

IDENTIFICATION WITH ALL OF HUMANITY, UNCERTAINTY AND BELIEFS  
TOWARD ANIMALS

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## **Abstract**

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The current study aims to expand on the human-animal relations literature through a social identity lens, using 231 participants recruited from Amazon's Mechanical Turk. Americans consume large amounts of meat, yet many people feel morally conflicted by enjoying meat, while killing animals. These feelings can be tied to one's identity, through identifying as a vegetarian, meat-eater, or animal lover. Humans tend to attach themselves to a social group, act on behalf of that group's norms and values, and use their groups to reduce feelings of uncertainty by adopting group normative attitudes and behaviors. People who identify strongly with all of humanity tend to hold favorable views of outgroups and express empathy towards outgroups, which may or may not extend to non-human animals (identification with all of humanity; IWAH). However, if people identify strongly with all of humanity, do conditions that exacerbate intergroup perceptions lead them to denigrate and hold less empathy for animals? This study explores whether all of humanity can form a salient and coherent identity for people experiencing uncertainty. If so, then the benefits of IWAH (less prejudice and more empathy as IWAH increases) should not extend to non-human animals when people experience uncertainty and look to distinguish the ingroup from a relevant outgroup. Perhaps IWAH captures "global community" rather than a distinct identity and connection with *all* of humanity? This study predicts that IWAH will produce greater

beliefs that animals have human-like qualities (e.g., empathy, personality), particularly when an animal is described in a humanized way; however, this effect will be weakened (or will disappear) in conditions of high uncertainty. Findings did not support the hypotheses; however, results and null findings are discussed in terms of implications for future research and theory development examining IWAH from a self-categorization perspective.

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## Introduction

Many people in rich, industrialized societies experience discomfort over their meat-eating habits, yet most do not adopt plant-based diets. People are morally conflicted by the thought of harming animals, yet also enjoy meat as a desirable staple in their diet. This is known as the “meat paradox,” (Loughnan et. al, 2014), a situation in which people care for animals and do not wish to see them harmed but engage in a diet that requires them to be killed, and usually, to suffer (Herzog, 2010). Humans consume large amounts of meat annually, and the average person consumes around 106 pounds of meat per year (Food and Agriculture Organization of the United Nations, 2013). Yet, people simultaneously care deeply about animals and find animal suffering emotionally disturbing (Allen & Baines, 2002). Some meat eaters feel more comfortable with their decision morally, especially those who endorse domination over non-human animals or hold meat eating close to their self-concept (Rothgerber, 2013, Allen & Baines, 2002).

Vegetarians and vegans avoid this paradox and the associated feelings of discomfort by choosing to not eat meat, as their moral concern for the raising and slaughtering of animals is a motivation for avoiding meat consumption (Amato & Partridge, 1989; Ruby, 2012). The rise of veganism has been prominent over the last decade, with their population rising from nearly four million in 2014, to 19.6 million in 2017 (Vegan Society, 2021). This increase could be due to more vegan alternatives to meat and dairy coming out, or concerns for people’s health and the environment (Leung et. al, 2018). One barrier to adopting a vegan or vegetarian diet is the cultural significance surrounding meat and animal products (Dhont & Hodson, 2014; Dhont, Hodson, & Leite,

2016; MacInnis & Hodson, 2017). For example, meat tends to be associated with formal meals and meat eating as a norm. Piazza (2015) describes the “4Ns” as to why meat-eating is so widespread in American society: natural, normal, necessary, and nice (i.e., tastes good). The endorsement of these 4Ns is associated with less moral concern for animals, less capacity for animal’s agency and experience, and less guilt for consuming animal products. Eating habits and food choices are associated with norms, which are attached to one’s identity. Some people hold their vegetarian identities strongly as it reflects their moral beliefs to protect animals. Others hold their meat-eating identities strong, as it holds cultural significance and nostalgia. This diet-identity goes beyond a representation of the individual self. Because eating is tied to traditions, norms, and even group membership, diet can form a social identity.

Consumption of animals also negatively affects the environment. Recent studies have shown that livestock production is one of the driving forces for climate change, as it degrades air quality and is the single-largest use of land (Eshel et. al, 2014). Raising animals for food produces more greenhouse gasses, through methane and nitrous oxide, than all of the carbon dioxide of automobiles, boats, planes and trains in the world combined (Steinfeld, 2006). According to the documentary *Cowspiracy*, there are about 1.5 billion cows raised as livestock that consume 45 billion gallons of water and 135 pounds of food every day. The main advice that experts give is that humans need to eat less meat to curb climate change and keep resources available. Although this is not easy for everyone, especially in food deserts and lower income areas, reducing the consumption of meat can make a difference. Even things such as “meatless Mondays” or

choosing a “Beyond burger” when going out to eat can make a change. Choosing a plant-based diet, if you have the means to do so, can help preserve the environment and our planet.

Willis (2014) examines food justice and sustainability and how human’s detachment from their food is central to how they treat each other. The majority of people do not have to look their food in the eyes before they slaughter a cow; rather they just see a cheeseburger on their plate. This detachment makes it easier for humans to consume their food without any guilt. The practices people use to endorse human superiority over non-human animals (e.g., justifying the exploitation of non-human animals for food) endorse a legitimacy of domination in our society. This dominance positions humans as higher in importance than non-human animals. People learn to dehumanize human outgroups by first dehumanizing non-human animals. Humans tend to use language intended for animals (e.g., “cattle”) to justify inhumane treatment of other people, such as genocide. Words such as vermin, rats, and pigs are used to strip away human qualities and individuality, to make others seem less morally worthy. Examples of this can be seen in how nazis represented Jewish people during the Holocaust, Bosnians in the Balkan wars, and Tutsis’ representation of Tutsis in Rwanda, where people were dehumanized during the violence and beforehand through ideas that likened the victims to vermin (Loughnan & Haslam, 2014). This helps humans rationalize the mistreatment of others, if they are seen as less human and more animal-like. In sum, humans use animalistic descriptions and comparison to justify inhumane treatment of other humans.

