METHODOLOGICAL AND THEORETICAL INVESTIGATIONS

Doctor of Philosophy — Devin L Johnson
McMaster University — Psychology, Neuroscience, and Behaviour

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METHODOLOGICAL AND THEORETICAL INVESTIGATIONS OF THE ASCENT OF HUMAN SCALE

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Lay Abstract

The work in this thesis adds to the literature on measuring blatant forms of dehumanization. Specifically, this thesis tests assumptions around the use of the Ascent of Human Scale (AOH), an influential measure in social psychology used to measure blatant dehumanization. In addition, we examine if applying the AOH to previous research that has found a link between dehumanization and other constructs reveals similar findings. In the first study, we manipulated the scale's instructions presented to participants to examine if specific language impacts how respondents rate social groups on the AOH. Results found that instruction changes have no impact on how respondents rate social groups, even when told the scale is a measure of blatant dehumanization. In studies two and three we manipulate the extent to which a social group stands out amongst others on the AOH scale. Results indicate that when the in-group of study participants is included on the scale (study two) salience appears not to effect ratings. However, when the in-group of participants is not included on the scale (study three) salience does impact ratings such that the more a group stands out, the more they are dehumanized. Studies four and five examine the relationship between social power and ascent dehumanization. In study four we experimentally manipulate participants' feelings of social power then allow them to rate various social groups on the AOH. In study five, respondents take a measure of personal feelings of power then provide AOH ratings for various social groups. Results from both studies reveal that social power does not impact ascent dehumanization. Taken together the work in this thesis addresses potential concerns regarding the use of the AOH and encourages the application of the scale to previous work to examine if blatant dehumanization is related to other constructs that dehumanization is argued to be central to.

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Abstract

Prior research in dehumanization has elected to indirectly measure the extent to which individuals deny fundamental aspects of humanity to other groups. However, recent research suggests the study participants are more than willing to declare how human or unhuman like they feel various social groups are. An influential measure of assessing this blatant form of dehumanization is known as the Ascent of Human Scale (AOH). Despite much research providing evidence of blatant dehumanization towards out-groups, little research has specifically focused on testing assumptions pertaining to the scale's administration or applying the scale to prior research settings. This thesis adds on the growing literature aimed at assessing methodological aspects of the AOH scale in addition to examining the relationship between blatant dehumanization and other psychological constructs. In study one, we build on prior work by manipulating the instructions participants typically see when giving ratings on the AOH. Results suggest that instructions do not appear to affect how participants rate social groups even when respondents are told the nature of the scale and what it is used for. In studies two and three we manipulate the extent to which a social group stands out amongst others on the AOH. Results reveal that group salience matters only when the in-group of participants is not present on the scale for rating. In studies four and five we examine the relationship between ascent dehumanization and social power, the ability to influence the behaviors of others. In study four we experimentally manipulate participants social power then have them rate various social groups on the AOH. In study five we measure respondents' personal sense of power followed by social group ratings on the AOH. Results reveal that social power is not related to blatant dehumanization, challenging prior literature that has found a link between power and dehumanization in general.

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Chapter 1: General Introduction

Within the literature, social psychology has contributed greatly to our understanding of inter-group dynamics and in particular inter-group conflict. Powerful theoretical frameworks such as social identity theory, has allowed for researchers to understand how individuals relate to others similar (in-groups) and dissimilar (out-groups) to themselves (Tajfel & Turner, 1979). Within inter-group dynamics one construct that has garnered great attention is that of dehumanization, the denial of humanity to other individuals or entire groups (Haslam, 2006). Research on dehumanization within the psychological sciences has focused on assessing the degree to which individuals dehumanize others, which social groups are being dehumanized, and how dehumanization predicts negative harmful behaviors such as prejudice and overt violence. The research in this area is vast but one of the most fundamental components remains how to measure dehumanization, especially in laboratory settings. Various measures have been developed, all with strengths, weaknesses, and some assumptions. More recently a new measure, the Ascent of Human Scale (AOH) has returned dehumanization research to focus on blatant forms of the construct (Kteily, Bruneau, Waytz, & Cotterill, 2015). Since its introduction into the literature many studies have revealed that study participants are more than willing to openly express how human or non-human they feel various social groups are. However, a small but growing body of research has focused on a different question regarding the AOH, mainly what aspects of the scale and its administration may be impacting results. In addition, more research is needed to examine how the application of the AOH to prior dehumanization studies sheds light on the broader construct. Before these questions can be addressed, a review of the history of the construct and how psychology has grappled with it is essential.

