The Fail-safe  $N$  analysis also indicates that there would need to be approximately 131 investigations failing to find this relation to reduce the established finding to null status. These results, therefore, are unlikely to be undone by file-drawer null findings. Although our meta-analysis includes a small number of studies, it includes all known studies to date; as noted by Mullen (1989), a meta-analysis can never be too small, but it can be unrepresentative. Our representative analysis, capturing all known data addressing this question, can be built upon by future meta-analysts as this literature grows in size.

Crucially, the Interspecies Model of Prejudice further specifies that human outgroup dehumanization is the crucial process responsible for the systematic link between human-animal divide and human prejudices. In the present dataset we uncovered evidence for dehumanization among our respondents themselves. As expected, participants in this sample dehumanized Blacks by attributing them fewer uniquely human (but not non-human) traits and emotions relative to Whites. Thus, not only did participants in the present sample define dehumanization in animalization terms, they also denied a racial outgroup the full experience of the very qualities that separate humans from animals. Moreover, we found support for the Interspecies Model of Prejudice. Specifically, participants' own beliefs in the human-animal divide were systematically associated with their outgroup prejudice, an effect fully mediated by their

heightened tendencies toward dehumanization. In other words, fundamental beliefs in a greater human-animal divide influence prejudicial attitudes toward humans by facilitating animalistic dehumanization.

Robust empirical support therefore exists for the idea that human-animal divide perceptions underlie some human prejudices. Interestingly, however, the present study found that laypeople are remarkably *unaware* of the non-intuitive yet systematic role that the human-animal divide plays in determining their inter-human prejudices. That is, despite empirical support for the Interspecies Model of Prejudice, even in the present sample, participants failed to identify the human animal divide as a root cause of dehumanization or prejudice, instead considering them extremely *unlikely* causes. Rather, our participants believed that both dehumanization and prejudice are caused by close-mindedness, ignorance, media influence, cultural differences (i.e., symbolic threats), and parental upbringing. These findings suggest that lay beliefs about the causes of dehumanization do not necessarily concur with scientific theory.

Regarding solutions for dehumanization or prejudice, participants recommended traditional prejudice interventions such as intergroup contact/friendship, multi-cultural education, open-mindedness, and parental influence. We know from previous research that closing the human-animal divide by means of highlighting animal-human similarities is a useful strategy for reducing dehumanization and subsequent prejudices (Costello & Hodson, 2010, Study 2). However, in the present study, participants largely rejected such solutions, as highlighting human-animal similarities were the *least* recommended solutions to dehumanization or prejudice. This was especially the case for human-to-animal similarity, which was rated as significantly less useful than animal-to-human

similarity for solving prejudice (but no significant differences emerged for dehumanization). This last finding supports previous research highlighting the importance of framing human-animal comparisons. Specifically, comparing animals to humans generally lead to more favourable attitudes and moral concern toward both animals and human outgroups; however, comparing humans to animals does not produce these same effects (Bastian et al., 2012; Costello & Hodson, 2010).

In an exploratory analysis, animal inferiority and negative or lack of interspecies contact (as well as ignorance) were perceived to be the leading causes of beliefs in human superiority over animals. Interestingly, participants strongly rejected organized religion as a root cause to human superiority beliefs. This is surprising given that many religious doctrines stress human dominion over animals. Regarding strategies for narrowing the human-animal divide, positive interspecies contact and highlighting animals' similarity to humans were rated as the most useful. These findings should be considered when designing future interventions to narrow the human-animal divide. According to laypeople, targeting perceptions of animal inferiority by highlighting the ways that animals are fundamentally similar to humans (but not how humans are similar to animals) is a practical and potentially worthwhile strategy. Moreover, providing opportunities for interspecies contact is another strategy worth examining, as first-hand contact with animals is a direct means through which people can directly *experience* the fundamental similarities among humans and animals.

Like all intergroup relations, our attitudes toward non-human animals are very complex. Future research is needed to improve our understanding of the dynamics of the relationship between humans and other animals. Specifically, it is crucial that we

examine the origin of human-animal divide beliefs themselves. We know that children as young as six years old are capable of holding meaningful beliefs about the human-animal divide (Costello & Hodson, in press). Moreover, children's concrete (*versus* abstract) cognitive abilities, and parents' social-dominance orientation positively influence the extent to which children believe in a greater human-animal divide. Future research can consider the role of religious teachings, disgust sensitivity (see Hodson & Costello, 2007), the media, and other societal constructions that perpetuate beliefs about human superiority over animals.

One limitation to the present investigation is that the sample consisted primarily of White/Caucasian female undergraduate students. Future research is needed to explore the role of culture and ethnicity in the formation and awareness of lay beliefs regarding the human-animal divide, prejudice, and dehumanization. Some cultures may be more or less cognizant of interspecies connections relative to others. Future research can also explore whether perceived hierarchical relations within non-human animals (e.g., apes *versus* pigs *versus* rats) may play an additional role in explaining how human-animal relations can impact outgroup dehumanization and prejudice. After all, specific outgroups are commonly likened to specific non-human creatures (e.g., apes, rates, cockroaches) which themselves vary in their degree of humanness ascribed (see Hodson et al., forthcoming, for a discussion on these implications).

Uncovering evidence that lay-people's views meaningfully differ from empirical findings noted in the literature has implications for the implementation of prejudice interventions. If lay-people are largely unaware of the connections between variables underpinning the Interspecies Model of Prejudice, they will presumably be reluctant to

interventions or messages intended to narrow the human-animal divide. This is problematic given that human-animal divide interventions can reduce dehumanization and prejudice (see Costello & Hodson, 2010, Study 2) as well as increase moral concern for marginalized outgroups (see Bastian et al., 2012, Study 3).

Recent evidence indicates that children also demonstrate racial dehumanization, with these tendencies strongly determined by their beliefs about the human-animal divide (Costello & Hodson, in press). Encouragingly however, children's human-animal divide beliefs are malleable to primes highlighting human-animal similarities (Costello & Hodson, in press). Therefore, it would be worthwhile to integrate critical animal studies and human education programs into the educational system. Exercises designed to highlight the ways in which animals are similar to humans may prove fruitful for improving not only children's attitudes toward animals but also toward human outgroups. However, if teachers or parents are largely unaware of this interspecies connection (as our present findings suggest), then they may be unlikely to implement such exercises in the classroom or at home. Based on this growing body of research, however, we encourage the scientific community and the population at large to seriously contemplate and discuss the manner in which our attitudes and treatment of non-human animals impacts how we view and treat each other.

### Footnotes

- <sup>1</sup> An alternative version of this model was tested, with human-animal divide mediating the relation between dehumanization and prejudice. The indirect effect of dehumanization on prejudice via human-animal divide was significant (*Indirect effect* = .08,  $p = .007$ ). However this effect was partial in nature given that the direct effect of dehumanization on prejudice also remained significant in the mediation model,  $\beta = .26$ ,  $p < .001$ . We urge caution in interpreting this alternative model, given that this pattern is less theoretically defensible, and given that other tests of this alternative model (Costello & Hodson, in press) have produced results in conflict with this analysis. Moreover, experimental manipulations of human-animal divide subsequently heighten outgroup dehumanization (Costello & Hodson, 2010, Study 2) supporting the assertion that human-animal divide causally precedes dehumanization.
- <sup>2</sup> The relation between the human-animal divide and prejudice in the present study was of smaller magnitude than in some past studies. This could be due to the fact that these participants completed the multiple measures of lay beliefs prior to completing these particular measures, which have made the connections more salient to participants in ways that influenced their responses. It might also reflect the fact that the present sample was more ethnically diverse than past samples.

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### CHAPTER 3

This section is based on the following article: Costello, K., & Hodson, G. (in press). Explaining dehumanization among children: The interspecies model of prejudice. *British Journal of Social Psychology*.

Note: In the interest of clarity, Studies 1 and 2 of the submitted article have been labelled as Studies 2 and 3 for the purposes of this dissertation.

#### Abstract

Although many theoretical approaches have emerged to explain prejudices expressed by children, none incorporate outgroup dehumanization, despite this process playing a key role in explaining adult prejudices. According to the Interspecies Model of Prejudice, beliefs in a human-animal divide facilitate outgroup dehumanization and subsequent outgroup prejudices (Costello & Hodson, 2010). In the present investigation, White children showed evidence of racial dehumanization by attributing to Black children fewer “uniquely human” characteristics, representing the first systematic evidence of racial dehumanization among children (Studies 1-2). In Study 2, path analyses supported the Interspecies Model of Prejudice: children’s human-animal divide beliefs predicted greater racial prejudice, an effect explained by heightened racial dehumanization. Similar patterns emerged among parents. Furthermore, parents’ Social Dominance Orientation predicted their child’s prejudice indirectly, through their child’s endorsement of a hierarchical human-animal divide and subsequent dehumanizing tendencies. Encouragingly, children’s human-animal divide perceptions were malleable to an experimental prime highlighting animal-human similarity. Implications for prejudice interventions are considered.

## **Explaining Dehumanization Among Children: An Interspecies Model of Prejudice**

The causes of outgroup prejudice have proven to be multifaceted. In the adult literature, outgroup dehumanization has emerged as a robust predictor of prejudice and discrimination in intergroup contexts (Costello & Hodson, 2010; Goff, Eberhardt, Williams, & Jackson, 2008; Hodson & Costello, 2007; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007; Leyens et al., 2000, 2001). Surprisingly, outgroup dehumanization has yet to be recognized as a fundamental aspect of intergroup bias among children, with no extant studies on racial dehumanization in particular. Here, we investigate children's propensity for racial dehumanization within the context of an Interspecies Model of Prejudice (Costello & Hodson, 2010). Specifically, we consider whether children's propensity for perceiving humans as superior to animals leads to human outgroup derogation by increasing dehumanization. We also explore the role of parental social dominance orientation and whether children's beliefs regarding the human-animal divide are informed by parental preferences for general intergroup dominance. Finally, we examine the malleability of children's human-animal divide beliefs to inform the development of future prejudice interventions.

### **Prejudice Among Children**

It is well established that children display prejudicial attitudes by middle childhood (Aboud, 2003; Bigler & Liben, 2007; Rutland, Cameron, Milne, & McGeorge, 2005). Several theories have attempted to explain children's prejudices in terms of social-environmental factors, motivational roots, and/or individual differences. For instance, prevailing approaches focus on prejudicial parental attitudes (e.g., Allport, 1954; Rodriguez-Garcia & Wagner, 2009; Sinclair, Dunn, & Lowery, 2005; White &

Gleitzman, 2006), social normative influences (e.g., Rutland et al., 2005), internalized lay theories about intergroup relations (e.g., Levy, West, & Ramirez, 2005), and even interracial friendships (e.g., Feddes, Noack, & Rutland, 2009). Other perspectives consider motivational processes such as the development of moral reasoning (Killen, 2007), ingroup identification (Rutland, Killen, & Abrams, 2010), and threats to one's social identity (Nesdale, Durkin, Maass, & Griffiths, 2005). From an individual difference perspective, children's prejudice has been explained in terms of disordered personality traits resulting from authoritarian-type child-rearing (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Altemeyer, 1996; Knafo, 2003; Peterson, Smirles, & Wentworth, 1997).

In yet another approach, Aboud (1988) argued in her social-cognitive theory that racial biases in children are largely determined by limited cognitive-perceptual abilities. Specifically, abstract reasoning and inclusive categorization are seen as critical determinants of racially biased expressions in children (Aboud, & Spears Brown, 2013; Bigler, Jones, & Loblinger, 1997; Bigler & Liben, 1992). For example, children who fail to master a basic water conservation task (i.e., recognizing that a short wide glass can hold equivalent fluid to a tall thin glass) show evidence of less sophisticated cognitive ability of the sort associated with greater intergroup bias (Doyle & Aboud, 1995). Further evidence implicating the role of cognitive capabilities in prejudice development is found in longitudinal studies showing that weaker cognitive abilities in childhood predict greater levels of prejudice in adulthood (Deary, Batty, & Gale, 2008; Hodson & Busseri, 2012). These approaches have undoubtedly advanced our understanding of prejudice in children. Noticeably absent from the extant developmental literature, however, is the role

of outgroup dehumanization. Here, we consider whether children devalue outgroups because they endorse perceptions that racial outgroups are more animalistic and consequently “less human” in nature.

### **Human Outgroup Dehumanization**

Dehumanization is a psychological process through which others are derogatively likened to “animals” and/or perceived as “less human” (Haslam, 2006; Leyens et al., 2000, 2001, 2007).<sup>1</sup> In intergroup contexts, dehumanization can serve to justify the exclusion of outgroups from moral consideration (Bandura, 1999; Bar-Tal, 1989; Opatow, 1990), rendering them “unworthy” of assistance (Costello & Hodson, 2011) or forgiveness (Tam et al., 2008). Not surprisingly, dehumanization is also associated with heightened outgroup prejudices (Costello & Hodson, 2010; Hodson & Costello, 2007) and greater acceptance of outgroup-directed violence (Goff et al., 2008). Put simply, dehumanizing an outgroup paves the way for negative treatment and evaluation of that group.

Dehumanization can involve explicit animalistic outgroup comparisons, such as historical portrayals of Blacks as “apes” or Jews as “vermin” (Livingstone-Smith, 2011). Contemporary approaches to dehumanization, however, are subtler in nature and involve the lesser attributions of “human” characteristics to outgroups (Haslam, 2006; Leyens et al., 2000, 2001, 2007). For example, tests of Leyens and colleague’s (2000, 2001, 2007) infra-humanization hypothesis reveal that people are reluctant to attribute and/or associate secondary emotions that are considered “uniquely human” to the outgroup (see Demoulin et al., 2004; Paladino et al., 2002; Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003). In contrast, differential attributions of primary emotions (i.e.,

emotions that humans share with other animals) between the ingroup and outgroup are not expected or typically observed (Demoulin et al., 2004; Leyens, 2000, 2001). Furthermore, the concept of “humanity” is only activated when the ingroup (not outgroup) is associated with uniquely human emotions (Vaes, Paladino, & Leyens, 2006). Interestingly, the lesser attribution/association of uniquely human emotions to outgroups usually occurs independently of emotion valence (Paladino & Vaes, 2009; Leyens et al., 2000, 2001, 2007), suggesting that infra-humanization is more than a mere expression of ingroup favouritism. Comparable dehumanizing patterns have also been uncovered for the differential attributions of “uniquely human” personality traits to the ingroup versus outgroup (Haslam, 2006; see also Costello & Hodson, 2010; Hodson & Costello, 2007).

Despite the role that dehumanization plays in explaining human outgroup prejudices at the conceptual level (Costello & Hodson, 2010; Hodson & Costello, 2007; Leyens et al., 2000), only two known studies have attempted to measure dehumanization in children (Brown, Eller, Leeds & Stace, 2007; Martin, Bennett, & Murray, 2008). In keeping with the infrahumanization hypothesis, both studies operationalized dehumanization as the lesser attribution of uniquely human emotions to outgroup versus ingroup members. In the study by Brown et al. (2007), children between the ages of 11 and 16 attributed more positive uniquely human emotions to students from their home (ingroup) versus neighbouring (outgroup) school. Furthermore, this relative denial of “humanity” to outgroup members was associated with heightened outgroup negativity (Brown et al., 2007). Similarly, Martin et al. (2008) found that younger children aged six to eleven expected that members of their National sports team (ingroup) would

experience more intense uniquely (*vs.* non-uniquely) human emotions relative to members of an opposing sports team (outgroup).