The way that humans view animals appear to be related to human intergroup relations (Dhont et. al, 2019). Humans dehumanize other humans by ascribing them “animalistic” qualities (Haslam, 2006). This involves denying others (typically) certain kinds of intentional states, such as secondary emotions. Some extreme and horrific cases of dehumanization are explicit (e.g., genocide), yet dehumanizing can be more subtle, and as simple as when individuals or groups are assigned lesser degrees of humanness. This occurs most commonly when people see others as psychologically distant and below them (Loughnan & Haslam, 2014). For example, people are called “dirty rats” or “fat as pigs” - rhetoric which places the targets far from humanity in a place that justifies treating them worse than majority ingroup members.

The current work aims to expand the human-animal relations literature and incorporate social identity theory (Tajfel & Turner, 1979; Hogg & Abrams, 1988) with the identification with all of humanity work (McFarland, Hackett, Katarzyna, Miller, Malsch & Reysen, 2019). Social identity processes involve categorizing oneself as a member of a certain group, which tells people to know how to think, feel, act and behave. One’s self-concept is in part based on membership in social groups, particularly those with which they have strong ties (e.g., religions, sports teams, nationality). Group identification helps to satisfy self-esteem, affiliative, and epistemic needs (see Gaffney & Hogg, 2022). Uncertainty-identity theory posits that because people gain information about the self through group identification, they often seek to join and strengthen identification in social groups when they experience uncertainty (see Hogg, 2021). As a result, social identity is central to attitudes and behaviors and drives both intra and

intergroup behavior. People perceive themselves as group members and act on behalf of their group while adopting the group's norms, beliefs, and values. Because groups exist to the extent that ingroup members share common features that make them distinct from relative outgroups, people seek to view their own group as both different and better than relevant outgroups. When category memberships (ingroup and outgroup) become salient, people self-categorize into their ingroup (Turner et al., 1987). Intergroup bias involves positively evaluating one's ingroup relative to an outgroup, and often negatively evaluating the outgroup (Tajfel & Turner, 1979). All of humanity can be seen as the highest level of possible self-categorization, and under certain circumstances people do identify with the global human community (McFarland, Webb, & Brown, 2012). People who strongly identify with all of humanity tend to feel closeness to people all over the world and hold positive attitudes towards outgroups. Identification with all of humanity (IWAH) predicts positive values of universalism, support for human rights, and favorable attitudes towards outgroups (McFarland, 2019). Because IWAH predicts favorable attitudes toward outgroups, researchers could expect this to extend to animals under certain conditions. If human-animal relationships are structured similarly to human-human intergroup relations, then factors that are protective against dehumanization and intergroup bias might, to some extent, extend to human-animal relationships. The research question this proposed study will aim to address is "Do the predictions of identification with all of humanity extend to animals under conditions of uncertainty, as uncertainty is a motivator for social identification? Or is it the case that non-human

animals are not a close enough comparison group, therefore they cannot be used in the self-categorization process?”

## Literature Review

### Human-animal Relations

People often choose to not view animals as companion creatures while consuming meat, to avoid dissonance (Loughnan et. al, 2014; Amodio & Harmon-Jones, 2007).

People experience emotional discomfort when they engage in behaviors inconsistent with their attitudes (e.g., eating meat while simultaneously caring for animals). People give names to their companion dogs and cats, ascribe them personalities, and seek to protect them. At the same time, animals used as food are stripped of cognizance and emotions. This is consistent with the “meat paradox” in which people are morally conflicted by the thought of eating animals yet enjoy meat in their diet (Loughnan et. al, 2014). To resolve this moral conflict, people either choose to reject meat consumption (e.g., eat vegetarian), which brings one’s behavior into alignment with one’s moral ideals, or bring one’s behavior and attitudes into alignment through psychological maneuvers, such as rationalization. Rationalization involves providing justification for one’s behavior under criticism to maintain a positive image of oneself. People may rationalize their meat consumption by seeking out arguments that prove their point or argue that is still the norm in most countries. The actual experience of dissonance or the discomfort that people feel surrounding eating meat likely depends on how meat eating is represented in the self-concept. Culturally, it is important for many groups to eat some types of meat. In addition, there are several identities surrounding meat consumption and plant-based diets (e.g., veganism, vegetarianism, carnivore, Red Blooded Meat Eater). One’s upbringing,



cultural values, and close social groups (e.g., friends and family) will likely influence how strongly they hold their diet identity to their self-concept.

Psychological factors, such as norms, motivations, attitudes, and beliefs regarding peoples' relations with and behaviors towards animals, are important to examine from a social identity lens (Dhont et. al, 2019). Social identity focuses on how individuals perceive and understand themselves, how they define their identity, and how their social relationships enhance their social identity (Abrams, 2015; Abrams & Hogg, 1990). Research on social identity theory has previously focused on dynamics between human groups, yet humans also build meaningful bonds with animals. Social interactions with animals give rise to social identification with animals, including a positive psychological connection and commitment to animals (Amiot & Bastian, 2017). Additionally, identifying with groups either directly involved in actions opposing or supporting the exploitation of animals can be a large part of one's social identity. Those who intentionally choose to avoid consumption of animal products (e.g., vegetarians and vegans) often consider their diet identity a large part of their self-concepts and how they represent themselves (Rosenfeld & Burrow, 2017). Alternatively, people whose diet consists heavily of meat are more in favor of animal exploitation, and show this through hunting, being vocal about meat eating, or making fun of vegetarians/vegans (Piazza et. al, 2015, Rothgerber, 2013). One's diet identity is often an important aspect of their self-concept and can be shown in what groups they belong to, how they treat animals, and other human beings. These complex feelings of valuing and exploiting animals need to be

further explored from a social identity perspective, as human-animal relationships are a key part of human intergroup relations (Dhont et. al, 2019).

### **Dehumanization**

The mass consumption of animal products, through harming and butchering animals, involves viewing animals as sub-human (Haslam, 2006). By doing this, people strip animals of their ability to hold emotions, have personalities and experience pain. Reducing animals' capacity to suffer can facilitate eating them, as the way people perceive animals is tied to what people choose to consume. This process is similar to "dehumanization" and involves seeing animals as less than human and stripping away qualities that humans perceive as uniquely human (e.g., self-awareness, honesty, integrity). This is problematic as giving animals inferior status makes it easier for humans to abuse and mistreat them, and further justifies animal exploitation. Also, from an environmental standpoint, this allows the justification of behaviors (meat eating, meat production) that contribute to climate change and destruction of resources.