1.1 Dehumanization as a construct

To add context to the interest psychologists have in dehumanization it is useful to explore how other academic disciplines have explored the concept especially given how important it is to issues of conflict and violence. Genocide studies, defines dehumanization as one group denying humanity to another with examples that include equating a group with animals such as pests or vermin, and engaging in propaganda to instill this idea in the masses (Stanton, 1998). This definition and its examples hold practical purpose as it allows researchers to classify when warning signs of mass killing are present. In fact, using this definition, Genocide Studies classifies dehumanization as the third of eight total stages in the genocide process. In this process, dehumanization comes right before organization, where individuals and systems are mobilized to begin violence (Stanton, 1998).

In the introduction to Pedagogy of the Oppressed, critical education scholar Paolo Freire writes that dehumanization is fundamental to the maintenance of oppressive hierarchical structures (Freire, 1970, p. 26). As the literature review in this introduction and subsequent data chapters will show, this is chillingly accurate. Specifically in the research showcasing the close relationship between dehumanizing tendencies and the preference for group-based hierarchies. Thus by further understanding dehumanization within social and psychological domains we also gain further insights into concepts such as oppression and hierarchical systems, for dehumanization appears to be the fuel that keeps these machines running.

Looking to the humanities, philosophy adds a useful analysis of dehumanization as a construct as well. Ongoing work by philosopher David Livingstone Smith grounds dehumanization in the realities of racial hatred and violence in the American South. Analyzing the history mass lynchings and torture of Black people in the US, Smith not only shows how central dehumanization

is to the maintenance of oppressive systems, as Freire argues, but affords a deeper conceptual understanding of the phenomenology of dehumanization. For Smith, when one sees the object of their dehumanization they are presented with two conflicting realities, something that presents as human and yet simultaneously appears as non-human (Smith, 2021). Something close to a human form but one that doesn't quite hit the mark in terms of fitting within the category. This conflicted representation breeds not only disgust but contempt, compelling one to act with aggression towards the object of this frustration (Smith, 2021). This link between dehumanization and violence is a topic that has been studied and debated especially within the psychological sciences.

And so before we engage with the psychological literature we see just a brief sample of the extent to which dehumanization as a phenomena has been engaged with by numerous academic disciplines, with no area group being able to claim ownership on it, but many different disciplines using their perspectives and expertise to understand it, and maybe even prevent its worst consequences.

1.2 A psychology of dehumanization

Given the argued consequences of dehumanization, principally acts of mass violence, some of the earliest psychological work on the topic focused on such instances (Kelman, 1976). This early work was thus mostly theoretical as well as historical with examples such as the Holocaust and Rwandan genocide (Kteily & Bruneau, 2017) providing case material for describing, theorizing and studying the subjective experience of seeing others as animals and vermin. As discussed in Haslam & Loughnan (2014), various frameworks sought to capture the essence of how dehumanization operates at the psychological level. Examples include the work of Bar-tal (1989) who defined dehumanization as the tendency for groups to delegitimize a human essence of an out-

group, or Opotow (1990) who viewed the phenomenon as the tendency to exclude dehumanized targets from moral rules, justifying any potential violence done to them (Haslam & Loughnan, 2014). These frameworks however were for the most part largely theoretical with minimal data to back up these claims in terms of how dehumanization worked within the mind (Kteily & Bruneau, 2017).

Research on dehumanization would progress and emphasize laboratory experiments with the primary goal being to isolate variables, rigorously measured to uncover causal relations (Augustine, 2017). However, within this growth of more laboratory experiments came an interesting assumption as clearly, it is thought, individuals will not tell us how much they view others as less than human (Kteily & Bruneau, 2017). The very thought causes a change in the focus on how psychologists will engage in one of the most important aspects of its work, that of measurement. And thus, new forms of measurement are created in order to capture dehumanization in everyday study participants.

1.3 Indirect Measures

Over the next few decades many forms of measurements are developed to study dehumanization. In fact many focused on how participants ascribe particular attributes to others (Haslam, 2006; Leyens, Paladino, Rodriguez-Torres, Vaes, Demoulin, Rodriguez-Perez & Gaunt, 2000 ; Waytz, Gray, Epley, & Wegner, 2010). The central idea behind this line of thinking is that the more, and more interestingly, the less one ascribes fundamental aspects of humanity to a group or an individual, the more they are denying an aspect of humanity to them. This approach provides experimental psychologists with a way to gauge dehumanization of a kind, maintain the rigor of the laboratory experiment, and also keep the participant in the dark about the nature of the study. This

central component, keeping participants unaware of the intended goal of the experimental tasks, to gauge dehumanizing sentiment is what makes these measures indirect (Kteily et al, 2015).