These studies provide preliminary evidence that children are capable of attributing outgroup members less “humanity” by denying them the complete experience of “human” emotions. Despite providing valuable insights, the extant studies are limited by focusing on non-stigmatized social outgroups (e.g., sports teams, schools) and by tapping reactions to hypothetical scenarios as a measure of dehumanization (which were not always reliable, see Brown et al., 2007). In contrast, we examined children’s dehumanization of a marginalized *racial* outgroup and employ standard dehumanization measures used with adults but adapted for use with children (i.e., spontaneous attributions of “human” characteristics). Furthermore, we explore whether children’s attribute-based dehumanization (i.e., attributions of uniquely human characteristics) is associated with actual animalistic-outgroup metaphors, as established in the adult literature (see Loughnan & Haslam, 2007; Loughnan, Haslman, & Kashima, 2009). Finally, we draw on recent research on the Interspecies Model of Prejudice to explain why children devalue outgroups by undermining their humanness.

### **Interspecies Model of Prejudice**

Theorists have speculated that the oppression of marginalized humans may be rooted in ideology involving the human-animal divide and accompanying connotations of human superiority (Livingstone-Smith, 2011; Mason, 2005; Nibert, 2002; Patterson, 2002). Theoretically, the human-animal divide reflects an ideological belief system of human supremacy, where humans are considered fundamentally distinct from, and superior to, animals. This ideology justifies the social legitimacy of dominating and

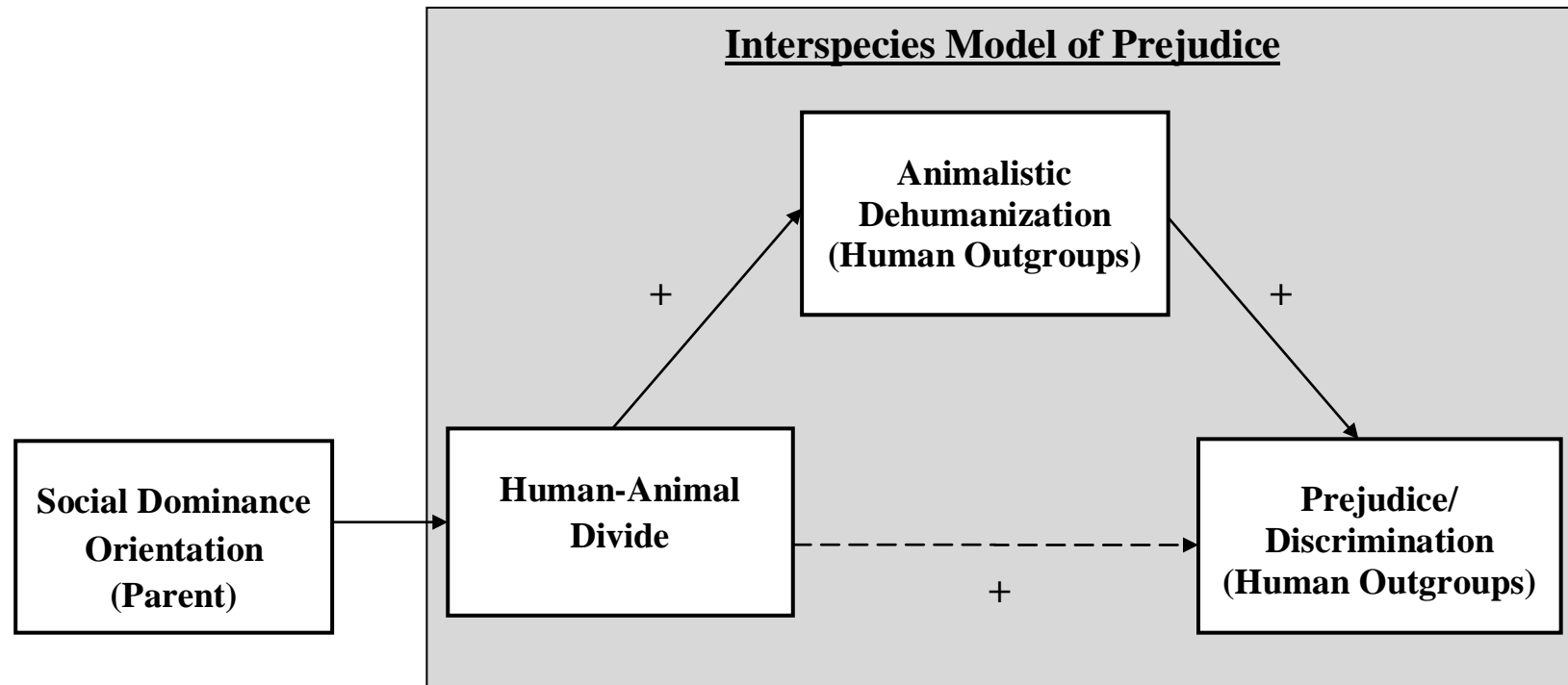
exploiting non-human animals, especially those perceived to be lower in the human-animal hierarchy (Opatow, 1993; Westbury & Neumann, 2008). Troublingly, human domination over animals may also justify inter-human domination including slavery, genocide, and intergroup prejudices or violence (see Livingstone-Smith, 2011; Mason, 2005; Nibert, 2002; Patterson, 2002). Indeed, some argue that “human domination, which promotes and justifies the exploitation of animals, legitimize[s] the oppression of humans alleged to be in an animal condition” (Patterson, 2002, p. 25).

Building on this observation, the Interspecies Model of Prejudice proposes that fundamental beliefs in a human-animal divide set the foundation for outgroup dehumanization (Costello & Hodson, 2010; Hodson, MacInnis, & Costello, in press). Specifically, beliefs in a vertical human-animal divide allow people to exclude some humans from the realm of humanity by likening them to “inferior” animals, with these dehumanizing perceptions predicting prejudice and discrimination (see grey box in Figure 3-1). Put simply, the derogative value of animalistic-outgroup representations (i.e., dehumanization) is theoretically dependent upon the hierarchical devaluation of animals relative to humans in the first place.

Support for the Interspecies Model of Prejudice was confirmed in a study by Costello and Hodson (2010, Study 1), in which human-animal divide systematically predicted prejudices through greater animalistic dehumanization. Specifically, Canadian university students who endorsed greater beliefs in the human-animal divide attributed fewer uniquely human characteristics to an immigrant outgroup, which in turn predicted greater anti-immigrant attitudes. In other words, the effect of human-animal divide on outgroup prejudice was fully mediated by dehumanizing representations of the outgroup.

Critically, in a second study, Costello and Hodson (2010) used an experimental design to evaluate the causal assumptions implied by the Interspecies Model of Prejudice. As predicted, psychologically closing the human-animal divide (via exposure to scientific editorials highlighting the similarities that animals share with humans) attenuated dehumanization, which in turn predicted more favourable attitudes toward immigrants. In other words, outgroup dehumanization was significantly reduced by stressing the similarity of animals to humans, supporting the proposed causal relation. Related research confirms that experimentally accentuating animals' similarity to humans expands moral concern toward marginalized human outgroups (Bastian, Costello, Loughnan, & Hodson, 2012, Study 3). These experimental studies confirm the proposition that decreasing hierarchical beliefs in human superiority over animals causally predicts lower animalistic dehumanization (and conversely, that widening the human-animal divide increases animalistic dehumanization).

At present, however, it is unclear whether children actually devalue racial outgroups via dehumanization, and whether their dehumanizing tendencies are predicted by the human-animal divide belief-systems underlying the Interspecies Model of Prejudice. Like adults, children hold lay beliefs about the world that serve to influence their intergroup perceptions and behaviours (Cameron, Alvarez, Ruble, & Fuligni, 2001; Levy et al., 2005). However, some theorists argue that belief systems justifying outgroup derogation, in particular, emerge in late adolescence (Altemeyer, 1996), largely precluding the possibility of such processes in younger children. Because societal norms supporting human superiority over animals are so deeply entrenched (Plous, 2003), we



**Figure 3-1.** Conceptual illustration of the Interspecies Model of Prejudice (based on Costello & Hodson, 2010), with parent-SDO predicting children's human-animal divide. Dotted line represents a path predicted to be weak (or non-significant) when dehumanization is included as a mediator.

argue that even young children show evidence of belief in the human-animal divide. If true, we predict that individual differences in this propensity to view humans as superior to animals should be systematically related to outgroup dehumanization and prejudice. If established, these findings would considerably enhance our understanding of prejudice development in children, highlighting novel contributors to prejudice that can be targeted in interventions. With such an objective in mind, we also consider the flexibility of children's human-animal divide beliefs, given that experimentally blurring the human-animal divide attenuates dehumanization and outgroup exclusion among university-aged adults (Bastian et al., 2012; Costello & Hodson, 2010). That is, using a child-friendly experimental context highlighting human-animal similarity, we evaluate whether children's human-animal divide beliefs are indeed malleable.

### **Overview of Study 2**

We begin with a pilot study to validate our measures and thus explore the viability of examining racial dehumanization in children, which to our knowledge has never been established. We expected White children to attribute fewer uniquely human emotions and traits to Black versus White children (H1). Furthermore, we expected the denial of uniquely human characteristics to Black children (a subtle measure of dehumanization) to be positively associated with explicit animalistic-outgroup representations (i.e., explicit perceptions that Blacks are similar to animals) (H2). We then explore whether constructs relevant to the Interspecies Model of Prejudice are meaningfully correlated in children. Specifically, we expected children's human-animal divide beliefs to be positively related to their dehumanization (H3) and racial prejudices (H4). In keeping with previous research (see Aboud, 1988; Aboud & Spears Brown,

2013), we expected that greater conservation ability (a common measure of cognitive ability in children, see Doyle & Aboud, 1995) would be inversely correlated with racial prejudice (H5) and with beliefs in the human-animal divide (H6). Finally, we predicted that children's human-animal divide beliefs would be significantly narrowed following an experimental manipulation highlighting fundamental human-animal similarities (H7).

## **Method**

### **Participants and Procedure**

Middle childhood is a critical period for the establishment of intergroup prejudices among children (Aboud, 1988). As such, White Canadian children between the ages of six and ten were recruited to participate in the present study via advertisements in local newspapers. In total 11 girls and 9 boys participated ( $M_{age} = 7.60$  years,  $SD = 1.32$ ). After obtaining consent from the participating child's parent/guardian, children were individually tested by a White female investigator. After completing the primary measures, children were exposed to the experimental manipulation of the human-animal divide and completed a post-manipulation measure of human-animal divide. In a separate room, parents provided their child's demographics.

### **Measures**

**Photo stimuli** (see Appendix L). Photos of Black and White girls and boys were collected from public internet websites and previously published studies. The stimuli were pre-tested among adults ( $N = 20$ ) who rated the age, race, attractiveness, happiness, and niceness of each child in the photos. A final set of four photos including both a Black boy/girl and White boy/girl matched for the aforementioned characteristics, was retained. A composite photo representing "people" was created by arranging the four child photos

and 2 additional photos of an Asian boy and girl, into a circle pattern. A composite photo representing “non-human animals” was created by arranging the faces of six different animal species that represented the three main categories of mammals (i.e., companion animals: dog and cat; farm animals: pig and cow; wild animals: seal and chimpanzee) into a circle pattern. All photos were 4x4 inches and gray-scaled.

**Dehumanization** (see Appendix O). We measured dehumanization via the attribution of uniquely human characteristics. Following Leyens et al. (2001), children attributed uniquely (secondary) and non-uniquely (primary) human emotions to Black and White child targets. The emotions were selected from Demoulin et al. (2004) based on their use in previous research with children (Brown et al., 2007; Martin et al., 2008). Included were four secondary emotions (sympathy, love, guilt, and embarrassment), and four primary emotions (happiness, excitement, sadness, and fear). The personality factors Openness and Conscientiousness are also perceived to be more uniquely human relative to Agreeableness and Neuroticism factors (Haslam 2006; Hodson & Costello, 2007). Consequently, children also attributed four uniquely human (curious, creative, careless, and disorganized) and four non-uniquely human (nervous, calm, friendly, and mean) personality traits to the Black and White child targets. For each emotion/trait, children were handed two identical cards labelled with the trait/emotion word as the researcher read aloud a sentence illustrating its meaning. Children sorted the cards into boxes labelled as belonging to a same-sex White or Black child based on the corresponding box photo, or into a box labelled “X” for characteristics not deemed applicable to targets (procedure adapted from Doyle & Aboud, 1995).

**Animalistic outgroup representations** (see Appendix N). The extent to which children explicitly associate Black children with animals was tapped using a 60 cm horizontal Same-Different board (adapted from Aboud & Mitchell, 1977). Children placed pictures of a Black child and “animals” closer together or farther apart on the board, reflecting perceived similarity or difference. Lesser distance (cm) between the pictures reflects greater perceived similarity between Black children and non-human animals.

**The human-animal divide** (see Appendix M). Human animal divide beliefs were tapped using the 60 cm horizontal Same-Different board described previously, but with distinct stimuli. Specifically, children placed a picture of “humans” and “animals” closer together or farther apart on the board, reflecting perceived similarity or difference. Greater distance (cm) between human and animal pictures reflects greater human-animal divide perceptions.

**Racial prejudice** (see Appendix P). Participants completed a modified version of the widely used Multi-Response Racial Attitude Measure (Doyle & Aboud, 1995). Using a procedure methodologically similar to that for the dehumanization measure, children attributed three positive (smart, clean, and polite) and three negative (bad, bossy, and dirty) evaluative adjectives to the same-sexed White and Black child targets. Given our interest in outgroup negativity, an index score for racial prejudice was derived by averaging positive (reversed) and negative evaluations of Black children; higher scores reflect more negative evaluations of Black children.

**Conservation ability** (see Appendix Q). Children completed a water conservation task (Goldschmid, 1967) commonly used to measure abstract cognitive ability among

children (Doyle & Aboud, 1995). Mastery of the conservation task involves recognizing that a short wide glass holds equivalent water to a taller narrower glass (0 = not-mastered, 1 = mastered).

### **Human-animal divide manipulation**

After completing the measures described above, all children viewed the first two segments of an educational video entitled, “Share the World” (Ellis, Pakay, & Carolon, 2010). The video was approximately 15 minutes in length and featured engaging animal footage and commentary on the similarities that many non-human animals share with humans. Immediately following the video, all children again completed the human-animal divide measure described above.