As Dhont et. al (2014) discuss, if humans view animals as lacking self-awareness, it reduces the guilt associated with hurting and eating them. This perpetuates a societal norm that it is morally okay to consume meat, as animals cannot think for themselves and do not possess consciousness. The interspecies model of prejudice (Costello & Hodson, 2010) proposes that believing humans are different from and superior to animals can lead to thinking of human outgroups as more animal-like. In turn, outgroup dehumanization predicts bias towards that human group, through prejudice and discrimination. Essentially, thinking of animals as less morally valuable than humans can lead to

prejudice toward marginalized human outgroups. People use terms intended for animals to oppress other human outgroups, such as “fat as a cow” and “dirty rat.” The rhetoric of using animals to dehumanize others is built into the way we speak. This not only allows humans to dehumanize other humans, but also this language may contribute to seeing animals as objects only worthy of being tools for human use.

Dehumanization towards human outgroups leads to prejudice against other humans (Haslam, 2014). Viewing non-human animals as subhuman should lead to stripping away human-like qualities (e.g., personality, capacity to feel pain) in animals (Costello & Gordon, 2010). Although “dehumanization” is an odd term to describe perceptions of animals, human domination over other animals could lead to a cruel form of oppression that justifies tortuous treatment and ultimately has negative social and environmental impacts. Here I seek to explore if psychological factors that buffer human prejudice are transferable to human-animal relationships.

### **Identification with all of Humanity**

Global human identification is an aspect of identification with all of humanity (IWAH), which proposes that some people can see themselves as a wider human identity that encompasses all humans (McFarland, Hackett, Katarzyna, Miller, Malsch & Reysen, 2019). When individuals identify with a relevant group, they perceive themselves as components of a higher order social unit. The social identity perspective defines social identity through self and social categorization - the belonging and attachment that occurs when people cognitively and emotionally represent the self as a member of a social group (e.g., Abrams & Hogg, 1988; Tajfel & Turner, 1979; Turner et al., 1987). When people

categorize themselves and others, they tend to show ingroup favoritism and although they may show intersubjectivity with ingroup members (see Hogg & Cooper, 2007), this is typically not extended to outgroup members. IWAH posits that all of humanity might be the highest level of possible self-categorization, and under certain circumstances people can identify with the global human community (McFarland, Webb, & Brown, 2012). However, according to the social identity theory perspective, there cannot be an identity without a clear prototype. All of humanity may be too nebulous for there to be a clear prototype, thus this identity may not be useful in fulfilling epistemic needs. Once people identify with a specific group, they engage in behavior that advances and benefits that group (Cohrs et. al, 2007). People who strongly identify themselves with all of humanity feel connected to people all over the world and perceive them as members of their own group. For the group of all humans, for those with strong IWAH, all members of their ingroup “humanity” become relevant and they believe all humans deserve equal treatment. This connection to a global community is not based on a specific location, but feelings of closeness to humanity in general (McFarland et. al, 2019). It may be the case that IWAH is actually a “sense of global community,” rather than a specific identity, which would require a coherent cognitive representation (i.e., a prototype). IWAH positively predicts valuing the lives of all humans equally (McFarland et. al, 2019). People high in IWAH tend to hold positive values for universalism, or loyalty to and concern for others despite national allegiances. IWAH predicts commitment to human rights and concern for the global needs of humanity (e.g., world hunger, climate change, AIDS; McFarland, 2017). Those who strongly identify with all of humanity also show

strong prosocial values, such as intergroup empathy and intergroup helping behaviors. Intergroup empathy involves members of one social group identifying with the emotions or perspectives of another social group (Hogg & Levine, 2010) and includes statements such as: “I am able to empathize with people from other countries.” Intergroup empathy could expand to people in different countries around the world, such as empathizing with another country during war. Empathy helps members of groups with differing worldviews and histories to understand each other. Empathy helps to improve intergroup relations by reducing prejudice, stereotyping and discrimination (Hogg & Levine, 2010). Intergroup helping is defined as giving, seeking and receiving help across group boundaries (Keltner & Kogan, 2014) “If I had the opportunity, I would help others who are in need regardless of their nationality” (Reysen & Katzarska-Miller, 2013, p. 862). People typically help ingroup members more frequently than outgroup members, especially when outgroup members are perceived negatively. This is due to prejudices, and feelings of closeness to one’s ingroup. Making a common identity salient between the ingroup and outgroup members, (e.g., “we are all humans”), can help to reduce the reluctance to help outgroup members (Nadler, 2016).

Furthermore, people who strongly identify with all of humanity have high support for international human rights. Human rights are basic rights protecting fundamental freedoms and human dignity that people are entitled to, despite nationality, gender, ethnicity or language (Snyder, 2012). This is shown through support for charities, global poverty eradication, and commitment to a sustainable environment (Reysen & Hackett, 2016). IWAH also predicts favorable attitudes towards outgroups, such as immigrants or

people of other nationalities. This ties into the other traits of IWAH, as care for outgroups positively predicts work to reduce global suffering and improve the environment in order for all of humanity to have a sustainable future. People who are high in IWAH tend to have greater global knowledge and work to acquire that knowledge, to encourage global mindedness than those lower in IWAH (McFarland et. al, 2019).

The original IWAH scale has nine three-part items that reflect identification on each of three levels of humanity, an individual's community, their nation, and people all over the world (McFarland et. al, 2019). Questions include "How close do you feel to each of the following groups: "People in my community", "Americans", and "All humans everywhere"? and "How much do you want to be: a responsible citizen of my community, a responsible American citizen, and a responsible citizen of the world?" The average across all items is referred to as the degree of identification with all of humanity. McFarland et al. (2019) found that when people score high on identifying with all of humanity, and think about referent outgroups (e.g., immigrants), they will exhibit less prejudice and less dehumanization towards outgroups.