One such framework for measuring dehumanization has been mind attribution. A fundamental aspect of being human is having a mind and as such, denying mental capacities to others, believing they lack these capacities is argued to be a form of dehumanization (Waytz, Gray, Epley & Wegner, 2010). Research has shown that mind perception, seeing others as possessing a mind, falls along two dimensions, experience and agency (Gray, Gray & Wegner, 2007). To perceive that something has a mind means believing it can experience physical and emotional sensations as well as have agency, which involves complex mental faculties such as self-control and morality (Gray, Gray, & Wegner, 2007). Specific experiences and desires are then used to study the extent to which participants deny others these attributes, arguably dehumanizing them (Waytz, Gray, Epley & Wegner, 2010). Research has shown that study participants deny agency to people when they are presented as mere bodies, especially in objectifying manners (Gray, Knobe, Sheskin, Bloom, & Barrett, 2011). Khamitov, Rotman, & Piazza (2016) show that the extent to which participants view a target as harmful influences the extent to which they attribute agency to them, even when controlling for target likability. Another measure derived from Kozak, Marsh, & Wegner (2006) is the mind attribution scale. This scale has respondents' rate how much a person holds the capacity for emotions such as pain or pleasure, intention, such as setting goals, and cognition, such as being able to engage in deep thought. Dehumanization studies using this scale have found that inducing states of social connection, reminding participants of who is close to them leads to rating out-groups lower on the mind attribution scale relative to in-groups (Waytz & Epley, 2012). Using a variation on the mind attribution scale, Kouchaki, Dobson, Waytz, & Kteily (2018) were able to assess self-dehumanization, the extent to which individuals see themselves as lacking fundamental mental capacities, and examine its link to immoral and antisocial behavior.

Mental capacities are not the only aspect of human experience that have been used to ground research on dehumanization and measurement. Focusing on emotions; Leyens, Paladino, Rodriguez-Torres, Vaes, Demoulin Rodriguez-Perez, & Gaunt, (2000) pioneer infrahumanization theory. From this theory it is argued that there are emotions unique to the human experience such as embarrassment and nostalgia. To dehumanize from this framework is to deny these uniquely human emotions to out-groups while attributing them more to one's in-group (Leyens, Rodriguez, Perez, Rodriguez, Torres, Gaunt, Paladino, Vaes & Demoulin, 2001). It is not merely positive emotions that are attributed more to the in-group, but those unique to the human experience, something research in this area has controlled for in developing scales to use to measure infrahumanization (Leyens et al, 2000). Here again we see the power of indirect measures revealing subtle dehumanization towards outgroups. Paladino, Leyens, Rodriguez, Rodriguez, Gaunt & Demoulin, (2002) show that out-group names are given less uniquely human emotions. Contemporarily using emotion attribution as a measure of dehumanization, Rodrigues, Fasoli, Huic, & Lopes(2018) show that individuals engaged in consensual non-monogamy, engaging in multiple romantic relationships are attributed less uniquely human emotions even when compared to homosexual couples, a group with a long history of being dehumanized both by individuals and within broader society such as in the media (Mendelsohn, Tsvetkov, & Jurafsky,2020).

The notion that individuals will attribute more humanity to their ingroup than out-group was expanded further with what became known as the dual model of dehumanization (Haslam, 2006). Here, specific traits became the focus of dehumanization with traits categorized as uniquely human (UH), meaning those only humans could possess such as rationality and civility. Additionally, traits were categorized as human nature (HN) traits such as curiosity and warmth, these are traits that humans and animals can possess. From this framework the extent to which UH or HN traits are

denied to others represent two forms of dehumanization; mechanistic, or animalistic. To deny UH traits, one animalistically dehumanizes another, equating them more with non-human animals than human beings. Conversely, to deny HN traits one mechanistically dehumanizes others, effectively associating them more with machines than people. (Haslam, 2006). Work in this area has been able to show additional forms of subtle dehumanization. For example, evidence of cross-cultural dehumanization was found present amongst Chinese and Australians participants. Results showed anglo-Australians mechanistically dehumanizing ethnic Chinese with Chinese participants animalistically dehumanizing Australians (Bain, Park, Kwok, & Haslam, 2009). This is of particular interest as the mechanistic dehumanization towards Asians is associated with broader stereotypes towards this group as lacking in traits such as warmth but being seen as highly efficient in terms of work, suggesting an more machine-like conception of the group overall. (Bain et el, 2009). As such, certain stereotypes about groups can inform the way in which their humanity is perceived by out-groups.

In a series of studies (Andrighetto, Baldissarri, Lattanzio, Loughnan & Volpato, 2014) found dehumanization by way of the dual model was predictive of willingness to help out-groups. Italian participants were asked to rate survivors of earthquakes in Haiti and Japan on UH and HN traits, and measured on their desire or willingness to help said survivors. Results revealed that respondents mechanistically dehumanized the Japanese survivors, whilst animalistically dehumanizing Haitian survivors (Andrighetto et al, 2014). Again, the forms of dehumanization attributed to Haitians and Japanese survivors relates to stereotypes about each demographic group, with Asians stereotypically seen as colder but more machine like with darker skinned individuals typically associated with animals (Andrighetto et al, 2014).