## **Results and Discussion**

### **Evidence of Racial Dehumanization in Children**

To examine differential attributions of uniquely and non-uniquely human characteristics across groups, we conducted a 2 (Group: Black vs. White) x 2 (Trait: Human vs. Non-human) ANOVA on the trait-attribution measure, and a 2 (Group: Black vs. White) x 2 (Emotion Type: Uniquely vs. Non-Uniquely Human) x 2 (Valence: Positive vs. Negative) ANOVA on the emotion-attribution measure. The results of these analyses are presented in Table 3-1. No significant main effects emerged for the attribution of traits. However, the emotion-attribution analysis revealed a significant main effect for Valence,  $F(1, 19) = 9.19, p = .007$ , such that more positive (vs. negative) emotions were attributed overall. Of theoretical importance, significant

**Table 3-1***Evidence of Outgroup Racial Dehumanization, Studies 2 and 3.*

	<u>Uniquely Human</u>					<u>Non-Uniquely Human</u>					<u>Group X Trait/ Emotion</u>	
	Black	White	<i>t</i>	<i>p</i>	<i>d</i>	Black	White	<i>t</i>	<i>p</i>	<i>d</i>	<i>F</i>	<i>p</i>
<b>Study 2 (Child)</b>												
Traits	2.25 (1.33)	3.25 (.97)	-2.21	.040	.86	2.95 (.89)	2.85 (.93)	.42	.681	.11	5.12	.036
Emotions	2.45 (1.27)	3.30 (.80)	-2.13	.047	.80	3.10 (1.02)	3.15 (.75)	-.20	.841	.06	3.32	.084
<b>Study 3 (Child)</b>												
Traits	2.36 (1.27)	2.96 (1.07)	-2.53	.014	.51	2.79 (1.08)	2.98 (.95)	-1.37	.176	.19	2.95	.072
Emotions	2.41(1.08)	2.89 (1.17)	-2.68	.010	.43	3.09 (1.13)	3.13 (1.00)	-.34	.735	.04	4.02	.050
<b>Study 3 (Parent)</b>												
Traits	18.57 (4.24)	19.72 (3.90)	-2.33	.024	.28	16.87 (1.71)	16.64 (1.59)	.90	.371	.14	6.80	.012
Emotions	32.57 (7.23)	34.74 (6.56)	-3.09	.003	.31	35.32 (5.56)	35.42 (5.44)	-.40	.690	.04	7.64	.008

*Note.* Means (SDs). Study 2 *df* = 1, 19 and Study 3 *df* = 1, 52.

Group x Trait and Group x Emotion interactions emerged in their respective analyses (see upper panel of Table 3-1). In support of H1, children attributed significantly fewer uniquely human traits and emotions to Black (*vs.* White) children. In contrast, no significant differences emerged for the attribution of non-uniquely human traits or emotions across groups. As is commonly observed (Leyens et al., 2000), the differential attribution of emotions across groups was not moderated by emotion valence,  $F(1, 19) = .07, p = .800$ . That is, children attributed fewer positive *and* negative uniquely human emotions to Black versus White children. Overall, these findings represent the first documented evidence of *racial* dehumanization among children, using measures comparable to those often used with adults.

### **Descriptive Statistics and Associations Among Key Variables**

Descriptive statistics and inter-correlations among all variables are presented in Table 3-2. Overall, there were no missing values on any of the continuous variables and no univariate outliers ( $> 3 SD$  from the mean) were identified. As indicated in Table 3-2, skewness and kurtosis levels were also within the acceptable range ( $< |2|$ ) for all variables. As predicted, the denial of “uniquely human” characteristics (traits and emotions) to Black children was associated with greater Black-animal metaphoric associations, supporting H2. Thus, to the extent that children perceive racial outgroup members as more animal-like, they also attribute them fewer uniquely human characteristics, validating the use of attribute-based dehumanization measures in children. Of theoretical importance, the psychological constructs underlying the Interspecies Model of Prejudice were also meaningfully inter-correlated in children. Specifically, heightened dehumanization was positively associated with children’s beliefs in the

**Table 3-2***Descriptive Statistics and Inter-Correlations among Key Variables, Study 2.*

	<i>M</i>	<i>SD</i>	<i>S</i>	<i>K</i>	1	2	3	4	5.	6.	7.	8.
1. Human-Animal Divide	20.20	13.30	.43	-1.58	--	.47*	.42*	.45*	.79***	-.43*	-.15	-.13
2. Dehumanization-Emotions	1.55	1.28	.47	-.53		.62	.40 <sup>+</sup>	.54*	.39 <sup>+</sup>	-.41 <sup>+</sup>	-.24	-.09
3. Dehumanization-Traits	1.75	1.33	.51	-.91			.65	.64**	.43*	-.14	-.30	-.02
4. Racial Prejudice	3.05	1.50	.26	-1.26				.82	.41 <sup>+</sup>	-.39 <sup>+</sup>	-.45*	-.23
5. Black-Animal Similarity	21.50	14.51	-.16	-1.54					--	-.34	-.02	-.08
6. Conservation Ability	.70	.47	-.94	-1.24						--	.48*	.07
7. Child Age	7.60	1.31	.69	-.37							--	-.03
8. Child Sex	--	--	-.22	-2.18								--

*Note.*  $N = 20$ . Dehumanization Emotions/Traits= attribution of uniquely human emotions/traits to Black children. Sex (0 = boys; 1 = girls). *S* = skewness; *K* = kurtosis; Values in diagonal represent alpha coefficients.

<sup>+</sup> $p < .07$ ; \*  $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

human-animal divide (supporting H3), and with negative evaluations of Black children (supporting H4). Consistent with cognitive approaches to prejudice development (Aboud, 1988), children's cognitive reasoning (i.e., conservation mastery) was negatively associated with expressions of racial bias (supporting H5), human-animal divide beliefs (supporting H6), as well as dehumanization. Consequently, we control for cognitive ability (in addition to other prejudice correlates) when testing our full Interspecies Model of Prejudice in Study 3.

### **Malleability of the Human-Animal Divide**

Encouragingly, children's human-animal divide perceptions were malleable. Relative to pre-manipulation scores, children reported narrower human-animal divides following exposure to the video highlighting the similarities among humans and animals, supporting H5 ( $M_s = 20.20$  vs.  $10.75$ ),  $t(19) = 3.72$ ,  $p = .001$ . This decrease in human-animal divide following exposure to the video represented a large effect,  $d = .76$ .

### **Introduction: Study 3**

Our initial study provides the first clear evidence of racial dehumanization among children, plus an indication that children's denial of uniquely human characteristics to outgroups is directly associated with explicit animalistic-outgroup perceptions, validating this methodology for measuring subtle dehumanization in children. Our preliminary analyses also indicate that the constructs underlying the Interspecies Model of Prejudice are observable and meaningfully related in children. For the next study we recruited a larger sample of children in order to formally test the Interspecies Model of Prejudice. Specifically, children's human-animal divide beliefs were expected to predict racial prejudice, an effect mediated by racial dehumanization. In Study 3, we also collected data

from the parent/caregiver of the participating child. This allowed us to conduct a test of the Interspecies Model of Prejudice among a community sample of older participants, relative to previous explorations involving adolescent students (Costello & Hodson, 2010). Replication is uncommon but a critical step in validating theoretical models (Kline, 2005).

### **Social Dominance Orientation**

Collecting data from parents also allowed us to empirically link parents' ideological variables with their child's expressions of prejudice. Individuals characterized by higher social dominance orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994) exhibit ideological preferences for hierarchical social relations over egalitarianism. Consequently, SDO is positively associated with prejudiced attitudes, particularly toward subordinate outgroups (Duckitt, 2006; Hodson, Rush, & MacInnis, 2010). Importantly, individual differences in SDO also predict beliefs in the human-animal divide (Costello & Hodson, 2010). Specifically, those higher in SDO exhibit heightened preferences for human superiority over animals, with these perceptions predicting greater dehumanization and subsequent prejudicial evaluations (see Costello & Hodson, 2010). The human-animal divide, therefore, is a mechanism explaining the link between greater SDO (i.e., motivational preferences for general social inequality) and heightened outgroup dehumanization. Here, we determine whether children's human-animal divide beliefs are informed by parental ideology concerning general preference for social dominance. Evidence indicates that parents characterized by prejudice-related ideologies (e.g., SDO), are more likely to raise prejudiced children (Dhont & Van Hiel, 2012; Duriez & Soenens, 2009). To date, however, the particular mechanisms through which

parent SDO impacts children's dehumanization or prejudices are unknown. We propose that parent-SDO indirectly predicts children's dehumanization and prejudice by influencing the extent to which children believe in a hierarchical human-animal divide.

### **Known Predictors of Prejudice in Children**

In testing the Interspecies Model of Prejudice among children, we adopt a conservative approach, statistically controlling for many of the factors conventionally implicated in prejudice development. In keeping with cognitive approaches to prejudice development (Aboud, 1988), the results of Study 2 confirmed that children's cognitive ability, namely mastery of a Piagetian conservation task, is associated with more positive intergroup attitudes. Evidence also suggests that inclusive categorization skills are related to racially biased expressions in children (see Aboud, 2003; Bigler et al., 1997; Houlette et al., 2004). Whilst conservation mastery implies an understanding that stimuli/people can share considerable overlap despite perceptual differences (Doyle & Aboud, 1995), inclusive categorization requires an understanding that groups can be different but belong to the same category (Houlette et al., 2004). Consequently, in Study 3 we control for children's cognitive ability (i.e., namely their conservation *and* inclusive categorization capabilities).

Children's prejudices are also systematically impacted by parental prejudice (e.g., Rodríguez-García & Wagner, 2009; White & Gleitzman, 2006; but see also Aboud & Doyle, 1996), and authoritarian child-rearing (e.g., Adorno et al., 1950). Specifically, prejudiced parents are more likely to raise prejudiced children and to practice harsh and punitive parenting styles (Peterson, Smirles, & Wentworth, 1997). Moreover, children raised under punitive disciplinary conditions are more likely to endorse prejudicial values

(Altemeyer, 1996; Knafo, 2003). Given their established importance in predicting prejudice in children, we test the Interspecies Model of Prejudice controlling for children's cognitive abilities, authoritarian parenting, and parental prejudices. We also control for child age and sex, given that outgroup evaluations tend to become more favourable with age (as in Study 2; see also Doyle & Aboud, 1995) and that boys express greater prejudice than girls (Powlishta, Serbin, Doyle, & White, 1994).

### **Human-Animal Divide Malleability**

Promisingly, Study 2 provided preliminary support for the malleability of children's human-animal divide beliefs – after watching a video highlighting how animals are similar to humans, children reported significantly diminished human-animal divide beliefs. If children's human-animal divide beliefs are indeed flexible, interventions targeting hierarchical human-animal ideology may prove fruitful in reducing human intergroup biases. Relative to pre-test evaluations and a neutral control condition, we evaluate the effects of the human-animal similarity manipulation on children's beliefs in the human-animal divide, but also their dehumanization and prejudice tendencies.

### **Overview of Predictions**

We first seek to confirm the presence of racial dehumanization in children. Both children and parents were expected to exhibit racial dehumanization by attributing fewer uniquely human traits and emotions to Black versus White targets (H1 and H2, respectively). Next we test the Interspecies Model of Prejudice as represented in Figure 1, in which children's hierarchical beliefs regarding humans and animals were expected to indirectly predict heightened racial prejudice through greater dehumanization (H3). Moreover, parent-SDO was expected to impact children's dehumanization and prejudice

indirectly by enhancing the extent to which children endorse hierarchical human-animal divide beliefs (H4). These relations were expected to remain significant even after controlling for previously established predictors of prejudice in children (i.e., prejudiced parental attitudes, authoritarian parenting, social-cognitive skills, and child demographics; H5). In an ancillary analysis we test the Interspecies Model of Prejudice in our community sample of adult participants. Among parents, human-animal divide beliefs were expected to indirectly predict heightened prejudice via dehumanization (H6). Lastly, children exposed to a video highlighting human-animal similarity (*vs.* control) were expected to demonstrate attenuated human-animal divides (H7), dehumanization (H8) and prejudices (H9).

## **Method**

### **Participants and Procedure**

White Canadian children (ages 6-10) and one of their parents were recruited to participate in the present study via advertisements in local newspapers. Included were 29 girls and 24 boys ( $M_{\text{age}} = 7.66$  years,  $SD = 1.21$ ), 42 biological mothers, and 11 biological fathers ( $M_{\text{age}} = 35.28$ ,  $SD = 4.28$ ). For children, the data collection procedure matched Study 1 except where noted. Parents completed parent-measures and demographics for self and child in a separate room. Parents received \$20 for participation.

### **Child-Measures**

Children completed dehumanization (see Appendix O) and prejudice (see Appendix P) measures as in Study 2.

**Human-animal divide** (see Appendix M). In addition to the human-animal divide measure in Study 2, children indicated how superior humans are to animals by

placing a picture of “humans” and “animals” closer together or farther apart on a vertical 60cm board. Greater distance (cm) between the human and animal pictures with humans placed higher than animals reflected greater human superiority to animals. Scores for both measures of the human-animal divide ( $r = .62, p < .001$ ) were standardized and aggregated into a “human-animal divide” index; higher values reflect greater beliefs that humans are distinct from and superior to animals.

**Cognitive ability** (see Appendix Q). In addition to completing the basic water conservation task from Study 2, children completed two inclusive categorization tasks (Inhelder & Piaget, 1964). Mastery of these tasks required knowledge that “dogs” and “cows” belong to a superordinate category “animals,” and that “cars” and “trucks” belong to a superordinate category “vehicles” (0 = *incorrect*; 1 = *correct*). To simplify forthcoming path-modelling, standardized scores for the conservation and inclusive categorization tasks ( $r = .56, p < .001$ ) were aggregated into an overall “cognitive ability” index, with higher values reflecting more cognitive sophistication.

### **Parent-Measures**

**Social dominance orientation** (see Appendix U). Parental SDO levels were assessed using the 16-item Social-Dominance Orientation scale (Sidanius & Pratto, 1999). A sample item reads, “*Some groups of people are just more worthy than others.*” (1 = *strongly disagree* to 7 = *strongly agree*).

**Human-animal divide** (see Appendix F). Parent’s human-animal divide was assessed via 6-items from Costello and Hodson (2010).<sup>2</sup> Items tapped beliefs that humans are distinct from and superior to animals. A sample item reads: “*Humans are so vastly different from other life forms that it is a mistake to classify humans as animals.*”

(1 = *strongly disagree* to 7 = *strongly agree*). Higher scores reflect greater beliefs that humans are separate from and superior to non-human animals.

**Dehumanization** (see Appendix T). Following Leyens and colleagues (2001), parents indicated the extent to which Whites and Blacks experience 6 uniquely human (e.g., hope, guilt) or six non-uniquely human (e.g., happiness, sadness) emotions. Following Costello and Hodson (2010), parents also indicated the extent to which uniquely human (i.e., traits measuring openness and conscientiousness) and non-uniquely human (i.e., traits measuring agreeableness and neuroticism) traits apply to Whites and Blacks (see also Haslam et al., 2005). All items were rated on a 7-point scale (1 = *does not apply* to 7 = *strongly applies*).

**Racial prejudice** (see Appendix H). Parents completed the widely used seven-item Modern Racism Scale (McConahay, Hardee, & Batts, 1981). A sample item reads: “*Black people are getting too demanding in their push for equal rights*” (0 = *strongly disagree* to 4 = *strongly agree*). Higher scores reflect greater prejudice toward Blacks.

**Authoritarian parenting style** (see Appendix V). Punitive parenting was assessed using the four item authoritarian subscale from Robinson, Mandleco, Olsen, and Hart’s (1995) parenting scale. A sample item reads “*I scold and criticize to make my child improve*” (1 = *strongly disagree* to 7 = *strongly agree*).