### **Social Identity Theory and Self-Categorization**

Social identity is defined as "the individual's knowledge that he/she belongs to certain social groups together with some emotional and value significance to him/her of the group membership" (Tajfel, 1972, p. 31). The self-concept comprises both the personal self, which is idiosyncratic to the individual, and the collective (social) self, which is derived from membership in social groups (Gaffney & Hogg, 2022). Most people belong to multiple social groups and social identity becomes salient from social

and environmental cues that remind a person of their categorization in a specific group. For example, a student thinks about themselves as a college student, a vegetarian thinks about their own diet in comparison to a meat-eater's diet. Social identities tell people who they are, the attributes that they hold, and how they relate to others based on those categorizations. Categorization of self into a social category and the understanding of self that an individual receives from that categorization occurs through processes of comparison. At a basic level, a social category only exists in relation to another social category - thus people know who their group is by not only the things that they have in common with other group members, but also what makes them different from relevant outgroups (Gaffney & Hogg, 2022; in press; Hogg, 2018). One goal of the current study is to see if all of humanity can constitute a social category. Under some circumstances, IWAH may positively predict connectivity not only with other humans, but perhaps animals. However, without a clear cognitive representation of the group (a prototype which clearly defines all of humanity in relation to a relevant outgroup), all of humanity might not be a relevant identity in many contexts and might not satisfy needs such as uncertainty reduction that more clarified identities can address.

One motivator to join groups is uncertainty, specifically related to the self. Conceptual self-uncertainty is anything that makes an individual question their knowledge of self and who they are. Some people might feel uncertain about their ability to succeed in school, some might feel uncertain about a romantic relationship, some might feel uncertain if they fit in at school, some might feel uncertain as to whether their nation can withstand war (see Hogg & Mahajan, 2018). Uncertainties revolving around

the self can create a negative drive state, which people are motivated to reduce.

Uncertainty-identity theory posits that because people gain information about the self through group identification, that people seek to join and strengthen identification in social groups when they experience uncertainty (see Choi & Hogg, 2021). We cognitively represent human groups as prototypes, which “embody all and any attributes that define the category and distinguish it from other categories in a specific context” (Hogg, 2007, p. 79). Prototypes are the most normative features of a group that describe members’ perceptions, beliefs, attitudes, values, feelings, and behaviors. We look to prototypes to tell us information about the group and how we should behave as a member of that group. Thus, depersonalization allows someone to see the self and others as representations of the prototype, which reduces uncertainty. This tells people who they are and who others are. Group prototypes tell us how to act, feel and behave within our group. We do this in a similar way with our own group and assign attributes and norms to yourself to fit into the group. In this way, group identification is effective in reducing our uncertainty, as our group tells us how to think, feel, act and behave (Hogg, 2007).

Some groups are particularly effective at reducing uncertainty. When groups are close knit and have clear norms of the group’s identity, they are seen as being high in entitativity (see Hogg et al., 2007). People typically want to be a part of groups that are high in entitativity, as they appear as a cohesive structured entity, with clear norms of how to behave in the group (Hogg, 2018). Groups with fuzzy, unclear identities are not very effective at reducing uncertainty because they do not tell people how to think, act, feel and behave (Hogg & Mahajan, 2018). Can all of humanity have a clear prototype or



is it too broad of a construct, thus it may not be effective in reducing uncertainty. Can humans perceive “humanity” as an ingroup? Who is the outgroup? Is “humanity” entitative enough to form a clear prototype so that identification with all of humanity is possible? Humanity might not be a highly salient identity and thus IWAH may capture more “a sense of global community” grounded in people’s “global attitudes” and other related constructs such as conservatism and empathy. Otherwise, humans may look to find a competing outgroup so that they may view the ingroup (humans) as a cohesive unit and lead thus degenerate animals. The proposed study intends to explore identifying with all of humanity from a social identity perspective, and see if this identity is situational, rather than constantly salient. In addition, I use the context of animal consumption and the ethical treatment of animals to explore how identity and global citizenry contribute to the “dehumanization” of animals.

### **Overview of the Current Research**

There are two competing versions of IWAH: one that conceptualizes humanity as a distinct identity vs. one that recognizes that IWAH is a sense of global community and may be beneficial for promoting several “global” and liberal ideals. The latter is operationally different from the former. An identity is conceptualized as the cognitive representation of a group (see Gaffney & Hogg, 2022) - if humanity cannot be conceptualized as a group with a clear prototype, it cannot be an identity. As a result, if IWAH is a distinct identity, then people primed with self-uncertainty should reject animals as an outgroup (as seen on measures such as low empathy and low human-like qualities). However, if IWAH is a sense of global community rather than an “identity,”

under conditions of high uncertainty, then increasing levels of IWAH is likely related to increasing levels of empathy for animals. Thus, IWAH would then be a normative representation of some other identity (e.g., “liberal,” “vegan”). In such instances, “humanizing” animals typically used for food consumption may help to improve the way that people view animals, particularly as IWAH increases. Given this information, the current study hypothesizes that:

***Hypothesis 1***

Under the condition of “humanizing” an animal (giving a cow a name and pronouns), people will be more likely to believe animals can possess human-like qualities than under the condition of “dehumanizing” an animal (giving a cow a number and no pronouns).

***Hypothesis 2***

IWAH will positively predict beliefs that animals can possess human-like qualities, particularly in the humanization condition; however, this effect will be weakened (or will disappear) in conditions of high uncertainty. That is, under high uncertainty, people will express less or no beliefs that animals can possess human-like qualities in the humanized condition when high in IWAH than those people who are low in uncertainty.

To test these hypotheses, I primed participants with uncertainty (which should motivate them to identify with a highly entitative group), then measured participants’ level of IWAH (McFarland et al., 2019), randomly assigned participants to a condition that either explicitly “humanizes” or “dehumanizes” a cow (by giving a name and

pronouns vs. not), and then measure how strongly they believe animals can possess human-like qualities (i.e., personality, empathy, compassion).

## **Methods**

### **Participants and Design**

#### ***Sample***

A sample of Americans over the age of 18 ( $N = 359$ ) was recruited from Amazon's Mechanical Turk, an online program used for survey research. This method allowed for a broad sample that could have greater range than available on a college campus (IRB Approval # 22-001). After filtering out participants for exclusionary criteria and missing data, we ended up with a total sample size of 231. We excluded 64 participants who did not fit our diet criteria, as we only wanted to examine meat eaters. Three participants were excluded because they completed the survey in less than two minutes, which is an inappropriate time frame. Table 1 shows participant demographics.