Indirect measures have not been limited to the mind attribution, infrahumanization, or the dual model exclusively. In a series of groundbreaking studies Goff, Eberhardt, Williams, & Jackson (2008) demonstrate how historical associations between Black Americans and monkeys remain consistent in the American mind. More importantly, this associations between Black Americans and non-human primates was related to participants' acceptance of biased treatment toward Black Americans within society. Such treatments deemed more acceptable included biased outcomes that negatively impact Black Americans in criminal justice cases as well as excessive violence delivered by police officers (Goff et al, 2008). Here the measure of dehumanization was the extent to which participants associated an out-group, (Black Americans) with apes. While the measure was indirect in relation to assessing dehumanization from the participants, the results themselves reveal a more blatant and direct form of the phenomenon.

Researchers have also expanded their attention beyond the act of dehumanizing others but also in how individuals dehumanize themselves, specifically, when one's own conception of self is dehumanized (Bastian & Crimston, 2014). Research focused on self-dehumanization typically measures the phenomenon in the same way as the dual model approach, measuring how respondents attribute uniquely human traits to themselves. Self-dehumanization has been reported in women after recalling instances of objectification (Loughnan, Baldissarri, Spaccatini, & Elder, 2017). Workers subjected to repetitive and menial tasks attribute less human nature traits to themselves and thus mechanistically dehumanize their sense of self (Baldissarri, Andrighetto, Gabbiadini, & Volpato, 2017). Lack of social power, being able to wield control over oneself in social situations is also associated with the tendency to attribute less humanness to oneself (Yang, Jin, He, Fan & Zhu, 2015).

Whether measuring dehumanization directed at others, or towards the self, the standard methods employed so far have been indirect approaches meant to gauge how respondents attribute humanity to others. Recent research however has returned to assessing more blatant forms of dehumanization in laboratory settings.

1.4 An assumption revisited

As discussed so far, the dehumanization literature has expanded in many ways within psychology, generating various measures and key theories to better understand the internal process of denying humanity to others. However, as the research progressed it was time to return to old ideas in order to reassess their validity.

Kteily, Bruneau, Waytz, & Cotterill (2015) introduce the Ascent of Human scale, a one item measure of blatant dehumanization. Returning to the overt type of dehumanization scholars were initially interested in, Kteily and colleagues take the classical image of evolutionary progress, depicting 5 images, a lower order primate on the far left, slowly changing to that of an upright man on the far right. Participants are presented with the following prompt:

"People can vary in how human-like they seem. Some people seem highly evolved whereas others seem no different than lower animals. Using the image below, indicate using the sliders how evolved you consider the average member of each group to be:"

Participants are then allowed to drag a slider scale below the image to where they believe a particular group to be in terms of their evolvedness, argued within the literature to be an assessment of overall humanness (Kteily et al, 2015).

1.5 The psychology of blatant (Ascent) dehumanization

Across multiple studies Kteily et al (2015) show that not only are participants willing to rate others as less evolved, and thus less human, on this scale, but that broader environmental factors have play a role in ascent dehumanization as well. For example, within the US context, under former President Donald Trump's presidential campaign, research shows that as he became are more popular and viable candidate for president his anti-muslim rhetoric translated to greater ascent dehumanization within the US.

Researchers using the AOH scale uncover willingness to rate various social groups as less than fully human by way of the ascent image. These groups are not limited to racial and ethnic groups, typically focused on research on dehumanization. In a series of studies, Kunst, Kteily, & Thomsen (2019) manipulated how participants would perceive individuals in terms of height. Results show that shorter individuals are rated significantly lower on the AOH scale compared to taller counter-parts. Other physiological differences are subject to dehumanization as shown in Kersbergen & Robinson (2019) who in a series of cross-cultural studies investigated how participants would rate obese individuals on the AOH scale. Across samples in the US, Britain, and India, study participants rated obese individuals of their respective countries as lower on the AOH scale compared to their non-obese counterparts. In addition, participants were more likely to donate to a charity that would benefit animals compared to one that would benefit obese individuals when given the option to do so in a deceptive task. While AOH scores did not predict donation likelihood the evidence shows that participants rate obese individuals lower than other groups and are more willing to be of assistance towards animals than fellow humans when they are obese (Kersbergen & Robinson, 2019).

Ascent dehumanization reveals itself to be a powerful indicator of other attitudes and behaviors crucial to inter-group contact. In a groundbreaking series of studies Bruneau & Kteily (2017) surveyed Israelis and Palestinians during the 2014 Gaza war. Not only did results show that both Israelis and Palestinians mutually dehumanize each other by way of the scale, but that on the Israeli side, Ascent dehumanization predicted a willingness to accept collateral damage in order to win the war (Bruneau & Kteily, 2017). These results were also grounded in the reality of the existing power dynamics within the conflict as Israelis are economically, militarily, and politically more powerful than the Palestinians. This was an essential component of the analysis as results of the mutual dehumanization revealed that a low powered group can in fact dehumanize a much powerful out-group, previously believed to be unlikely (Bruneau & Kteily, 2017). This aspect of power and dehumanization is addressed further in chapter 4.