### **Human-Animal Divide Manipulation**

After completing the primary measures, children were randomly assigned to an experimental ( $n = 26$ ) or control ( $n = 27$ ) condition. In the experimental condition, children viewed the film “Share the World” (see Study 2) to highlight the fundamental similarities among humans and animals. In the control condition, children viewed

“Recycling is Fun” (Perkin, 1991), an equally long film addressing the importance of recycling for the environment without any mention of animals. Afterwards, children again completed the human-animal divide measures ( $r = .50, p < .001; \alpha = .63$ ), as well as abbreviated versions of the dehumanization (i.e., uniquely human traits,  $\alpha = .56$ , and emotions,  $\alpha = .52$ , only) and prejudice measures (i.e., smart, polite, bad, mean;  $\alpha = .50$ ).<sup>3</sup>

## **Results and Discussion**

### **Evidence of Racial Dehumanization**

As in Study 2, separate analyses were conducted to uncover relative attributions of traits and emotions across groups (see bottom half of Table 3-1). Among children, the trait-attribution analysis revealed a significant main effect for Group,  $F(1, 52) = 6.74, p = .012$ , such that more traits were attributed to Whites than Blacks. For the emotion-attribution analysis, significant main effects emerged for Group,  $F(1, 52) = 6.55, p = .013$ , Emotion Type,  $F(1,52) = 16.62, p < .001$ , and Valence,  $F(1,52) = 25.81, p < .00$ . Specifically, fewer emotions were attributed to Blacks versus Whites, and more negative (*vs.* positive) and non-uniquely (*vs.* uniquely) human emotions were attributed overall.

Of greater theoretical importance, Group x Trait (marginal) and Group x Emotion (significant) interactions emerged. In support of H1, children attributed significantly more uniquely human traits and emotions to White than Black children. In contrast, no differential attribution of non-uniquely human traits or emotions across groups emerged, as expected. Moreover, the attribution of uniquely human emotions as a function of group category was not moderated by emotion valence,  $F(1, 52) = .49, p = .487$ . Corroborating Study 2 findings, we again found meaningful evidence of racial dehumanization among children. To simplify forthcoming model testing, a dehumanization composite variable

was created for children by aggregating the standardized total attributions of uniquely human traits and emotions to Black children ( $r = .52, p < .001$ ). After reverse scoring, higher scores reflect decreased attributions of uniquely human characteristics to Black children (i.e., greater dehumanization).

Similar dehumanization effects were observed among parents. The dehumanization-traits analysis revealed a significant main effect for Traits,  $F(1, 52) = 22.52, p < .001$ , such that more uniquely human than non-uniquely human traits were attributed overall. The emotion-attribution analysis revealed significant main effects for Group,  $F(1, 52) = 9.64, p = .003$ , Emotion Type,  $F(1, 52) = 12.38, p < .001$ , and Emotion Valence,  $F(1,52) = 37.85, p < .001$ . Specifically, fewer emotions were attributed to Blacks than Whites, as well as fewer uniquely human (*vs.* non-uniquely human) and fewer negative (*vs.* positive) emotions were attributed overall. More importantly, as indicated in Table 3-1, significant Group x Trait and Group x Emotion interactions were found, with parents attributing significantly fewer uniquely human traits and emotions to Blacks than Whites (supporting H2). As expected, parents did not differentially attribute non-uniquely human traits or emotions to the ingroup versus outgroup. Contrary to the dehumanization analyses for children, parent's attribution of non-uniquely human emotions was moderated by emotion valence,  $F(1, 52) = 5.46, p = .023$ . That is, fewer positive (but not negative) non-uniquely human emotions were attributed to Blacks than Whites ( $p = .035$ ). Nonetheless, White adults characterized Blacks (*vs.* Whites) as experiencing fewer uniquely human characteristics. As with children, a dehumanization composite variable was created for parents by aggregating the standardized (reversed) total attribution of

uniquely human traits and emotions to Blacks ( $r = .48, p < .001$ ), with higher values reflecting greater dehumanization.

### **Descriptive Statistics and Associations Among Key Variables**

Descriptive statistics and inter-correlations for the key continuous variables are presented in Table 3-3. Overall there were no missing values on any of the continuous variables. Two univariate outliers ( $> 3 SD$  from the mean) were identified for parent-SDO and one for parent prejudice. Because the results remained the same upon excluding these outliers, they were included in the final analyses. Additionally, skewness and kurtosis levels were within the acceptable range ( $\leq |2|$ ) for all variables. As indicated in Table 3-3, associations among key variables were largely as predicted and consistent with the Study 2. Among children, beliefs in the human-animal divide, dehumanization, and prejudice were positively associated with each other and with parent-SDO. Consistent with existing theories of prejudice development, authoritarian parenting and social-cognitive skills were systematically associated with children's racial prejudice. That is, children who were reared under punitive conditions and who failed to master basic cognitive tasks demonstrated more prejudiced attitudes and greater human-animal divide beliefs. Furthermore, boys and younger children demonstrated greater inclinations towards both prejudice and dehumanization. Among parents, human-animal divide was positively associated with dehumanization, racial prejudice, and SDO, as expected. Finally, significant positive inter-generational (parent-child) associations were observed for measures of prejudice, dehumanization (marginal), and human-animal divide beliefs.

**Table 3-3***Descriptive Statistics and Inter-Correlations among Key Variables, Study 3.*

	<i>M</i>	<i>SD</i>	<i>S</i>	<i>K</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>Child Measures</b>															
1. Human-Animal Divide	.00	1.00	1.44	1.65	.77	.45***	.48***	.61***	.28*	.28*	.51***	.34*	-.28*	-.24 <sup>+</sup>	.10
2. Dehumanization	.00	1.00	.12	-.74		.65	.55***	.26*	.26*	.23	.22	.15	-.24 <sup>+</sup>	-.17	.36**
3. Prejudice	2.21	1.85	.59	-.76			.74	.40**	.31*	.18	.46***	.37**	-.45***	-.29*	.27*
<b>Parent Measures</b>															
4. SDO	2.24	.87	1.42	2.05				.90	.52***	.35*	.67***	.65***	-.13	-.27*	.13
5. Human-Animal Divide	3.26	1.39	.46	-.15					.91	.43**	.46***	.24	-.13	-.22	.00
6. Dehumanization	.00	1.00	-.06	-.34						.90	.45***	.16	-.24	-.28*	.12
7. Prejudice	.73	.67	1.24	.60							.93	.51***	-.17	-.23	.01
<b>Control Measures</b>															
8. Authoritarian Parenting	2.11	.80	.78	.03								.75	-.19	-.07	.18
9. Cognitive Ability	.00	1.00	-.24	-1.40									.66	.44***	-.06
10. Child Age	7.66	1.21	.29	-.84										--	-.19
11. Child Sex	--	--	.20	-2.04											--

*Note:* SDO = social dominance orientation. Dehumanization = attribution of uniquely human traits and emotions to Black children. Child Sex (0=boys, 1=girls). Values in diagonal represent alpha coefficients. <sup>+</sup> $p < .08$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p \leq .001$ .

### **Test of the Interspecies Model of Prejudice in Children**

Based on our Interspecies Model of Prejudice, we expected children's human-animal divide beliefs to predict outgroup prejudice through heightened dehumanization, with parent SDO positively predicting their child's human-animal divide (see Figure 3-1). These predicted relations were expected to emerge even after controlling for other child prejudice predictors (i.e., parent prejudice, authoritarian parenting, children's cognitive ability, and child demographics). The proposed model, with statistical controls on all variables, was tested with AMOS 18 software using bootstrapping methods ( $n = 2,000$ ) with maximum likelihood procedures to estimate the significance of indirect effects. Initially, all possible paths among variables (including effects of statistical controls on all variables) were tested, resulting in a fully saturated model ( $df = 0$ ) (Taylor, MacKinnon, & Tein, 2008). A summary of direct, indirect, and total effects are provided in Table 3-4. In the interest of maximizing model parsimony, non-significant paths were then dropped (see Kline, 2005), allowing subsequent tests of model fit with statistical controls retained. Recommended model fit criteria include non-significant  $\chi^2$  values,  $\chi^2/df$  values  $< 2$ , comparative fit index (CFI) values  $\geq .95$ , root-mean-square-error of approximation (RMSEA) values  $\leq .06$ , and standard root-mean-squared residual (SRMR) values  $< .08$  (Hu & Bentler, 1999; Kline, 2005).

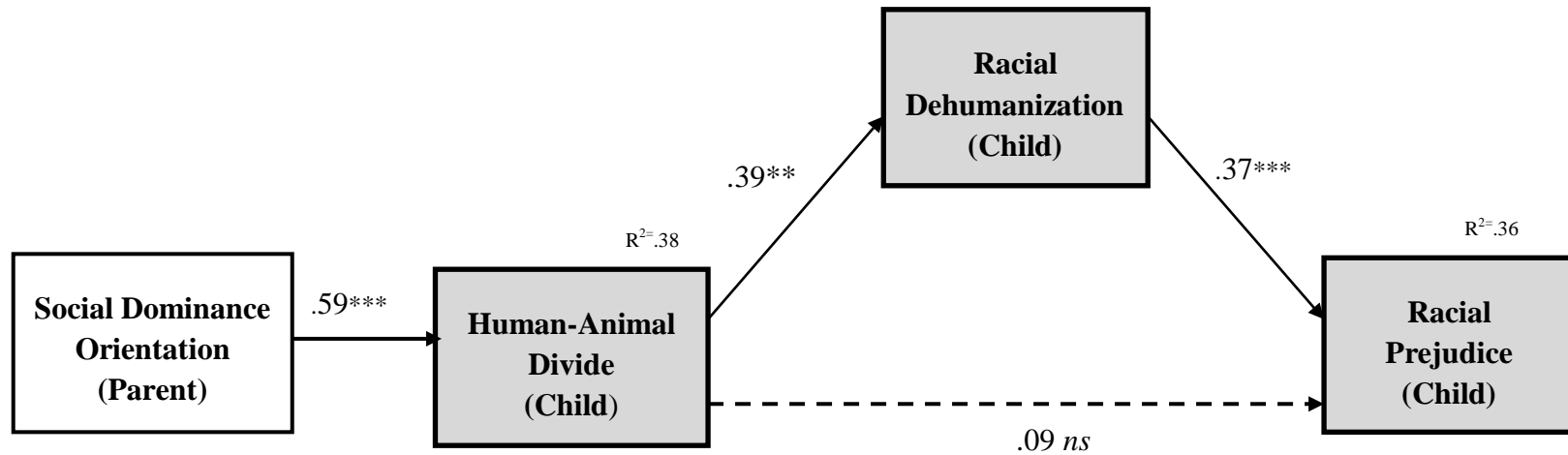
Consistent with H3, the relation between children's human-animal divide beliefs and children's prejudice was entirely indirect via greater dehumanization (see Figure 3-2 and Table 3-4 for a summary of effects). That is, children's heightened beliefs in animal-human divide predicted greater dehumanization, which subsequently predicted heightened prejudice, supporting the Interspecies Model of Prejudice.

**Table 3-4**

*Standardized Direct, Indirect, and Total Effects for the Interspecies Model of Prejudice among Children and Parents (Study 3)*

<b>Criteria</b>	<b>Predictor</b>								
	Social Dominance Orientation (Parent)			Human-Animal Divide (Child)			Dehumanization (Child)		
<b>Child Model</b>	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>
Human-Animal Divide	.59**	---	.59**	---	---	---	---	---	--
Dehumanization	.02	.23*	.23	.39*	---	.39*	---	---	--
Prejudice	.03	.13*	.16	.09	.13*	.22	.35*	---	.35*
<b>Parent Model</b>	Social Dominance Orientation (Parent)			Human-Animal Divide (Parent)			Dehumanization (Parent)		
	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>
Human-Animal Divide	.52**	---	.52**	---	---	---	---	---	---
Dehumanization	.17	.18*	.35*	.35 <sup>+</sup>	---	.35 <sup>+</sup>	---	---	---
Prejudice	.54**	.12*	.67**	.08	.08*	.16	.23*	---	.23*

*Note.* Standardized coefficients based on bootstrapping analyses from fully saturated models. Child model (Figure 3-2) statistically controls for effects of parent prejudice, authoritarian parenting, children's social-cognitive skills, and child sex/age on all path variables. <sup>+</sup> $p < .07$ ; \* $p < .05$ ; \*\* $p < .01$ .



**Figure 3-2.** Interspecies Model of Prejudice (grey) tested among children, including parent-SDO as an exogenous variable (Study 3). Model statistically controlled for the effect of parent prejudice, Authoritarian parenting, children's social-cognitive skills, sex, and age on all variables. Standardized path coefficients derived after non-significant paths dropped from fully saturated model. \*\* $p < .01$ ; \*\*\* $p < .001$ .

In contrast, the direct effect of children's human-animal divide on prejudice was non-significant in the model, despite significant bivariate correlations ( $r = .48, p < .001$ , see Table 3-3). In other words, dehumanization explained the link between children's human-animal divide beliefs and racial prejudice. In support of H4, parent-SDO exerted a significant direct effect on children's human-animal divide, such that children of parents higher in SDO exhibited greater beliefs in the human-animal divide. In contrast, the direct effect of parent SDO on both child dehumanization and prejudice was non-significant (see Table 3-4). In fact, the association between parent-SDO and child prejudice was entirely indirect, operating through the theoretical processes underlying the Interspecies Model of Prejudice.

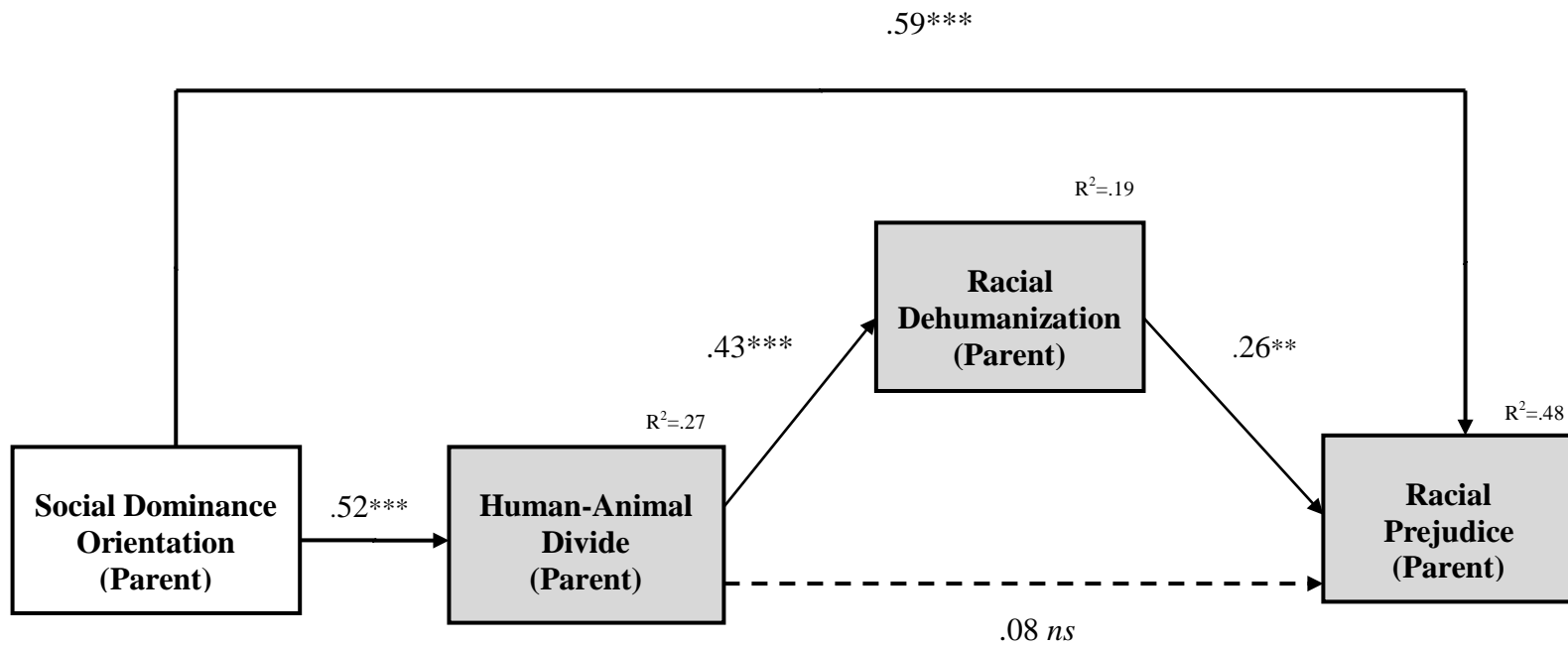
To summarize, parental SDO (involving general preferences for social dominance) positively predicted children's hierarchical beliefs regarding humans and animals; children's human-animal divide beliefs in turn predicted greater racial prejudices, a relation explained by greater outgroup dehumanization. Critically, these predicted effects remained significant even after controlling for known predictors of child-prejudice (i.e., parent prejudice, authoritarian parenting, and social-cognitive skills) and relevant child demographics (i.e., age and sex), supporting H5. The final model illustrated in Figure 3-2, with statistical controls retained, demonstrated good fit to the data:  $\chi^2(3) = .43, p = .933, \chi^2/df = .14, CFI = 1.00, RMSEA = .00, SRMR = .070$ .<sup>4</sup>

Some noteworthy effects involving the statistical control variables also warrant discussion. In keeping with the cognitive approaches to children's prejudice (Aboud, 1988), children's cognitive ability exerted a unique direct effect on prejudice ( $b = -.28, p = .021$ ), and also on human-animal divide beliefs ( $b = -.23, p = .05$ ). Furthermore, a

significant positive path between parent-child prejudices emerged, supporting social-environmental explanations to child prejudice (e.g., Allport, 1954; Rodríguez-García & Wagner, 2009). Impressively, support for the Interspecies Model held beyond these established effects.