#### ***Survey***

Qualtrics, an online survey platform and experimental design website, was used to distribute the survey and store the data once collected.

#### ***Design***

A 2 (uncertainty: high vs. low uncertainty) X 2 (cow condition: humanized vs. dehumanized cow) X identification with all of humanity (measured predictor variable) between-subjects regression design used random assignment to all conditions to examine the hypotheses. The primary dependent variables are beliefs that animals can hold human-like qualities, how much participants' feel humans are above animals, and a measure of uncertainty (as a manipulation check).

## **Procedure**

### ***Informed consent***

Participants were provided with informed consent which stated that upon providing their consent, they will take part in a study and answer questions about themselves, then complete a memory test. This memory test was a deception, to examine participants' beliefs regarding animals after viewing the humanized or dehumanized condition. After participants completed the study, they were debriefed on the true nature of the study and asked to re-consent. Following this, participants entered a unique key to receive compensation of 0.75 cents through Cloud Research.

## **Measures**

### ***Uncertainty Prime***

Participants were randomly assigned to either a high or low uncertainty condition, to make participants feel either worried or confident. An example item for low uncertainty includes, "There are several things that likely make you feel confident about who you are, your future, and where you are going in life. Please take a moment to consider what makes you feel confident. Now, in one or two sentences, please use the boxes below to list three things that make you feel confident about yourself and your future." (Gaffney et al., 2014; Hogg et al., 2007).

### ***Identification With All of Humanity (IWAH)***

The IWAH scale, adapted from McFarland et al. (2019) is a 9 item 7-point Likert scale ( $\alpha = .92$ ) that reflects identification on levels of an individual's community, one's nation and people all over the world. Example items include, "I identify with (that is, feel

a part of, feel love toward, have concern for) all humans everywhere” and “I feel close to people all over the world” (McFarland, Hackett, Katarzyna, Miller, Malsch & Reysen, 2019).

### ***IWAH Entitativity***

Participants responded to a 4-item 7-point Likert scale examining how entitative they view all of humanity. Example items include, “There are strong ties among all of humanity” and “All of humanity is a cohesive group” (Hogg et al., 2007; McFarland et al., 2019). This measure was not used in the current thesis.

### ***American Identification***

This is an 8-item 7-point Likert scale assessing how strongly participants identify with the American identity, by asking how they view themselves being an American. Example items include, “I care (feel upset, want to help) when bad things happen to Americans” and “I often use the word ‘we’ when referring to Americans” (adapted from McFarland et al., 2019). This measure was not used in the current thesis.

### ***Human Qualities***

Participants responded to 3 sliding scales assessing how much participants believe humans, Americans, and different groups of animals can possess consciousness, empathy/ benevolence, and personality/ temperaments. An example item includes, “On a scale from 0-100, to what degree do you feel the following groups of people and animals possess consciousness?” (Adapted from Kteily et al., 2015). The final measurement was difference scores (e.g., Humans - Farm animals), thus larger absolute values will indicate that participants view humans as very distant from animals in these qualities. We created

a composite variable for Humans - Farm animals ( $\alpha = .81$ ) containing all three sliding scales (consciousness, empathy, and personality).

### ***Human Domination Scale***

Participants responded to a 5-item 7-point Likert scale ( $\alpha = .82$ ) assessing how much they feel humans are equal to or above animals. Example items include, “Animals have a lower status than humans” and “We should strive for more equality between humans and animals” (adapted from “Human supremacy beliefs scale;” Dhont & Hodson, 2014). Appropriate items were reverse coded.

### ***Uncertainty***

Participants responded to a 5-item 7-point Likert scale ( $\alpha = .89$ ) assessing how much self-uncertainty, worry, and concern they feel about their future. Example items include “How much worry do you feel for yourself and your future?” and “At this very moment, how uncertain do you feel about yourself?” (Adapted from Rast et al., 2012).

### ***Conservatism***

A three-item 7-point Likert scale ( $\alpha = .95$ ) from 1 (*Very Liberal*) to 7 (*Very Conservative*) asked participants “How would you describe your” ... “general political views”, “political views on social issues”, and “political views on fiscal (monetary) issues”.

### ***Demographics***

I collected the following demographic information: age, race/ethnicity, gender, diet identity, political party, and political orientation. See Table 1 for participant demographics.

**Tables****Table 1***Participant demographics in Study 1*

	<i>N</i>	%
<b>Age</b>		
18-24 years old	9	3.9
25-34 years old	63	27.3
35-44 years old	81	35.1
45-54 years old	38	16.5
55-64 years old	26	11.3
65+ years old	14	6.1
<b>Gender</b>		
Female	128	55.4
Male	99	42.9
Prefer not to say	4	1.7
<b>Race/Ethnicity</b>		
White	179	77.5
Black/African American	18	7.8
American Indian/Alaska Native	5	2.2
Asian American or Pacific Islander	11	4.8
Latinx/o/a	9	3.9
Middle Eastern or North African	1	.4
South Asian	1	.4
Multiracial	4	1.7
Prefer not to say	3	1.3



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	<i>N</i>	%
<hr/>		
Diet Identity		
Meat eater	231	100
Political Identification		
Republican	57	24.7
Democrat	107	46.3
Independent	58	25.1
Other	4	1.7
No preference	5	2.2

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**Table 2**

*Study 1 reliabilities, means, standard deviations, and intercorrelations for main study variables*

Variable	$\alpha$	$M(SD)$	1	2	3	4	5	6
1. Cow IV	-	-	-	-	-	-	-	-
2. Uncertainty IV	-	-	.099	-	-	-	-	-
3. IWAH	.92	4.98(1.19)	-.020	-.011	-	-	-	-
4. Human Qualities	.81	-23.40(25.38)	-.022	-.008	.091	-	-	-
5. Human Domination	.82	4.12(.77)	.032	-.115	.024	-.066	-	-
6. Uncertainty DV	.89	4.28(1.32)	-.013	.310**	-.054	.070	.095	-
7. Conservatism	.95	3.66(1.74)	.097	-.041	-.114	-.173**	.038	-.029

*Note.* \*\* $p < .01$ .