In an interesting study Bruneau, Szekeres, Kteily, Tropp, & Kende (2020) further examined the predictive nature of dehumanization in an educational context. Hungarian teachers were presented with the AOH scale and were asked where they would place Roma individuals, a marginalized group within that region, on the scale. In addition, the teachers were presented with student profiles and asked to make recommendations in terms of additional help or placement in advanced courses. These profiles were distinguished as either Roma or Hungarian students and were randomly designed to be that of a student who was struggling academically or one who was achieving well. Results showed that not only did the Hungarian teachers dehumanize Roma on the Ascent scale but were less likely to recommend advanced placement for an achieving Roma student. More importantly, here Ascent dehumanization also predicted this willingness to make advanced placement recommendations for Roma students (Bruneau et al, 2020).

Results from the AOH scale can also be used in tandem with indirect measures of dehumanization to reveal fascinating insights about the nature of dehumanization more broadly. In a large study Petsko, Lei, Kunst, Bruneau & Kteily (2021) presented American liberals and conservatives with the AOH scale, asking them to provide ascent scores for Arabs. In addition to this, participants were given the reverse correlation task. In this task, participants are presented images of faces that have been hollowed out with white noise, making the overall image distorted. Variations to this noise are applied to control for systematic noise generation. Participants were then presented with pairs of blurred faces in each trial and asked to pick which one appeared to be Arab or American. Third party raters then took those images and rated them on how human the faces seem. Results reveal that for both conservatives and liberals, their mental representations of Arabs are rated equally as dehumanized. This is in contrast with results from the AOH portion of the study which showed conservatives dehumanizing Arabs significantly more than liberals on the AOH scale (Petski, et al, 2021).As such when combined together, blatant dehumanization by way of the AOH scale combined with indirect measures of dehumanization can reveal compelling insights into how groups are perceived as well as the potential conflict that exists within individuals who profess the humanity of others but may hold unflattering implicit views.

Ascent dehumanization is also related to one of the more interesting psychometric properties tied to inter-group relations, Social Dominance Orientation (Pratto, Sidanius, Stallworth, & Malle ,1994). SDO stems from Social Dominance theory (Sidanius & Pratto, 2001), Social Dominance theory argues that across cultures and societies humans organize themselves amongst group-based hierarchies with particular groups at the top, controlling economic, military, and political power with multiple groups on the lower end of this hierarchy (Sidanius & Pratto, 2001). These hierarchies are typically along categories of age; with adults or older individuals usually holding more power over younger individuals, gender, with males holding more power over women. A final category

encompases what is known as arbitrary sets such as race, class, religion, etc. (Sidanius & Pratto, 2001). Social Dominance Theory thus aims to examine the interlocking relationships between these types of hierarchies as they exist across societies. (Sidanius & Pratto, 2001). As a matter of individual differences, SDO captures one's preference for hierarchy, and more interestingly, the acceptance one has of behaviors that enforce and maintain those hierarchies, violent or not (Ho, Sidanius, Kteily, Sheehy-Skeffington, Pratto, Henkel, & Stewart, 2015). Studies have consistently shown that ascent dehumanization is significantly correlated with SDO, such that the more respondents dehumanize groups on the AOH scale, the higher their SDO score is. These findings bring us back to Freire 's (1970) position on the essential component of dehumanization for hierarchy. We see in the data the close relationship between seeing others as less than human and a desire to maintain a hierarchical structure.

On a positive note, research also shows what can reduce dehumanization as measured on this scale. Results have shown that continued positive contact with out-groups can reduce blatant dehumanization in participants from longitudinal studies. Over the length of a semester long course Bruneau, Hameiri, Moore-Berg & Kteily (2021) found that Americans rated Muslims higher on the AOH after having consistent contact with muslim classmates compared to their ratings for Muslims before the start of the course. As such dehumanization measured via the AOH scale not only offers the opportunity to predict certain behaviors and preferences but can also be used to measure change towards out-groups over time.

1.6 Not just for the dehumanizers

One interesting use of the scale has been in capturing how others feel they are dehumanized by out-groups, a phenomenon known as meta- dehumanization. Studies using the AOH scale to

measure blatant meta-dehumanization present participants with the scale only this time asking participants to place where they believe a specific out-group would rate them. Studies examining meta- dehumanization have shown that the extent to which individuals believe they are dehumanized by an out-group predicts the extent to which they subsequently dehumanize that out-group. In a series of studies Kteily, Hodson, & Bruneau (2016) showed that Muslims in the United States score high on meta-dehumanization, the extent to which they feel non-Muslim Americans would dehumanize them. Meta-dehumanization scores also predict the willingness Muslims would have in terms of reporting terroristic behavior to the police. The implications for this are staggering, as the more dehumanized groups feel the less inclined they may be to support and help an out-group even when doing so could prevent violence.