### **Tests of the Interspecies Model of Prejudice Among Parents**

Given the importance of replication for the development and validation of theoretical models, a supplementary test of the Interspecies Model of Prejudice was subsequently conducted among our community sample of adults (i.e., parents). A fully saturated model ( $df = 0$ ) was tested to estimate total, direct, and indirect effects (see Table 3-4 for summary and Figure 3-3); non-significant paths were then dropped allowing for tests of model fit. As found with children, parent's human-animal divide beliefs exerted a significant indirect effect on prejudice via greater dehumanization (see Table 3-4). That is, heightened beliefs in the human-animal divide predicted greater dehumanization, which subsequently led to greater prejudice, supporting H6. In contrast, the direct effect of parent's human-animal divide on prejudice was non-significant despite significant bivariate associations among these variables ( $r = .46, p < .001$ ). As indicated in Table 3-4, parent-SDO predicted a significant direct effect on human-animal divide and prejudice, and significant indirect effects on both dehumanization and prejudice. Overall, in support of H7, adults characterized by higher SDO exhibited greater human-animal divide beliefs, which predicted heightened dehumanization and subsequently greater prejudice. The final model illustrated in Figure 3-3 demonstrated good fit to the data:  $\chi^2(2) = 1.78, p = .411, \chi^2/df = .89, CFI = 1.00, RMSEA = .00, SRMR = .046$ .



**Figure 3-3.** Interspecies Model of Prejudice (grey) with SDO, tested among parent participants (Study 3). Standardized path coefficients derived from analyses after non-significant paths were dropped from fully saturated model.

\*\* $p < .01$ ; \*\*\* $p < .001$

### **Human-Animal Divide Malleability in Children**

No pre-manipulation differences emerged between experimental and control children on any of the key constructs ( $ps > .898$ ). Regarding post-manipulation differences, children exposed to the experimental prime highlighting animals' similarity to humans reported narrower human- animal divide beliefs ( $M = -.32, SD = .73$ ),  $F(1, 51) = 7.85, p = .007$ , than control participants ( $M = .31, SD = .89$ ), representing a large effect size ( $d = .77$ ) and in support of H7. Contrary to expectations, comparable post-manipulation analyses revealed no significant differences between experimental and control participants on dehumanization or racial prejudice measures ( $ps > .146$ ). Overall, therefore, children's human-animal divide beliefs were amenable to intervention through video stimuli highlighting human-animal similarities, but any subsidiary effects for dehumanization or prejudice attitudes were not statistically significant.

### **Discussion**

Despite the growing theoretical recognition that dehumanization is a critical predictor of intergroup prejudice and discrimination in adults (e.g., Costello & Hodson, 2010; Goff et al., 2008; Hodson & Costello, 2007), surprisingly little is understood about the role of dehumanization in children's intergroup biases. The present investigation offers important contributions to the prejudice literature and insight into future prejudice interventions. First, we report unequivocal evidence of racial dehumanization in children. Across both studies, White children aged 6-10 consistently dehumanized Black children by attributing them fewer characteristics considered "uniquely human." In contrast, non-uniquely human characteristics were not differentially attributed across target groups. These child dehumanization patterns mirror those previously established in adults (e.g., Costello & Hodson, 2010; Hodson & Costello, 2007; Leyens et al., 2000,

2001, 2007), providing the first known evidence that children endorse dehumanizing representations of racial outgroups. Not only did we find evidence of racial dehumanization among children, we found these effects to be moderate-to-large in size (see Table 3-1). Importantly, our analyses confirmed assumptions that attribute measures of dehumanization (attribution of uniquely human characteristics) are associated with more explicit animalistic outgroup associations, a relation previously found among adults (Loughnan & Haslam, 2007; Loughnan et al., 2009) but untested in children. This provides considerable validation for the use of these attribute-based dehumanization measures among children.

In support of the Interspecies Model of Prejudice, the effect of children's human-animal divide on racial prejudice was fully mediated through dehumanizing representations (specifically, seeing Black children as lower in uniquely human characteristics). Thus, dehumanization explains the link between children's perceptions of human superiority over animals and anti-Black evaluations. A separate ancillary test of the Interspecies Model of Prejudice revealed identical patterns among parents. Consequently, the role of human-animal divide as a meaningful predictor of dehumanization with subsidiary effects on prejudice has been evidenced among university students (see Costello & Hodson, 2010), and now in children and adult-aged samples.

Collecting data from parents allowed us to examine the relation between parent social dominance and children's expressions of prejudice. Recall that those higher in SDO endorse greater beliefs in the human-animal divide (Costello & Hodson, 2010). In the present investigation, children of high-SDO parents also perceived greater human-animal divides relative to those with low-SDO parents. Interestingly, the effect of parent-

SDO on child prejudice was entirely *indirect*, operating through the theoretical paths specified by the Interspecies Model of Prejudice. In other words, increased levels of parental SDO indirectly impacted children's dehumanization (and subsequent prejudices) through children's heightened beliefs in a hierarchical human-animal divide. Of course, there may also be a genetic component to this story as recent research suggests that ideological beliefs, including preference for inequality, may be genetically inherited (Kandler, Bleidorn, & Riemann, 2012). Future research can clarify whether parental ideology impacts child prejudice through the psychological or genetic transmission of group dominance norms.

Encouragingly, the present investigation suggests that children's human-animal divide beliefs are also malleable. Specifically, children reported narrower beliefs in the human-animal divide after viewing a video that induced human-animal similarities relative to a neutral control condition. However, contrary to research with adults (see Costello & Hodson, 2010, Study 2), accentuating human-animal similarities did not significantly influence children's outgroup dehumanization or prejudices relative to the control group. Consequently, the causal relations implied by the Interspecies Model of Prejudice should be cautiously interpreted in this context. We suspect that stronger manipulations of human-animal similarity are likely to reduce children's dehumanization and prejudices. For children, stronger manipulations may be necessary given the non-obvious nature of the link between the human-animal divide and human intergroup relations (see Costello & Hodson, 2012). Indeed, prejudice interventions for younger children are optimally effective when they are concrete and realistic (Aboud & Spears Brown, 2013). This suggests that children may optimally benefit from learning of human-animal similarities via direct interspecies contact, or when links between human and

animal prejudices are made more explicit. Future research can explore the causal assumptions underlying the Interspecies Model of Prejudice by determining the viability of other experimental manipulations of the human-animal divide, as well as the longitudinal outcomes of such interventions.

Research by Costello and Hodson (2010, Study 2) also suggests that the benefit of human-animal similarity for intergroup relations depends on the directional framing of interspecies similarity. Specifically, the researchers manipulated the *framing* of the human-animal contrast, by either accentuating that animals are similar to humans, or that humans are similar to animals (see also Bastian et al., 2012). Making salient that *animals are similar to humans*, but not that *humans are similar to animals*, successfully increased moral concern for human outgroups (Bastian et al., 2012), and significantly reduced outgroup dehumanization and prejudice (Costello & Hodson, 2010, Study 2). In other words, it may not be sufficient to merely stress similarities between humans and animals; the framing of the human-animal contrast is critical, such that the similarity of animals to humans needs to be emphasized. Future research is needed to determine whether the directional framing of interspecies similarity differentially impacts children's intergroup biases, a factor which may account for the non-significant post-manipulation findings found in Study 3.

### **Conclusion**

The present investigation provides the first direct evidence of racial dehumanization in children. Across two studies, White children expressing greater human-animal divide perceptions were more prejudiced toward Black children, with outgroup dehumanization mediating this relation. Moreover, parent ideological preferences for social dominance indirectly predicted children's prejudice through the

route specified by the Interspecies Model of Prejudice. Although human-animal divide perceptions contribute to negative intergroup biases in children, our results highlight the promising implications of targeting the human-animal divide as a possible prejudice intervention.

### Footnotes

- <sup>1</sup> According to Haslam's (2006) model of dehumanization, outgroups can also be mechanistically dehumanized (i.e., likened to machines). Given our focus on human-animal ideology, we focus on animalistic dehumanization.
- <sup>2</sup> Some scale items were borrowed from Templer, Connelly, Bassman, and Hart (2006).
- <sup>3</sup> The abbreviated post-manipulation measures of dehumanization (traits and emotions) had lower alphas relative to the full pre-manipulation measures. This is expected given that the post-test variables were based on fewer items.
- <sup>4</sup> An alternative version of this model, testing whether human-animal divide mediates the relation between dehumanization and prejudice, did not indicate mediation and resulted in poorer model fit [ $\chi^2(6) = 10.87, p = .039, \chi^2/df = 1.84, CFI = .928, RMSEA = .125$ ]. We thank an anonymous reviewer for suggesting this analysis

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## CHAPTER 4: GENERAL DISCUSSION

According to the Interspecies Model of Prejudice, holding hierarchical ideology concerning the relation between humans and animals facilitates beliefs that some humans are relatively more or less animal-like than others (Hodson, MacInnis, & Costello, in press; Haslam, 2006; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007; Leyens et al., 2000, 2001). Accumulating evidence indicates that outgroup dehumanization is a robust predictor of prejudice and discrimination in intergroup contexts (e.g., Costello & Hodson, 2010; Goff, Eberhardt, Williams, & Jackson, 2008; Hodson & Costello, 2007; Leyens et al., 2000, 2001, 2007). Indeed, depriving others of the qualities that allegedly separate humans from “lower” animals is a powerful mechanism used to degrade others (Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). In the last decade there has been an emerging interest in the study of dehumanization, however, there still remain many unanswered questions about the nature of this intergroup phenomenon. This dissertation presented three empirical studies that each offer valuable contributions to the prejudice literature in general and to understanding the fundamental nature of animalistic dehumanization in particular. Specifically, the studies reported provide evidence for dehumanization of a racial outgroup across three diverse samples of participants, as well as novel insight into the causes of and solutions to animalistic dehumanization. In this final Chapter 4, I provide an integrated overview of the research findings in an effort to connect the studies reported (see Table 4-1 for a summary of results). In reviewing the major findings, I also discuss study limitations and implications for future research.

**Table 4-1***Summary of Major Dissertation Results*

<b>Research Question</b>			
	Evidence of Dehumanization	Predictors of Dehumanization	Solutions to Dehumanization (and human-animal divide)
<b>Study 1</b>	White university students (Mean age=19.68) dehumanized a Black outgroup by attributing them fewer uniquely human (but not non-uniquely human) traits and emotions relative to the White ingroup.	Among university students, greater human-animal divide predicted heightened dehumanization, which subsequently predicted greater prejudice toward Blacks. These same participants failed to recognize the human-animal divide as a causal factor for (or solution to) dehumanization.	University students rejected solutions to dehumanization that involved closing the human-animal divide.
<b>Study 2</b>	White children (Mean age=7.60) dehumanized Black children by attributing them fewer uniquely human (but not non-uniquely human) traits and emotions relative to White child targets.	Children's human-animal divide beliefs, dehumanization, and prejudice were positively correlated with one another.	Children's human-animal divide beliefs were significantly narrowed following exposure to a film stimulus that primed human-animal similarities.
<b>Study 3</b>	White children (Mean age= 7.66) dehumanized Black children by attributing them fewer uniquely human (but not non-uniquely human) traits and emotions relative to the White children.  White community adults/parents (Mean age=35.28) dehumanized a Black outgroup by attributing them fewer uniquely human (but not non-uniquely human) traits and emotions relative to the White ingroup.	Children reporting greater beliefs in the human-animal divide exhibited heightened dehumanization and subsequently greater anti-Black attitudes.  Among parents, heightened human-animal divide beliefs predict heightened dehumanization and subsequently greater anti-Black prejudices.	Children's human-animal divide beliefs were significantly narrowed following an experimental ( <i>vs.</i> control) prime of human-animal similarity.  However, the manipulation did not significantly impact children's dehumanization or prejudice levels.

### **Evidence of Racial Dehumanization**

Contemporary approaches to dehumanization have focused on the subtle denial of uniquely human characteristics (e.g., secondary emotions or personality traits measuring Openness and Conscientiousness) to other people/groups relative to self/ingroup (Haslam, 2006; Leyens et al., 2000, 2001, 2007). When others are denied the potential of experiencing uniquely human characteristics, they are perceived as more animal-like (Haslam, 2006; Leyens et al., 2000, 2001). Although several studies offer support for the validity of attribute-based approaches (i.e., denial of uniquely human qualities to outgroups) to dehumanization, the majority of research has been conducted in European countries or Australia among student participants (but see Costello & Hodson, 2010; Hodson & Costello, 2007). In contrast, the studies reported in this dissertation offer consistent evidence for attribute-based dehumanization (involving the relative denial of uniquely human emotions and traits to a racial outgroup) among White university students (Study 1), White children (Studies 2 and 3), and White community adults (Study 3), all within a Canadian context.