## Results

### Data Screening

An initial sample of 359 Mechanical Turk participants consented to participate in the online Qualtrics survey. Following their completion of the survey, the participants were debriefed to the true nature of the study and asked to re-consent to their data being used in the study. Completion of the survey and indication of re-consent resulted in an overall sample of 231 meat eaters, after filtering out for exclusionary criteria.

### *Manipulation checks*

An independent sample t-test was conducted to assess differences in measured self-uncertainty between the primed high and low uncertainty conditions. Results indicated that the uncertainty prime was effective,  $t(229) = -4.93$ ,  $p < .001$ ,  $95\%CI [-1.14, -.49]$ . Participants in the high uncertainty condition ( $M = 4.68$ ,  $SD = 1.25$ ) reported more self-uncertainty than participants in the low uncertainty condition ( $M = 3.86$ ,  $SD = 1.27$ ).

We did not have proper manipulation checks for the cow manipulation (humanized or dehumanized).

### Data Assumptions

#### *Human Qualities Scale*

Visual inspection for the histogram for the human qualities sliding scale measure indicates that the measure was negatively skewed. The skewness of the human qualities measure was found to be  $-.68$  ( $SE = .16$ ), indicating that the distribution was negatively, or

left-skewed (See Figure 1). However, given the robustness of regression procedures, we chose to leave the variable untransformed.

### ***Uncertainty***

Visual inspection for the histogram for the uncertainty measure indicates that the assumption of normality was met (See Figure 2). The skewness of the uncertainty measure was found to be  $-.03$  ( $SE = .16$ ); however, the distribution was reasonably normal for the current procedures.

### ***Identification with All of Humanity***

Visual inspection for the histogram for the IWAH measure indicates that the measure was slightly negatively skewed. The skewness of the IWAH measure was found to be  $-.85$  ( $SE = .16$ ), indicating that the distribution was negatively, or left skewed (See Figure 3). However, given the robustness of regression procedures, we chose to leave the variable untransformed.

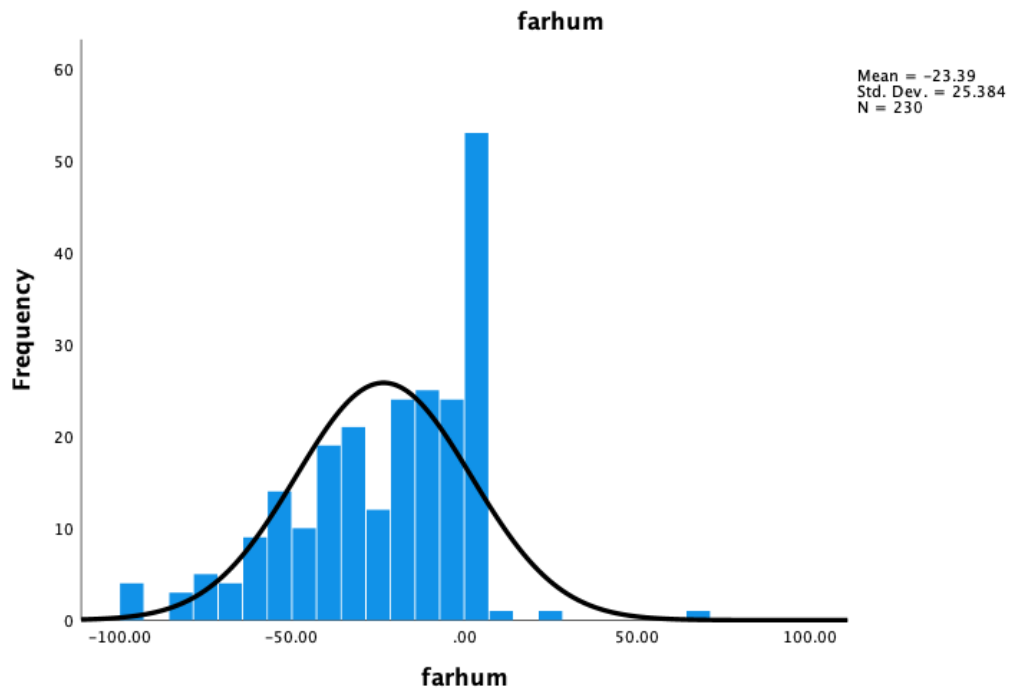
### ***Conservatism***

Visual inspection for the histogram for the conservatism measure indicates that the assumption of normality was met (See Figure 4). The skewness of the conservatism measure was found to be  $.05$  ( $SE = .16$ ); however, the distribution was reasonably normal for the current procedures.