1.7 A field grappling with itself

As the recent years have shown promise in research on dehumanization, especially when utilizing the AOH scale, so too have concerns over both the methodological and empirical bases of the work. In a conceptual piece challenging how the concept is discussed within the discipline, Over (2021) argues that definitions that rely on associating individuals or groups to animals, amongst other definitions, are not sufficient to capture the phenomenon and study it rigorously. The challenge posed to the experimental psychologist here is to conceptualize the phenomenon in such a way that does not lead to these inconsistencies. In response to an overview of the state of dehumanization research by Kteily & Landry (2021), Bloom (2021) argues that psychologists have too broadly defined dehumanization and as such are not measuring a definitive construct.

In a series of experiments Rai, Valdesolo, & Graham (2017) demonstrate how dehumanization, measured via indirect measures, is not related to instances of moral violence but

instrumental violence. That is, only when violence serves a specific function do participants dehumanize potential targets. Follow-up discussions from these results have led scholars to argue that the role dehumanization plays in violence may not be as important as previously theorized (Lang, 2017).

Recently, research has also challenged the quality of the measures used to gauge indirect dehumanization, principally those from infrahumanization, and the dual model hypothesis. In a series of pre-registered studies Enock, Tipper, & Over (2021) show that the extent to which uniquely human emotions used on dehumanization studies have been controlled for valence has lacked rigor. Specifically, researchers have not controlled for the sociality of these emotions, meaning that participants may not be attributing uniquely human emotions to their in-group but attributing sociable emotions more to their in-group and less sociable emotions to out-groups. As an example, the emotions of schadenfreude is positive to the person experiencing it, but in general is not seen as a sociable emotion. Results from their work reveal just that, when emotions were categorized as favorable and unfavorable, in-groups attributed the favorable ones more to their in-group while attributing less favorable emotions to the out-group.

In a second series of studies Enock, Flavell, Tipper, & Over (2021) challenge the dual model's uniquely human and human nature traits as a reliable means to capture dehumanization. Here the authors argue that a key component not controlled for has been the favorability of the traits themselves. Results again support these concerns, participants attributed uniquely human but unfavorable traits to out-groups more to their in-group and vice versa. Results from both studies suggest that participants are not rating out-groups on humanity when engaged in these tasks but aspects of likability. Thus it would appear that participants are not dehumanizing at all, which if true could be of serious concern for the results of studies that have used these methods. The empirical

challenge to these methods used in research on dehumanization have already led to more conceptual work challenging core assumptions in the dehumanization space (Over & Cook, 2022).

Returning to the AOH scale, at the time of writing this thesis, no empirical work has yielded results that directly challenge the validity of the scale. In addition, little conceptual work has challenged the core idea behind the scale as well as how it is used. In fact, prior work that has expressed concerns over the scale has found that its validity remains intact. In a large sample pre-registered study Izydorczak, Grzyb, & Dolinski (2022) found that changes to the scale's administration do not impact results. Specifically, researchers were concerned with the anchoring effect of the scale's slider and if its initial position would influence results. They were also concerned with whether or not presenting social groups one at a time, or all together would impact results. Finally, they were interested in knowing if presenting the scale before or after other measures would influence results. Results from their study reveal that these changes in administration have no effect in how respondents rate social groups. However, as it will be argued in the subsequent empirical chapters there are more aspects of the AOH scale to investigate, especially in terms of administration. In addition, given the challenges to the indirect measures used in the research on dehumanization the AOH scale may prove useful in re-evaluating old questions believed settled or understood, especially if the measure is as robust as it currently appears to be. As such this thesis will explore the methodological and theoretical aspects of scale. With the former we explore how changes to scale administration not yet conducted may affect how respondents rate social groups. In addition we apply the scale to areas believed settled to see if blatant dehumanization is linked to other phenomena previously believed to be related to indirect dehumanization.

1.8 This thesis

Taken together, dehumanization is a concept many academic disciplines have been fascinated with given its close relationship to violence and atrocities. Within psychology, the puzzle has been in understanding how dehumanization manifests within the individual, and how it motivates hostile behaviors. Importantly, the field has grappled with ways to conceptualize psychological dehumanization as well as how to measure it. While many advances have been made in the research on dehumanization, recently new theoretical and empirical evidence has challenged prior research in this area. Given the popularity of a new measure of dehumanization, one that opens up new possibilities to tap into blatant forms of dehumanization, previously thought unmeasurable, this thesis focuses directly on the AOH scale. How it is used, what changes to it may or may not impact results, and more importantly, what we can learn about dehumanization when applying this measure to previously established findings.