In Study 1, White university students attributed fewer uniquely human traits and emotions to Blacks than Whites, representing a subtle form of dehumanization. In contrast, these participants did not disproportionately attribute non-uniquely human characteristics to Whites versus Blacks, confirming previous research (Costello & Hodson, 2010; Hodson & Costello, 2007; Leyens et al., 2001). Studies 2 and 3 provide the first known evidence of racial dehumanization among children (but see Brown, Eller, Leeds & Stace, 2007, and Martin, Bennett, & Murray, 2008, for non-racial infrahumanization effects), with these dehumanization patterns mirroring those

previously established in adults (Costello & Hodson, 2010; Hodson & Costello, 2007; Leyens et al., 2000). Specifically, White children between the ages of six and ten dehumanized Black children by attributing them fewer uniquely human (but not non-uniquely human) traits and emotions relative to the White child targets (see Table 3-1). Moreover, this subtle expression of dehumanization was strongly and positively related to children's explicit beliefs that Black children are more animal-like. This last finding confirms the previously untested assumption that attribute measures of dehumanization (i.e., lesser attributions of uniquely human characteristics) are associated with explicit animalistic outgroup representations among children (see Loughnan & Haslam, 2007; Loughnan, Haslam, & Kashima, 2009, for similar findings among adults). Lastly, Study 3 also allowed for an ancillary test of dehumanization effects among a community sample of adult parents. In keeping with the previous effects, White community adults attributed fewer uniquely human (but not non-uniquely human) emotions and traits to Blacks than Whites. Overall, the studies presented contribute immensely to the accumulating evidence of subtle attribute-based expressions of dehumanization, but also broaden the field by providing the first clear evidence of racial dehumanization in children.

### **Predictors of Dehumanization**

Despite accumulating interest in studying the expression and consequences of dehumanization, little is known about the roots or underlying causes of dehumanizing tendencies. According to the Interspecies Model of Prejudice (Costello & Hodson, 2010; Hodson et al., in press), the human-animal divide and accompanying connotations of human superiority over animals have important implications for the development and justification of human outgroup biases. Specifically, the model stipulates that animalistic

dehumanization is the key psychological process responsible for the observed link between the human-animal divide and human prejudice/discrimination (Costello & Hodson, 2010; Hodson et al., in press). In all three studies, robust support for the Interspecies Model of Prejudice emerged. According to path analyses involving students (Study 1), children (Study 3), and adult parents (Study 3), the effect of human-animal divide on racial prejudice was fully mediated by heightened outgroup dehumanization (specifically, seeing Blacks as lower in uniquely human traits and emotions). In fact, human-animal divide perceptions would not predict human outgroup prejudice if not for animalistic dehumanization of that outgroup. Consequently, these results indicate that the human-animal divide is a meaningful predictor of dehumanization with subsequent effects on prejudice. Although the Interspecies Model of Prejudice implies causal paths, the data reported in this dissertation are correlational in nature. However, the causal nature of the Interspecies Model of Prejudice is supported by previous experimental research in which manipulations of animal-human similarity systematically reduced dehumanization (Costello & Hodson, 2010, Study 2), as well as increased moral inclusivity toward human outgroups (Bastian, Costello, Loughnan, & Hodson, 2012, Study 3).

Interestingly, in Study 1 laypeople were remarkably unaware of the systematic role that their personal beliefs in the human-animal divide play in determining their inter-human prejudices. Indeed laypeople considered the human-animal divide as an extremely *unlikely* cause of dehumanization. Instead, participants believed that dehumanization was caused by more traditional prejudice factors including closed-mindedness, lack of education, cultural differences, and parental influences. These findings suggest that lay

beliefs about the causes of dehumanization are inconsistent with current scientific theory. This finding has problematic implications for public policy decision-making as it suggests that people may be resistant to interventions and education strategies targeting the human-animal divide as dehumanization and/or prejudice interventions. Indeed we also see inconsistencies between lay beliefs and scientific theory in non-psychological domains. For example, conservatives report increasing distrust in science over time (Gauchat, 2012), and they often hold beliefs that are in direct conflict with scientific evidence or theory (e.g., conservatives remain sceptical of Global Warming despite the scientific evidence). Such beliefs can have serious consequences. Consider that greater conservatism is associated with lower perceived risk of climate change (Choma, Hanoch, Gummerum, & Hodson, in press); failure to see risk presumably de-motivates people to implement strategies to reverse the negative impact of human activity. Gauchat (2012) argues that social scientists and policymakers should be increasingly concerned about the public's resistance to science because such inconsistencies can impede efforts to address important social issues.

### **Solutions to Dehumanization**

If the human-animal divide is truly a fundamental precursor to dehumanization as observed by the Interspecies Model of Prejudice, we should be able to attenuate dehumanization by closing the human-animal divide. However, laypeople in Study 1 were strongly opposed to dehumanization solutions involving manipulations of human-animal similarities and instead recommended intergroup contact, education, and parental influence as more probable solutions to dehumanization. Thus, not only are people unaware of the causal role that human-animal divide plays in predicting dehumanization,

they are resistant to dehumanization interventions that involve closing the human-animal divide. This is problematic because we know from previous research that closing the human animal divide by means of highlighting animal-human similarities is an effective strategy for reducing dehumanization and subsequent outgroup biases among university-aged samples (Bastian et al., 2012, Study 3; Costello & Hodson, 2010, Study 2). Consequently, future research is needed to determine whether laypeople are genuinely *unaware* of the role that human-animal divide plays in determining or solving dehumanization or whether this position represents *motivated resistance*. If the latter is true, perhaps more indirect interventions are needed to circumvent laypeople's resistance. For example, in a study by Hodson, Choma, and Costello (2009), participants took part in an exercise that required them to imagine life on an alien planet that inadvertently simulated experiences of homosexuals in contemporary society. Overall, the exercise significantly reduced prejudice toward gay men and lesbian woman, even among highly prejudiced people. The simulation exercises impacted attitudes by increasing intergroup perspective taking and, subsequently, outgroup empathy and inclusive intergroup representations. Perhaps similar exercises that inadvertently highlight the parallel experiences of non-human animals and marginalized humans (e.g., factory farm *versus* holocaust) would facilitate an understanding that human-animal relations are interconnected. Future research can explore this possibility (see Hodson, Costello, & MacInnis, 2012).

Are young children's beliefs in the human-animal divide malleable to intervention? In Studies 2 and 3, children were exposed to a video manipulation highlighting human-animal similarities (or a neutral control video, in Study 3 only).

Promisingly, children in the human-animal similarity condition reported narrower human-animal divides relative to control participants. Contrary to expectations, however, experimentally “closing” the human-animal divide did not significantly reduce children’s dehumanization or prejudice, relative to the neutral control condition (although the means were in the predicted direction). These non-significant effects could mean that the human-animal divide does not “cause” dehumanization in children. However, a more likely interpretation (given the experimental evidence among adults in Costello & Hodson, 2010, Study 2) is that the manipulation was not strong or explicit enough to impact children’s human intergroup attitudes. Recall that the manipulation consisted of 15 minutes of video footage on the emotional and mental capacities of animals (Ellis, Pakay, & Carolon, 2010). For the most part, children were left to make their own inferences about how the animals featured in the film are similar to humans. This may not have been optimal, because children require particularly concrete and direct interventions (Aboud & Spears Brown, 2013). Consequently, the manipulation might have impacted children’s intergroup attitudes if it had included a post-film discussion (led by a researcher or teacher) about the human-animal similarities displayed in the film. At the very least, future research can evaluate the usefulness of more concrete human-animal similarity manipulations.

One promising direction for future research is interspecies contact. At the human level, positive inter-group contact generally leads to more favourable outgroup attitudes among adult and child participants (Pettigrew & Tropp, 2006). Moreover, cross-group friendships also lead to more favourable outgroup attitudes among children (e.g., Brown et al., 2007; Feddes, Noack, & Rutland, 2009). One mechanism through which intergroup

contact impacts outgroup attitudes is increased intergroup similarity or self-other overlap (e.g., Hodson, Harry, & Mitchell, 2009). For example, in Cameron, Rutland, Brown, and Douch (2006), positive contact-attitude effects among children were mediated by heightened reports of self-other overlap. Future research can examine whether frequent opportunities for interspecies contact increases perceptions of human-animal similarity.

The manipulation of human-animal similarity in Studies 2 and 3 of this dissertation did not systematically frame the direction of the human-animal contrasts discussed. Critically, Costello and Hodson (2010) argue that the benefit of human-animal contrasts for intergroup relations depends on how the interspecies similarities are framed. Specifically, making salient that *animals are similar to humans*, but not that *humans are similar to animals*, successfully reduces outgroup dehumanization (Costello & Hodson, 2010, Study 2), and increases moral concern for non-human animals and marginalized human outgroups (Bastian et al., 2012, Study 3). In contrast, this previous work highlights the detrimental intergroup consequences of manipulations that liken humans to animals (Bastian et al., 2012, Study 3; Costello & Hodson, 2010, Study 2), as such comparisons presumably make obvious our animalistic nature and motivations (see Bastian et al., 2012). In other words, it is not sufficient to merely stress similarities between humans and animals; the framing of the human-animal contrast is critical in order to have a positive impact on human intergroup relations. Future research is needed to determine whether the directional framing of human-animal contrasts also matters for children, perhaps accounting for the non-significant post-manipulation findings in Study 3 of this dissertation. Like adults, children's intergroup attitudes may only benefit from

manipulations that make obvious animals' similarity to humans *and not* humans' similarity to animals.

### **Other Limitations and Implications**

Uncovering systematic evidence of racial dehumanization among children represents an important and novel contribution to the prejudice literature. However, this dissertation focused solely on attribute measures of dehumanization (i.e., attributions of uniquely human traits and emotions) involving racial outgroups (i.e., Blacks). Consequently, future research can explore whether children are capable of dehumanizing other stigmatized outgroups (e.g., immigrants, gays/ lesbians, etc.), perhaps making use of alternate measures of dehumanization such as the implicit association task that has been used in studies with adults (see Viki et al., 2006). Furthermore, because the focus of this dissertation was on animalistic dehumanization, it is unknown whether children are capable of mechanistic dehumanization via attributing outgroup (versus ingroup) members fewer qualities considered essential but not unique to the human essence (see Haslam, 2006). Future research can test this possibility.

The present dissertation is also limited by the fact that the samples consisted primarily of White participants (although they span across student, adult, and child samples), meaning that the generalizability of the findings could be compromised. Consequently, future research is also needed to replicate the Interspecies Model of Prejudice cross-culturally. It is reasonable to speculate that dehumanizing tendencies are more/less prevalent among cultures where people exhibit greater/lesser beliefs in the human-animal divide. For example, research by Kellert (1993) indicates that dominion-orientated attitudes toward animals (i.e., beliefs that humans have the right to exert

mastery and control over animals) are more common in Japan than the USA. Thus it would be interesting to determine whether dehumanization tendencies are also heightened in those cultures that endorse dominance-based attitudes towards animals.

The results of the present studies may have also been influenced by the strategies used to recruit participants. In Study 2, most of the parent participants were recruited by the author of this dissertation, resulting in a non-random sample. In addition, although participants in Studies 1 and 3 were volunteers, the participant recruitment advertisements used titles that mentioned animals and/or nature (e.g., *Attitudes toward people, animals, and the natural world*). Thus, it is possible that people with pre-existing positive attitudes toward animals (or interest in animals) self-selected into the present studies, thereby impacting the randomness of the samples. However, this limitation may also speak to the strength of the results given that strong support was found for most predictions despite the potential of having restricted variance on some variables. Nonetheless, future research should attempt to replicate the results of the present studies using a more representative and truly random sample.

This dissertation clearly highlights the fact that our thinking about humans in relation to animals has important consequences for how we view and treat each other. Therefore, it is crucial that we examine the origin of human-animal divide beliefs themselves. As reported in Studies 2 and 3, children as young as six years old hold meaningful beliefs about the human-animal divide. Moreover, children's cognitive ability (Studies 2 and 3), and parents' social-dominance orientation (Study 3) significantly predict the extent to which children believe in a greater human-animal divide. Future research can consider the role of other potential human-animal divide predictors such as

parent's religious fundamentalism (see DeLeeuw, Galen, Aebersold, & Stanton, 2007), disgust sensitivity (see Hodson & Costello, 2007), or other societal constructions that may perpetuate beliefs about human superiority over animals. For example, research suggests that the mere act of eating animals widens the human-animal divide by reducing perceptions that "food" animals share human-like qualities and/or moral status (Bastian, Loughnan, Haslam, & Radke, 2010; Bilewicz, Imhoff, & Drogosz, 2011; Loughnan, Haslam, & Bastian, 2010). This research reminds us of the complexity of human-animal relations as most people value certain animal species over others (e.g., companion animals versus farm animals). For example, many people "own" pets (e.g., cats and dogs) and claim to "love" animals, but nonetheless eat other animals (e.g., chickens, pigs, and cows) for dinner. Future research is needed to improve our understanding of the dynamics of the complex relationships between humans and other animals.

One final issue common to all three studies is the assumption that viewing humans as *different* from other animals automatically implies that humans are *superior* to animals. In reality, this relation is likely much more complex. Although human-animal dissimilarity is highly correlated with beliefs about human superiority over animals (see Study 3, and Costello & Hodson, 2010), there are likely people who view humans and animals as different in degree, but not in kind. Future studies can investigate the consequences of perceiving humans as dissimilar but not necessarily superior to other animals.

### **Conclusion**

For centuries, moral philosophers and prominent scholars have put forth the idea that our treatment of non-human animals has important implications for how we treat

other humans (Livingstone-Smith, 2011; Nibert, 2002; Patterson, 2002). The Interspecies Model of Prejudice specifies that beliefs in the human-animal divide lead to negative intergroup attitudes and behaviours by facilitating the derogatory nature of animalistic outgroup dehumanization (Costello & Hodson, 2010; Hodson et al., in press). In each of the studies reported, consistent evidence for the Interspecies Model of Prejudice emerged, thereby contributing to our understanding of the causes and solutions to dehumanization. Specifically, heightened beliefs in the human-animal divide were associated with greater racial dehumanization (i.e., denials of uniquely human characteristics to Blacks), which in turn predicted more anti-Black evaluations. In fact, human-animal divide would not predict anti-outgroup attitudes if not for the mediating effect of outgroup dehumanization. Importantly, these effects emerged among university students (Study 1), community adults (Study 3), and children (Study 3).

Despite empirical evidence supporting the Interspecies Model of Prejudice in Study 1, laypeople were largely unaware of the causal influence that their human-animal divide beliefs exert on their dehumanization tendencies. As such, these people were also resistant to dehumanization interventions that involved closing the human-animal divide. These findings are not surprising because interspecies relations are seriously neglected in everyday conversation and within the scientific literature (Hodson et al., in press). This is problematic because dehumanization can be reduced by experimentally closing the human-animal divide (see Costello & Hodson, 2010, Study 2). Furthermore, Studies 2 and 3 provide preliminary evidence that children's human-animal divide beliefs are also flexible, and that more direct and concrete human-animal divide manipulations might also reduce dehumanization in children. Consequently, we must acknowledge the

relevance of interspecies relations through casual and scientific discourse to ensure that educators are receptive to implementing interspecies educational components and possibly human-animal divide interventions to reduce dehumanization and prejudice.

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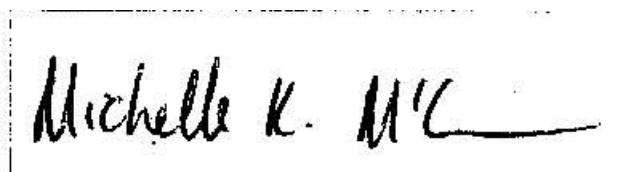
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**APPENDIX A****DATE:** 12/3/2010**PRINCIPAL INVESTIGATOR:** HODSON, Gordon - Psychology**FILE:** 10-114 - HODSON**TYPE:** Ph. D. STUDENT: Kimberly Costello**SUPERVISOR:** Gordon Hodson**TITLE:** Causes of and Solutions to Social Issues**ETHICS CLEARANCE GRANTED****Type of Clearance:** NEW Expiry Date: 12/31/2011

The Brock University Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri- Council Policy Statement. Clearance granted from **12/3/2010 to 12/31/2011**. The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before **12/31/2011**. Continued clearance is contingent on timely submission of reports. To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page. In addition, throughout your research, you must report promptly to the REB: a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study; b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants; c) New information that may adversely affect the safety of the participants or the conduct of the study; d) Any changes in your source of funding or new funding to a previously unfunded project. We wish you success with your research.