**Figures**

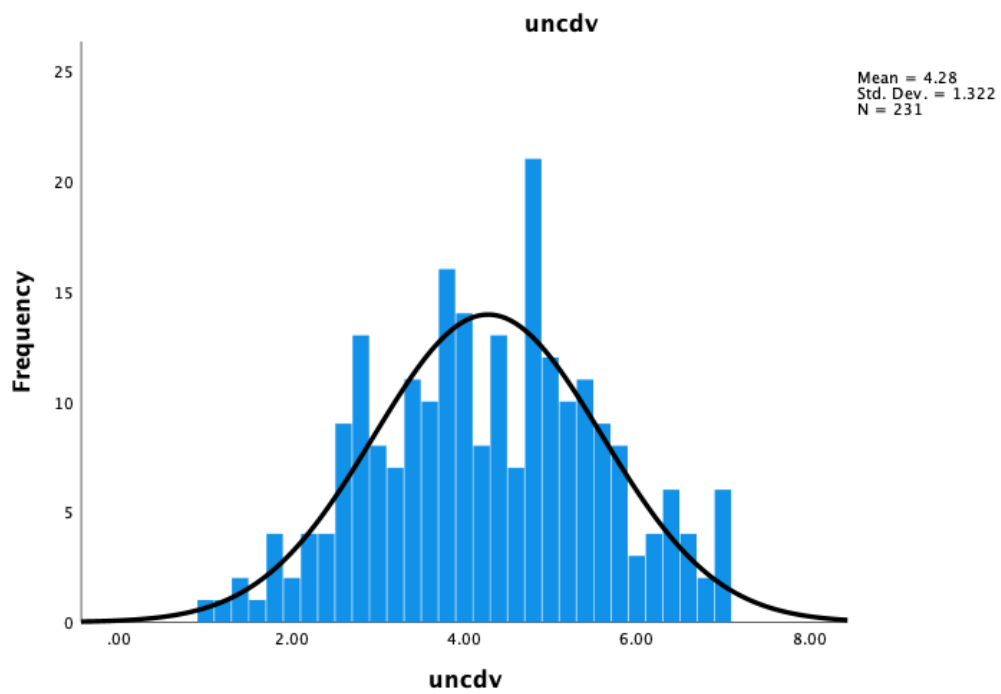
**Figure 1**

**Histogram of Human Qualities**



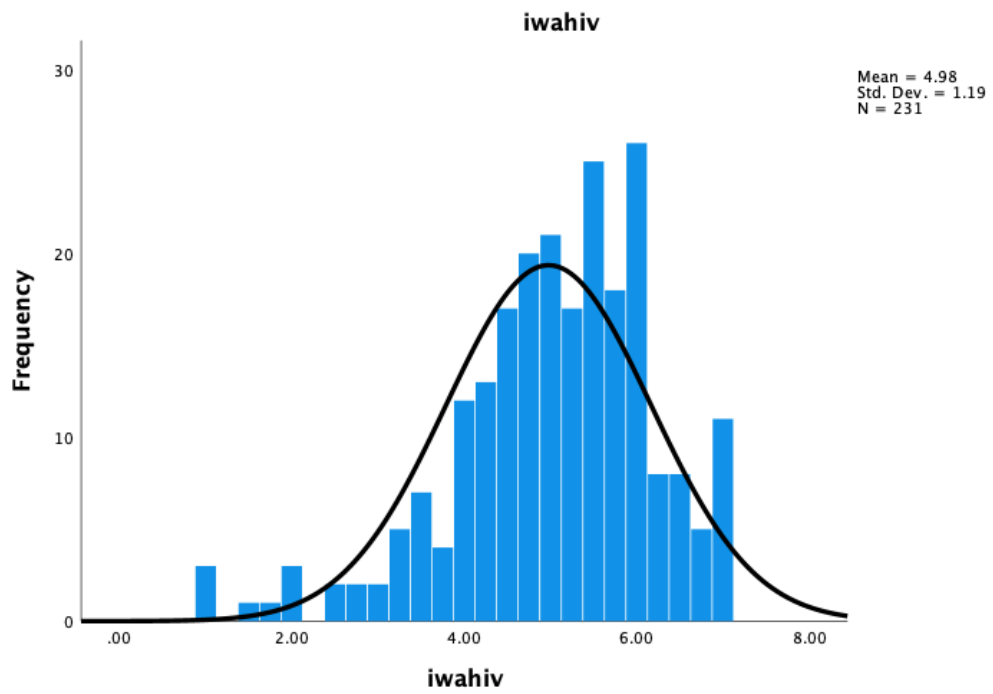
**Figure 2**

**Histogram of Uncertainty**



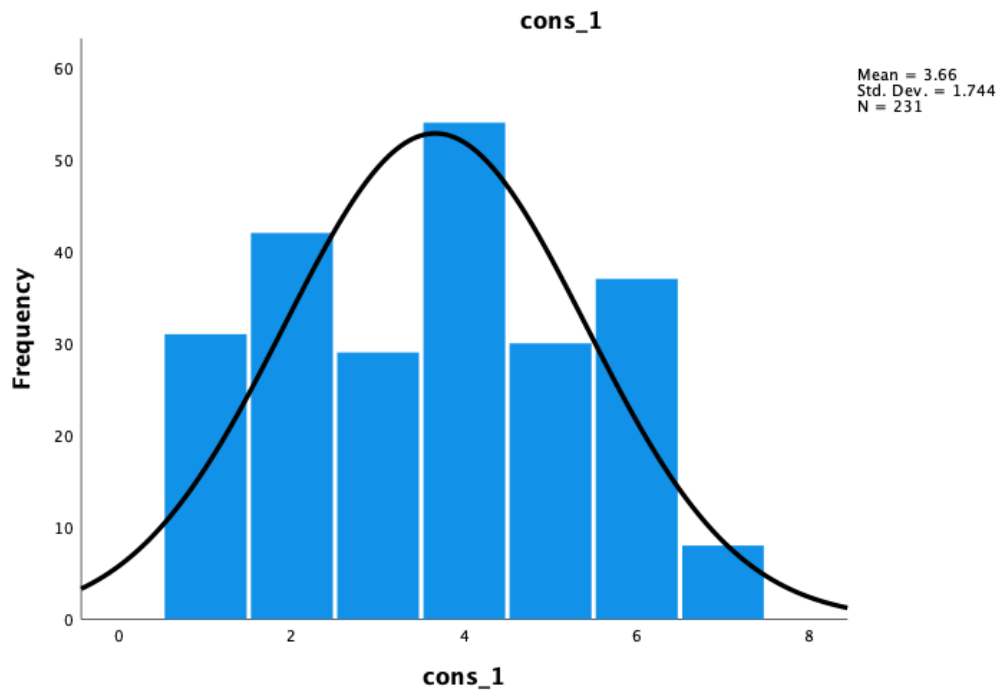
**Figure 3**

**Histogram of Identification with all of Humanity**



**Figure 4**

**Histogram of Conservatism**





### Primary Hypothesis

A three-way moderated regression was conducted using Hayes (2013) Model 3 with uncertainty moderating the relationship between IWAH, the cow condition and predicting levels of human qualities (first analysis) and human domination (second analysis).

For human qualities, the overall model was not significant,  $R^2 = 0.06$ ,  $F(8, 221) = 1.16$ ,  $p = .12$ . None of the main effects or interactions were significant ( $ps > .30$ ).