This thesis will cover three empirical chapters focused on both the methodological as well as theoretical aspects of the AOH scale. In chapter 2 we review the literature that has attempted to investigate how instructions on the AOH scale impact results and present results from a study designed to improve on these prior results. Specifically, we expand on previous research that has already examined the scale's instructions while also incorporating new manipulations that address potential concerns of the AOH scale and how participants engage with it.

In chapter 3 we investigate an area of the scale's instruction which to our knowledge have never been addressed, that of filler groups. Studies using the AOH may include additional social groups that researchers are not interested in measuring dehumanization for. However, these groups are added in order to hide the true comparison of interest from study participants. We open up this

area of investigation by examining if the salience of the target out-group amongst filler groups impacts ratings.

Finally in chapter 4 we apply the AOH scale to an area of research previously established, the relationship between social power and dehumanization. Prior research has demonstrated a link between social power, the ability to control the actions of others in social settings and dehumanization. Results consistently show that power facilitates dehumanization while a lack of power facilitates dehumanization towards the self. However, these studies have all used the very indirect methods that are currently being challenged in terms of their validity. As such we examine if social power is tied to blatant dehumanization within the Canadian cultural context.

The thesis ends with chapter 5 where we discuss the implications of the results from the empirical chapters and what avenues of research they open up. We also discuss these results within the broader context of dehumanization theory. Finally, we discuss the need for a more contextualized approach to dehumanization within psychology, an idea previously argued for that has garnered new attention.

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Chapter 2

Study 1: Don't worry they get the idea: Instructions have no impact on dehumanization ratings on the ascent of human scale.

2.1 OVERVIEW

Rationale. Despite the prevalence of the AOH scale in research on dehumanization, few studies have examined the impact that the scale's instructions have on participant ratings. In addition, no study to our knowledge has directly informed participants to the nature of the scale. This latter component is trouble as evidence suggests some participants are confused as to the purpose of the scale when taking it. **Specific aims.** To examine the impact that instructions have on how participants rate social groups on the AOH. Specifically, to examine how language that removes all mention of evolution and language that informs participants of the nature of the scale impacts how respondents engage with the scale overall. **Methods.** 84 Canadians were recruited via Prolific to take the AOH scale with 6 groups to be rated (Canadians, Americans, Arabs, Muslims, Europeans, Chinese). Participants were put in one of three groups that reflected changes to the AOH scale's instruction prompt; Regular, Non-Evolution, Direct. Building off prior work the Non-Evolution prompt removed all language tied to evolution in the AOH scale's instructions. In a novel condition, the Direct prompt told participants the nature of the AOH scale and how it is used to measure dehumanization. **Results:** We found no interaction of instruction type on social group ratings nor a main effect of instruction type. Results did reveal a dehumanizing effect, showcasing that respondent placed some groups significantly lower than others. Results suggest that while dehumanization by way of the AOH scale is present, the instructions did not impact participant ratings.

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Don't worry, they get the idea: Instructions have no impact on dehumanization ratings on the ascent of human scale

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2.2 ABSTRACT

A common method for assessing blatant dehumanization asks participants to rate "how evolved" they think members of various social groups are using the Ascent of Human scale (AOH) that transitions in stages from a crawling ape to a fully upright modern human. However, little is known about how task instructions affect participant ratings. In this pre-registered study, participants saw alternative forms of instruction including the traditional instructions emphasizing "evolution", a prompt without any reference to evolution, and a prompt that clearly explained that the scale assesses dehumanization. Instruction type had no effect on dehumanization ratings on the AOH scale. These results support the idea that the AOH scale is a robust means of assessing blatant dehumanization.

Keywords: blatant dehumanization; instructions; ascent of human scale

2.3 Introduction

Within intergroup relations, prejudice, conflict, and violence remain unfortunate realities. Dehumanization, seeing others as less than human, and in extreme forms, equating others with animals, is argued to be a central component driving some of the worst instances of violence towards social groups. Historical analysis of atrocities such as the Holocaust and the Rwandan genocide show evidence of dehumanization, as perpetrators of mass violence likened their targets to non-human entities, justifying their torture and murder (Tirrell, 2021; Smith 2011). Dehumanization is not limited to instances of war and genocide exclusively. Analysis of racial violence in the United States over the decades shows evidence of White perpetrators viewing Black individuals as less than human, effectively sanctioning violent actions towards them such as lynchings (Smith, 2016). Research in the US has shown that individuals associate Black Americans with non-human animals, particularly monkeys (Goff, Eberhardt, Williams, & Jackson, 2008). Furthermore, this association

has been linked to justifications for unfair and harsh treatment of Black Americans such as police brutality and biased judicial punishments. In the Canadian context, recent work has shown that Indigenous people are subjected to blatant dehumanization as assessed via the ascent of human scale (Galang & Obhi, 2021). Furthermore, evidence of dehumanization was found to be prevalent towards Asians during the COVID-19 pandemic, with Asians being blatantly dehumanized, rated as more closely related to lower order primates than humans (Markowitz, Shoots-Reinhard, Peters, Silverstein, Goodwin, & Bjälkebring, 2021). It would appear then, that dehumanization is not only prevalent but seems to be a central component in motivating instances of violence towards out-groups deemed non-human (Smith, 2014; Smith, 2016).