Approved:

A handwritten signature in black ink, reading "Michelle K. McGinn", enclosed in a rectangular box with a dashed border.

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Michelle McGinn, Chair  
Research Ethics Board (REB)

## APPENDIX B

**Title of Study:** Causes and Solutions to Social Attitudes

**Principle investigator:** Kimberly Costello  
PhD Candidate, Department of Psychology  
Psychology kimberly.costello@brocku.ca

**Faculty Supervisor:** Dr. Gordon Hodson  
Associate Professor, Department of  
ghodson@brocku.ca, ext 5127

**PURPOSE/INFORMATION:** You are being invited to participate in a study investigating the factors people believe are responsible for causing and/or solving various social attitudes. You will be asked to complete a series of questionnaires. The duration of your participation is approximately 60 minutes. Upon completion you will be provided with a debriefing form which describes more details about the purpose of the study.

**RISKS/BENEFITS:** Some of the questions may be unpleasant to answer for they deal with sensitive subjects such as race, etc. You may decline to answer any questions or participate in any component of the study. Participation in this study can count as course research participation *or* you may accept a payment of \$5 (you must choose only 1 of these options).

**CONFIDENTIALITY:** All information provided is considered confidential; your name will not be associated with the data collected in the study. Only the Principal Investigator & the Faculty Supervisor will have access to the data, and all information will be stored securely at all times. Given the intentions of publishing the results, data will be kept until approximately 5-7 years from date after which all data will be destroyed.

**PARTICIPATION:** Your participation is voluntary and you may decline to participate at any time. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled.

**FEEDBACK AND PUBLICATION:** The results from this may be used in journal articles or presentations. The results of this research study may be available approximately 1 year from now. Please provide you email address below if you would like to receive a copy of the results.

**CONTACT:** If you have any questions about this study please contact the Principal Investigator or the Faculty Supervisor. If you have any concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, [reb@brocku.ca](mailto:reb@brocku.ca). This study has received ethics clearance through Brock University's Research Ethics Board (REB # 10-114)

**CONSENT:** I have read and understand the above information. I understand that I may ask questions in the future. I agree to participate in this study. Please check one of the following:

**Participant's Signature:** \_\_\_\_\_

**Researcher's Signature:** \_\_\_\_\_

**APPENDIX C**

We are interested in how people define various social phenomena. How would you personally define the following construct? There is no right or wrong answers- list anything you feel is relevant to defining the construct. *Because we are interested in your initial/ natural thoughts please refrain from leaving items blank and/or returning to answer these questions after completing the forthcoming pages.*

**How would you define “DEHUMANIZATION”?**

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## APPENDIX D

**DEHUMANIZATION** refers to beliefs that other people/groups are more animal-like.. Circle a number from 1-7 to indicate the extent to which each of the following factors are responsible for CAUSING dehumanization? There are no right or wrong answers.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Not at all</b>			<b>Neutral</b>			<b>Very Much</b>

### CAUSES OF DEHUMANIZATION

Disgust (or revulsion) towards other groups

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Lack of contact between groups

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Media influence

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Beliefs that humans are superior to other animals (i.e., beliefs in the human-animal divide)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Ignorance

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Parental influence

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Beliefs that the outgroup is inferior (i.e., less important)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Realistic threats (i.e., competition for resources)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Symbolic threats (i.e., conflicting cultural practices/ worldviews)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Fear of the outgroup

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Negative contact/experiences with the outgroup

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Organized religion

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Closed- mindedness

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Social Identity Threats (i.e., protect/ enhance ingroup's identity/ status)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Human nature (i.e., natural order of things, tradition)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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## APPENDIX E

Please circle a number from 1-7 to indicate the extent to which each of the following factors could serve as useful **SOLUTIONS** to **DEHUMANIZATION** (*beliefs that other humans/ groups are more animal-like or less human*)? There are no right or wrong answers.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Not at all</b>			<b>Neutral</b>			<b>Very Much</b>

### **SOLUTIONS TO DEHUMANIZATION**

More opportunities for positive contact between social groups

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Media influence

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Highlighting similarities between human groups

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Highlighting how humans are similar to animals

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Parental influence

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Human Education (i.e., tolerance for difference worldviews, cultural sensitivity, etc)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Organized religion

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Open-mindedness

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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Promoting cross-group friendships (i.e., friendships with members from other social groups)

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

Highlighting how animals are similar to humans

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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## APPENDIX F

Using the scale below, please circle a number from 1-7 to indicate the extent to which you agree or disagree with the following statements. There is no right or wrong answers.

<b>1</b>		<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>		<b>Neutral</b>			<b>Strongly Agree</b>		

1. Humans are not the only creatures who have complex thoughts; animals think complexly too.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

2. Animals have emotions such as affection, anger, or fear just like humans.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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3. Humans are so vastly different from other life forms that it is a mistake to classify humans as animals.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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4. Humans evolved from other animals, thus other animals and humans are structurally and mentally similar.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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5. Animals may act as if they are emotional, but they don't really feel emotions like humans do.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
----------	----------	----------	----------	----------	----------	----------

6. Humans are superior to animals.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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7. Animals can fall in love too.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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8. The needs of humans should always come before the needs of animals.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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9. It is okay to use animals to carry out tasks for humans.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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10. It is crazy to think of an animal as a member of your family.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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## APPENDIX G

Listed below, in the left hand column, are a number of emotions and traits. **Using the scale below, indicate how much you think the emotions/ trait applies to the following groups generally.** For example, circle “5” if you strongly agree that the emotion/trait applies to the group generally or “1” if you strongly disagree and believe that the emotion/trait does not apply to the group generally.

<b>Disagree Strongly (1)</b>	<b>Disagree (2)</b>	<b>Neither Disagree or Agree (3)</b>			<b>Agree (4)</b>	<b>Agree Strongly (5)</b>				
	<b>Blacks</b>					<b>Whites</b>				
<b>Guilt</b>	1	2	3	4	5	1	2	3	4	5
<b>Sadness</b>	1	2	3	4	5	1	2	3	4	5
<b>Anger</b>	1	2	3	4	5	1	2	3	4	5
<b>Friendliness</b>	1	2	3	4	5	1	2	3	4	5
<b>Compassion</b>	1	2	3	4	5	1	2	3	4	5
<b>Hope</b>	1	2	3	4	5	1	2	3	4	5
<b>Despair</b>	1	2	3	4	5	1	2	3	4	5
<b>Happiness</b>	1	2	3	4	5	1	2	3	4	5
<b>Imaginative</b>	1	2	3	4	5	1	2	3	4	5
<b>Careless</b>	1	2	3	4	5	1	2	3	4	5
<b>Curious</b>	1	2	3	4	5	1	2	3	4	5
<b>Impulsive</b>	1	2	3	4	5	1	2	3	4	5
<b>Nervous</b>	1	2	3	4	5	1	2	3	4	5
<b>Self-disciplined</b>	1	2	3	4	5	1	2	3	4	5
<b>Disorganized</b>	1	2	3	4	5	1	2	3	4	5
<b>Calm/relaxed</b>	1	2	3	4	5	1	2	3	4	5
<b>Uncooperative</b>	1	2	3	4	5	1	2	3	4	5
<b>Unemotional</b>	1	2	3	4	5	1	2	3	4	5

## APPENDIX H

Using the scale below, please circle a number from 0-4 that most accurately represents your views on the following items. There is no right or wrong answer.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Disagree strongly</b>		<b>Neither agree nor disagree</b>		<b>Agree strongly</b>

1. Over the past few years, the government and news media have shown more respect for Black people than they deserve.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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2. It is easy to understand the anger of Black people in Canada.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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3. Discrimination against Black people is no longer a problem in Canada.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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4. Over the past few years, Black people have gotten more economically than they deserve.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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5. Black people have more influence on government policies than they ought to have.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
----------	----------	----------	----------	----------

6. Black people are getting too demanding in their push for equal rights.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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7. Black people should not push themselves where they are not wanted.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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**APPENDIX I****DATE:** 9/21/2010**PRINCIPAL INVESTIGATOR:** HODSON, Gordon - Psychology**FILE:** 10-034 - HODSON**TYPE:** Ph. D. STUDENT: Kimberly Costello**SUPERVISOR:** Gordon Hodson**TITLE:** The Development of Children's Social Attitudes: Part 2**ETHICS CLEARANCE GRANTED****Type of Clearance:** NEW Expiry Date: 9/30/2011

The Brock University Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri- Council Policy Statement. Clearance granted from **9/21/2010 to 9/30/2011**. The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before **9/30/2011**. Continued clearance is contingent on timely submission of reports. To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page. In addition, throughout your research, you must report promptly to the REB: a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study; b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants; c) New information that may adversely affect the safety of the participants or the conduct of the study; d) Any changes in your source of funding or new funding to a previously unfunded project. We wish you success with your research.

Approved:

A handwritten signature in black ink, reading "Michelle K. McGinn", enclosed in a rectangular box with a dashed border.

Michelle McGinn, Chair

Research Ethics Board (REB)

## APPENDIX J

**Principal investigator:** Kimberly Costello, PhD candidate, Dept of Psychology, Brock University kimberly.costello@brocku.ca 905-688-5550 # 5560

**Faculty Supervisor:** Dr. Gordon Hodson, Associate Professor, Dept of Psychology, Brock University. ghodson@brocku.ca, 905 688-5550 # 5127

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Dear Parent(s) Or Guardian(s):

We would like permission for your child to participate in a Brock University research project on the development of social attitudes in children.

**PURPOSE OF STUDY:** We are interested in identifying how various social attitudes and group representations develop in children. The project in which your child has been invited to participate is expected to be an enjoyable experience and will require approximately 60 minutes of your child's time. Your child will meet with the researcher individually (no other children will be present) at which time you will be asked to wait in the nearby waiting room. In the session, your child will be asked to answer a series of questions about their social attitudes toward different groups. Your child also then be invited to view a short educational video called "Share the World" which was designed to help children better understand and appreciate the animals with whom we share our world. Upon completion you will be provided with a debriefing form which will describe in more detail the purpose of the study.

**RISKS/BENEFITS:** We do not anticipate any risks associated with participating in this study. You should however, be aware that your child will be asked some questions about their feelings toward children from different races. Please note that there is no right or wrong answer to any of the questions your child will be asked, and that it is natural for children and adults to vary in terms of how much they view or like other groups and people. We would appreciate if you would permit your child to participate in this project, as we believe it will contribute to furthering our knowledge of the development of important social attitudes in children. In appreciation for your child's participation, he/she will be offered a bookmark or pencil upon completion of the study.

**CONFIDENTIALITY:** All children's information is considered confidential and your child's name will not be associated with any of the data collected. Individual results will not be shared as we are only interested in average responses. Only the principal investigator and faculty supervisor will have access to the data, and all information will be stored securely. Given the intentions of publishing the results, data will be kept until approximately 5-7 years after which all data will be destroyed.

**PARTICIPATION:** Your child’s participation is completely voluntary and your child may decline to participate at any time by indicating this decision to the researcher. Your child may also decline to answer any questions or participate in any component of the study. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled.

**FEEDBACK AND PUBLICATION:** The results from this study may be used in future journal articles or presentations. If you would like to receive a copy of the results of this research study when available, please provide your email address below.

**CONTACT:** If you have any questions about this study please contact the principal investigator or the faculty supervisor (see contact info above). I would like to assure you that this study has been reviewed and received ethics clearance through Brock University’s Research Ethics Board (REB# 10-034). If you have any concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

**CONSENT:**

- I have read and understand the information letter concerning the research project entitled “The Development of Social Attitudes” by Kimberly Costello (PhD student) and Dr. Gordon Hodson of the Department of Psychology at the Brock University. I have had the opportunity to ask questions and understand that I may ask questions in the future.
- I acknowledge that all information gathered on this project will be used for research purposes only and will be considered confidential.
- I am aware that permission may be withdrawn at any time without penalty by advising the researchers.
- I realize that this project has been reviewed by, and received ethics clearance through, the Office of Research Ethics at Brock University, and that I may contact this office if I have any comments or concerns about my son's or daughter's involvement in this study.

**PERMISSION DECISION:**

- Yes - I would like my child to participate in this study
- No - I do not want my child to participate in this study

Signature of Parent or Guardian: \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

*If you would like a copy of the results, please provide your email address:*

\_\_\_\_\_

## APPENDIX K

**Child's name:** \_\_\_\_\_

**Note:** The Investigator will verbally read the content on this form to the child participant.

**Investigator:** *My name is \_\_\_\_\_ and I am a Student at Brock University. Your parent/guardian gave you permission to participate in a project I am working on for my studies. I am going to tell you about our project, and I would like to know if you are interested in taking part in the project.*

**Why are we doing this study?** *We are interested in finding out how children of your age feel about different groups of children and animals and different social situations.*

**What will happen to you if you decide to take part in the study?** *If you decide to take part in this study we will ask you some questions about your feelings toward different groups and situations and you will be asked to view a short film. There is no right or wrong answer to any of the questions that we will ask you; we are just interested in how you really feel. It will take you approximately 1 hour to answer all the questions.*

**Who will see my answers?** *Your answers will be private, so be as honest as you can. Your parents will never see the answers you give or the information we write about you. If there is a question that you do not know how to answer, or you do not want to answer, that's okay, just tell us. You do not have to be in this study and no one will get angry or upset with you if you don't want to do this. Please tell us at any time, if you don't want to be in the study.*

**Do you have any questions?** *You can ask questions now or at any time throughout the study.*

*Do you want to participate in this study?*

Yes       No

**Note:** Investigator will record the child's response by checking "yes" or "no"

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

APPENDIX L

A) Black Boy



B) Black Girl



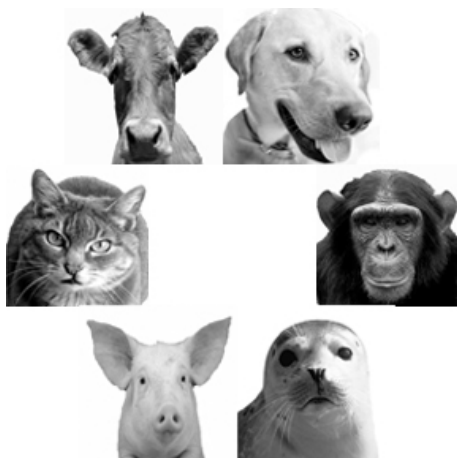
C) White Boy



D) White Girl



E) Animals



F) Children (People)



## APPENDIX M

**Investigator:** *I am going to show you two pictures at a time and I would like you to tell me how similar or different you think the objects/ people/ groups in the pictures are. If you think the pictures are similar you will place them closer together on the board. If you think that they are different you will place the pictures further apart on the board. Do you understand?*

*How similar are green and red apples? If you think they are really similar place the pictures side by side on the board. If you think they are kind of similar but not exactly the same place the pictures close together but not side by side. If you think they are a really different, place the pictures farther apart on the board.*

**Note:** Theoretically the child should place the photos close together. If the child fails to understand the similarity between the photos, ask them why they placed the photos where they did and attempt to explain how they are similar (i.e., they are both apples). The investigator will use 2 more practice examples, one of which involve an apple and orange (similar but not the same), and an apple and pencil (very different).