Strength of identification with all of humanity did not significantly predict beliefs that animals can hold human-like qualities, differently under conditions of uncertainty, depending on the cow condition. Specifically, the three way interaction was not significant thus we failed to support hypothesis 2 ( $b = -0.63$ ,  $t(8, 221) = -0.11$ ,  $p = .91$ ,  $95\%CI [-27.90, 24.79]$ ). Type of cow condition did not significantly predict beliefs that animals can hold human-like qualities for either the humanized or dehumanized condition ( $b = -1.55$ ,  $t(8, 221) = -0.12$ ,  $p = .91$ ,  $95\%CI [-11.95, 10.69]$ ), failing to support hypothesis 1.

A three-way moderated regression using Hayes (2013) Model 3 found that strength of identification with all of humanity did not significantly predict beliefs that humans are above animals, under conditions of uncertainty, depending on the cow condition ( $b = 0.40$ ,  $t(8, 221) = 0.98$ ,  $p = .33$ ,  $95\%CI [-0.41, 1.21]$ ). Type of cow condition did not significantly predict beliefs that humans are above animals for either the humanized or dehumanized condition ( $b = .23$ ,  $t(8, 221) = 1.31$ ,  $p = .19$ ,  $95\%CI [-0.12, 0.58]$ ).

Additionally, we decided to control for conservatism, as some work has suggested that it is related to IWAH (McFarland et al., 2019) and could potentially relate to human-animal relationships. Conservatism as a covariate did negatively predict beliefs of animals having human-like qualities ( $b = -2.41$ ,  $t(8, 221) = -2.49$ ,  $p = .014$ ,  $95\%CI [-4.32, -.50]$ ), but controlling for it did not improve our overall model. See Table 2 for the correlations amongst all items.

### Discussion

I originally expected to find a relationship between identifying with all of humanity (IWAH) and believing that animals can hold human-like qualities, particularly when exposed to an animal framed with a name and pronouns. The predictions of IWAH include empathy towards outgroups and concern for global suffering, which I hypothesized would extend to animals under certain conditions, but not others. High uncertainty should heighten group identification when the group has clear norms and boundaries (Hogg, 2021). However, since all of humanity might be too broad of an identity to conceptually grasp on to as a group membership, under conditions of high uncertainty (which should motivate people to identify with a highly entitative group) the positive predictions of IWAH might not hold true (McFarland et al., 2019). When people feel uncertain, they should look to groups to inform them how to think, feel, act and behave. However, all of humanity may not be a clear enough group for people to and as a result the relationship between the two variables might not exist or might be moderated by another factor.

The results of the study did not support the hypothesized moderated regression model. I did not find a relationship between IWAH and beliefs towards animals, under conditions of uncertainty. Because of the null findings, it is impossible to fully understand this relationship. Given the self-categorization hypothesis, that under uncertainty, “humanity” will not comprise a group that offers uncertainty reducing components, perhaps it is unreasonable to assume that this would have been picked up in the current design. Future work might first fully detail how people conceive all of

humanity and then examine whether humanity as an identity can be used to reduce uncertainty. For example, research might attempt to pull out the prototypical features of “humanity”. If these come to mind easily, this would give some confidence that humanity is indeed an identity with a prototype. However, if these cannot be recalled easily, it would lend support to the idea that “humanity” is too nebulous a concept to form the prototype of an identity.

One problematic feature in the methods of the current work is the cow manipulation. One explanation is that it is unlikely the cow manipulation had its intended effects. Although we filtered out people who did not correctly pass the recall check, the manipulation was ineffective, as we found no relationship between our cow conditions and beliefs toward animals. A pilot study should have been conducted to see if the cow conditions of humanized and dehumanized animals were effectively “humanizing” or “dehumanizing” animals. It is also possible that our predictor, identifying with all of humanity, might have been too far removed from our outcome variables, human domination scales and human qualities scale. It is likely the case that there was low or no correspondence between these three variables, which could explain a lack of relationship. We should have included a measure of desire to eat meat (a clear behavioral intention) after being exposed to the different cows, and this might have been closer to our predictor variables than the dependent variables we used, which focused more on attitudes towards animals (Ajzen & Fishbein, 1977). It would be interesting to see how participants’ desire to eat meat would increase or decrease after viewing animals described similarly to humans, such as the attempted cow manipulation.

The uncertainty prime had its intended effects on participants, such that those who were primed with high uncertainty reported feeling more uncertain about their future and self-identity (Gaffney et al., 2014; Hogg et al., 2007). However, uncertainty did not moderate the relationship between IWAH and beliefs towards animals, as predicted. Surprisingly, IWAH did not relate to conservatism. This sense of “globalization” tends to hold liberal qualities, such as care for global suffering and less prejudice toward outgroups, such as immigrants (McFarland et al., 2019). Thus, we expected to find a negative relationship between identifying strongly with all of humanity and conservative views. Most of our sample identified as Democratic, so this could explain the lack of relationship.

### **Limitations and future research directions**

We found that conservatism predicted human dominance over animals, or the idea that humans are psychologically higher in importance than animals. This was the only thing that predicted human dominance. Future research should consider conservatism as an identity that holds prototypical attitudes around meat consumption. People high in right-wing authoritarianism and political conservatism hold higher negative animal welfare attitudes and justify exploiting other species (Dhont & Hodson, 2014). Thus, this relationship should be explored as an explanation in human-animal relations.

Finally, research on how we treat and relate to animals should be further explored. There are many factors relating to one’s identity that can predict attitudes towards animals, including gender, cultural upbringing, religion, and political ideology (Dhont & Hodson, 2014). It is extremely difficult to change people’s eating habits, especially as

meat-eating is so widespread in our American society. Although people feel dissonance around eating animals, meat consumption is normative for most people and natural and necessary for many (Piazza, 2015). For the betterment of our planet and treatment of animals, it is important to study why differing attitudes toward meat consumption exist, and how we can relate to animals better.

### **Conclusion**

Although identifying with all of humanity did not predict how people treat and relate to animals, this might be because all of humanity does not typically include animals. For those who identify highly with humanity, their focus is not on the welfare of animals, but on the welfare of other humans (McFarland et al., 2019). This makes sense, as feeling more empathy and positive attitudes towards outgroups might only extend to other human outgroups. Animals could be too far away in psychological distance for the predictions of IWAH to hold true. Despite this study's lack of findings, future research should be explored on what other identities might relate to caring for animals. After all, we only have one planet and should learn how to treat all members of it with care and compassion.

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