**1) PEOPLE and ANIMALS:** *How similar are people and animals? Place the pictures on the board closer together the more similar humans and animals are, or further apart the more different humans and animals are.      Distance in CM \_\_\_\_\_*

**Investigator:** *I am going to show you two pictures at a time and I would like you to tell me how important you think the objects/ people/ or groups in the photos are. If you think they are both equally important place them side by side on the board. If you think one is more important than the other, place the more important photo above the less important photo.*

*How important are green and red apples? If green and red apples are equally important place the pictures side by side on the board. If you think the green apple is more important than the red apple place the green apple higher on the board or if you think the red apple is more important place the photo of the red apple above the green apple.*

**1) PEOPLE and ANIMALS:** *How important are animals compared to people? If animals and people are equally important place the pictures side by side on the board. If you think people are more important than animals place the picture of people above animals, or if you think animals are more important than people place the pictures of the animals above the people.*

People more important \_\_\_\_\_ Equally important \_\_\_\_\_ People less important

\_\_\_\_\_

Distance in CM \_\_\_\_\_

**APPENDIX N**

***Investigator:** I am going to show you two pictures at a time and I would like you to tell me how similar or different you think the objects/ people/ groups in the pictures are. If you think the pictures are similar you will place them closer together on the board. If you think that they are different you will place the pictures further apart on the board. Do you understand?*

- 1) BLACK CHILDREN and ANIMALS:** *How similar are Black children and Animals? Place the pictures on the board closer together the more similar the Black children and animals are, or further apart the more different the Black children and animals are. Distance in CM \_\_\_\_\_*

## APPENDIX O

**Investigator:** Each of these boxes belongs to the child pictured on the front and the third box with the “X” belongs to no-one. I am going to tell you how some children may act and I want you to tell me which child acts that way by placing the card(s) in either the White child’s box, the Black child’s box, both the White and Black child’s boxes, or if one or both children do not act that way you will place the card (s) in the box with the “X”.

**Practice Item: MUSIC:** *Some children like to listen to music. Which children listen to music?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

1) **CURIIOUS:** *Some children are curious; they like to learn and ask questions. Which children are curious?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

2) **CREATIVE:** *Some children are creative; they have good imaginations and make good art. Which children are creative?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

3) **MESSY:** *Some children are messy; they have really messy bedrooms or desks at school. Which children are messy?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

4) **CARELESS:** *Some children are careless; they don’t look both ways before crossing the road. Which children are careless?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

5) **NERVOUS:** *Some children are nervous; they feel nervous to meet new children. Which children are nervous?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

6) **FRIENDLY:** *Some children are friendly. They are fun to play with. Which children are friendly?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

7) **SELFISH:** *Some children are selfish. They don’t share. Which children are selfish?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

- 8) **HAPPY:** *Some children feel happy; they feel happy to see their friends. Which children feel happy?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 9) **GUILT:** *Some children feel guilty; they feel guilty for not doing as they are told. Which children feel guilty?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 10) **SAD:** *Some children feel sad; they may feel sad if they lose a toy. Which children feel sad?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 11) **SYMPATHY:** *Some children feel SYMPATHY; they feel sad when their friend is sad. Which children feel sympathy?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 12) **EXCITED:** *Some children feel excited; they may feel excited to see a movie. Which children feel excited?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 13) **SCARED:** *Some children feel scared; they feel scared after having a nightmare. Which children feel scared?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 14) **LOVE:** *Some children feel LOVE; they love their family and friends. Which children feel love?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 15) **EMBARRASSED:** *Some children feel embarrassed; they feel embarrassed after falling in front of their friends. Which children feel embarrassed?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_
- 16) **CALM:** *Some children feel calm and are not easily upset. Which children feel calm?*  
White \_\_\_\_\_ Black \_\_\_\_\_ None \_\_\_\_\_

## APPENDIX P

**Investigator:** Each of these boxes belongs to the child pictured on the front and the third box with the “X” belongs to no-one. I am going to tell you how some children may act and I want you to tell me which child acts that way by placing the card(s) in either the White child’s box, the Black child’s box, both the White and Black child’s boxes, or if one or both children do not act that way you will place the card (s) in the box with the “X”.

- 1) **DIRTY:** *Some children are dirty. They wear dirty clothes or have dirty faces and hands. Which children are dirty?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

- 2) **CLEAN:** *Some children are clean. They wash their face and hands in the morning. Which children are clean?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

- 3) **BAD:** *Some children are bad. They don’t do as their told. Which children are bad?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

- 4) **POLITE:** *Some children are polite. They often say thank you. Which children are polite?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

- 5) **SMART:** *Some children are smart; they do well in school. Which children are smart?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

- 6) **BOSSY:** *Some children are bossy; they tell others what to do. Which children are bossy?*

**White** \_\_\_\_\_      **Black** \_\_\_\_\_      **None** \_\_\_\_\_

## APPENDIX Q

**Water Conservation:** The investigator will place two identical glasses with equal amounts of water in front of the participant. The child will be asked to evaluate the equality of the water content before and after the conservation manipulation.

*Investigator:* In front of you are two identical glasses with equal amounts of water in them. Look at the two glasses; do you agree that there is an equal amount of water in each glass?

Agrees \_\_\_\_\_ Disagrees \_\_\_\_\_

*Investigator:* I am going to take one of the glasses and pour the water into this other glass.

**Note:** Investigator will then pour the contents of one of the glasses into a shorter-wider glass

*Investigator:* Now, do you think that these two glasses (referring to the original glass still containing water and the new glass) have the same amount of water in them or does one have more than the other?

Correct (same amount) \_\_\_\_\_ Incorrect (different amounts) \_\_\_\_\_

**Cognitive Inclusivity:** The investigator will show pictures to the child containing two groups of pictures from separate categories but which belong to the same superordinate category.

- 1) **Vehicles:** Child will be shown a picture containing 2 Trucks and 4 Cars

*Investigator:* How many trucks are there? How many cars are there? Are there more cars or more vehicles?

Correct (vehicles)

Incorrect (cars)

- 2) **Animals:** Child will be shown a picture containing 3 dogs and 6 cows.

*Investigator:* How many cats are there? How many pigs are there? Are there more animals or more cows?

Correct (animals)

Incorrect (cows)

## APPENDIX R

**DATE:** 9/21/2010

**PRINCIPAL INVESTIGATOR:** HODSON, Gordon - Psychology

**FILE:** 10-034 - HODSON

**TYPE:** Ph. D. STUDENT: Kimberly Costello

**SUPERVISOR:** Gordon Hodson

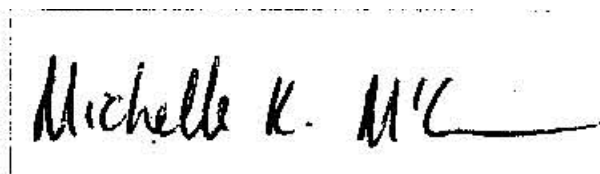
**TITLE:** The Development of Children's Social Attitudes: Part 2

**ETHICS CLEARANCE GRANTED**

**Type of Clearance:** MODIFICATION Expiry Date: 9/30/2011

The Brock University Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri- Council Policy Statement. Clearance granted from **2/4/2011 to 9/30/2011**. The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before **9/30/2011**. Continued clearance is contingent on timely submission of reports. To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page. In addition, throughout your research, you must report promptly to the REB: a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study; b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants; c) New information that may adversely affect the safety of the participants or the conduct of the study; d) Any changes in your source of funding or new funding to a previously unfunded project. We wish you success with your research.

Approved:

A handwritten signature in black ink, reading "Michelle K. McGinn", enclosed in a rectangular box with a dashed border.

Michelle McGinn, Chair

Research Ethics Board (REB)

**APPENDIX S**

## The Development of Social Attitudes

**Principal Investigator:** Kimberly Costello, PhD candidate, Psychology, (905) 688-5550 ext. 5560 [kimberly.costello@brocku.ca](mailto:kimberly.costello@brocku.ca)

**Faculty Supervisor:** Dr. Gordon Hodson, Associate Professor, Psychology, 905 688-5550 ext. 5127 [ghodson@brocku.ca](mailto:ghodson@brocku.ca)

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Dear Parent(s) Or Guardian(s):

We would like permission for yourself and your child to participate in a Brock University research project. Please read this consent form carefully and indicate your permission decision.

**PURPOSE OF STUDY:** As part of the Intergroup Relations Lab at Brock University we are interested in identifying how group representations and social attitudes develop in children. We are also interested in developing humane education programs, with the intention of promoting favorable social attitudes.

**CHILD PARTICIPATION:** For the present study your child will meet with the principal investigator (female PhD student at Brock University) individually to answer a series of questions about their attitudes and feelings toward different social groups and situations. Your child will then be asked to view one of two short educational films. Following the film your child will be asked to answer a few more questions about their social attitudes. The project is expected to take approximately 50 minutes to complete.

**PARENT/GUARDIAN PARTICIPATION:** As the participating child's parent/guardian you will be asked to complete a questionnaire that asks questions about your attitudes toward social groups and situations. Completion of the questionnaire will help us to gain a more complete understanding of the development of children's social attitudes. The questionnaire is expected to take 30 minutes to complete. Upon completion, please seal the completed questionnaire booklet in the envelope provided and return to the researcher.

**BENEFITS/RISKS:** By participating in this study you are entitled to a payment of \$20 and will be entered into a draw for a family-night cinema prize package. In appreciation for your child's participation he/she will be offered a bookmark or pencil and a research certificate upon completion of the study. Permitting your child to participate in this project will contribute to furthering our knowledge of the development of important social attitudes in children and to the development of humane education programs. The project is designed to be an enjoyable experience for children and we do not anticipate any risks associated with participating in this study. Children and parent/guardians will be asked some questions about their feelings toward people of different cultures/ethnicities, but there is no right or wrong answer to any of the questions asked as people naturally differ in their liking of different groups and social situations.

**CONFIDENTIALITY:** All child and parent/guardian information is considered confidential. Names are required for matching parent/guardian-child questionnaires only,

and will be immediately destroyed thereafter. Individual results will not be shared or revealed as we are only interested in average responses. Only the principal investigator and faculty supervisor will have access to the data, and all information will be stored securely. Given the intentions of publishing the results, data will be kept for approximately 5-7 years after which all data will be destroyed.

**PARTICIPATION WITHDRAWAL:** Each child's participation is dependent upon parent/guardian consent, and participating parents/guardians and/or child may decline to participate at any time by indicating this decision to the researcher. Refusal to participate will involve no penalty or loss of benefits to which you are entitled, including financial benefits.

**FEEDBACK AND PUBLICATION:** The results from this study may be used in future journal articles or presentations. Neither parent/guardian nor child names will be identified in that publication; by that point, the researchers themselves will not have access to the names of responders. If you would like to receive a copy of the study results when available, please provide an email address below.

**CONTACT:** If you have any questions, please contact the principal investigator or faculty supervisor. We would like to assure you that this study has been reviewed and received clearance through Brock University's Research Ethics Board (REB#10-034). If you have any concerns about your rights as a research participant contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

**CONSENT:**

- I have read and understand the information concerning this research project
- I acknowledge that all information gathered on this project will be used for research purposes only and will be considered confidential
- I realize that this project has been reviewed by and received ethics clearance through the Office of Research Ethics at Brock University, and that I may contact this office if I have any comments or concerns about my own or my child's involvement in this study.

**CHILD PERMISSION DECISION:**

- Yes - I would like my child to participate in this study
- No - I do not want my child to participate in this study

**PARENT/GUARDIAN PARTICIPATION DECISION:**

- Yes - I would like to participate in this study and will promptly return the completed questionnaire to the principal researcher in the envelope provided.
- No - I do not want to participate in this study

**Signature of Parent or Guardian:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Signature of Researcher:** \_\_\_\_\_

Listed below are a number of emotions and traits. Please indicate how much you think average members of the following groups experience the listed emotions or traits.

<b>Disagree Strongly</b> (1)	(2)	(3)	<b>Neither Disagree or Agree</b>	(5)	(6)	<b>Agree Strongly</b> (7)
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	<b>White People</b>							<b>Black People</b>						
<b>Happiness</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Guilt</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Friendliness</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Fear</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Excitement</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Compassion</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Shame</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Pleasure</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Sadness</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Rage</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Hope</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Embarrassment</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Extraverted</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Critical/</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Dependable</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Anxious</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Openness</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Reserved/ Quiet</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Sympathetic</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Disorganized</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Calm</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Conventional</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7

## APPENDIX U

For each statement, indicate your agreement by circling a number from 1-7

	1	2	3	4	5	6	7
	<b>Strongly Disagree</b>			<b>Neither Disagree Nor Agree</b>			<b>Strongly Agree</b>
1. Some groups of people are just more worthy than others	1	2	3	4	5	6	7
2. We should do what we can to equalize conditions for different groups.	1	2	3	4	5	6	7
3. In getting what your group wants, it is sometimes necessary to use force against other groups	1	2	3	4	5	6	7
4. If certain groups of people stayed in their place, we would have fewer problems	1	2	3	4	5	6	7
5. We would have fewer problems if we treated different groups more equally.	1	2	3	4	5	6	7
6. No one group should dominate in society.	1	2	3	4	5	6	7
7. To get ahead in life, it is sometimes necessary to step on other groups.	1	2	3	4	5	6	7
8. Group equality should be our ideal.	1	2	3	4	5	6	7
9. All groups should be given an equal chance in life.	1	2	3	4	5	6	7
10. We must increase social equality.	1	2	3	4	5	6	7
11. Superior groups should dominate inferior groups.	1	2	3	4	5	6	7
12. It's probably a good thing that certain groups are at the top and other groups are at the bottom.	1	2	3	4	5	6	7
13. We must strive to make incomes more equal.	1	2	3	4	5	6	7
14. Sometimes other groups must be kept in their place.	1	2	3	4	5	6	7
15. It would be good if all groups could be equal.	1	2	3	4	5	6	7
16. Inferior groups should stay in their place.	1	2	3	4	5	6	7

### APPENDIX V

We are interested in learning about different types of parenting strategies. Please indicate the extent to which you agree or disagree with the following statements by circling a number from 1 to 5.

	1	2	3	4	5
<b>Strongly Disagree</b>	<b>Neither Disagree or Agree</b>			<b>Strongly Agree</b>	
1. I am aware of problems or concerns about my child in school.	1	2	3	4	5
2. I explain the consequences of my child's behavior to him/her	1	2	3	4	5
3. I am easy going and relaxed with my child.	1	2	3	4	5
4. I spank when my child is disobedient.	1	2	3	4	5
5. I punish by taking privileges away from my child with little if any explanation.	1	2	3	4	5
6. I state punishments to my child but don't actually do them.	1	2	3	4	5
7. I allow my child to interrupt others.	1	2	3	4	5
8. I allow my child to give input into family rules.	1	2	3	4	5
9. I yell or shout when my child misbehaves.	1	2	3	4	5
10. I scold and criticize to make my child improve.	1	2	3	4	5
11. I appear unsure on how to solve my child's misbehaviour.	1	2	3	4	5