Much of the psychological research on dehumanization has focused on its more implicit and indirect forms. Dehumanization can be an everyday occurrence, and as such, various measures have been designed to capture dehumanization and how it manifests. For example, one way to conceive of dehumanization would be the tendency to deny specific mental faculties to others such as desire, and planning (Waytze, Gray, Epley, & Wegner, 2010). Believing that individuals or whole social groups do not possess these faculties is theorized to be a way of denying a fundamental aspect of humanity to said groups and thus constitutes dehumanization (Waytz, Gray, Epley, & Wegner, 2010). One such measure used from this framework is the mind attribution scale (Kozack, Marsh, & Wegner, 2006). In this task participants rate the extent to which they find outgroups capable of experiencing complex mental routines such as planning for the future or experiencing complex emotions.

One of the more popular theoretical frameworks for dehumanization comes in the form of Infrahumanization theory (Leyens et al, 2000; Leyens et al, 2001). Under this theory, it is argued that there are emotions exclusive to the human experience such as embarrassment or nostalgia.

Dehumanization occurs when individuals attribute these uniquely human emotions more to their in-group than an out-group. When this happens, an individual is denying others a fundamental aspect of humanity. Studies using this framework typically ask participants to rate the extent to which they believe out-groups hold the capacity to feel and experience these uniquely human emotions.

Building off this, Haslam (2006) proposed the dual model theory of dehumanization. Here, specific traits such as rationality, or civility, are categorized as uniquely human traits compared to other traits such as warmth and curiosity, categorized as human nature traits. The latter being traits both humans and animals can possess with the former being traits only humans can possess. A measure derived from this framework asks participants to rate how much an out-group or out-group member can embody these uniquely human or human nature traits. Across these frameworks and the measures that come from them, research has shown everyday dehumanization to be a fact of social life (Haslam, & Loughnan, 2014; Paladino, Leyens, Rodriguez, Rodriguez, Gaunt & Demoulin, 2002; Kouchaki, Dobson, Waytz & Kteily, 2018).

Recently, research has re-focused on blatant forms of dehumanization with one of the more popular measures being the ascent of human scale (Kteily, Bruneau, Waytz, & Cotterill, 2015). For this measure, participants are presented with the popular (but inaccurate) image of evolutionary progress with 5 silhouettes ranging from a lower order primate progressing to an upright human. Using a slider scale that corresponds with the images, respondents are asked to place where they believe the average member of a social group to be from 0 indicating least evolved to 100, meaning most evolved. Kteily et al (2015) have shown that study participants are more than willing to rate various social groups as less than fully evolved, especially when in comparison to their own in-group. This form of blatant dehumanization extends beyond racial groups or nationalities with studies showing ascent dehumanization directed toward political out-groups (Cassese, 2020; Cassese, 2021),

individuals addicted to drugs (Sumnall, Atkinson, Gage, Hamilton, & Montgomery, 2021), obese individuals (Kersbergen & Robinson, 2019) as well as short individuals (Kunst, Kteily, Lotte Thomsen, Lotte Ansgaard Thomsen, & Thomsen, 2019) to name a few. Being able to capture this form of blatant dehumanization taps into one of the fundamental notions behind the phenomenon, the denial of humanity and associating others with non-human animals (Kteily & Landry, 2022).

From a research perspective, one promising aspect of the ascent dehumanization approach to studying dehumanization is its ability to be useful not only as a dependent variable but as an independent variable as well. A consistent finding in research using the AOH scale finds that ascent dehumanization is closely related to Social Dominance Orientation (Kteily et al, 2015; Galang, Ku & Obhi, 2021), the preference for group-based hierarchies as well as actions that ensure their maintenance (Pratto, Sidanius, Stallworth, & Malle,1994). During the 2014 Gaza War, researchers polled Israelis and Palestinians, collecting ascent dehumanization toward the out-group from each side of the conflict. Results showed that not only did both sides blatantly dehumanize each other but, amongst the Israeli participants, ascent dehumanization significantly predicted an acceptance of collateral damage towards innocent Palestinians if strategic success was at stake (Bruneau & Kteily, 2017). In another study, teachers in Hungary were presented with the AOH scale measuring blatant dehumanization towards the Roma, a marginalized group in the region. Results found that teachers' blatant dehumanization of Roma was related to their willingness to recommend Roma students to necessary courses or additional help to further their education (Bruneau, Szekeres, Kteily, Tropp, & Kende, 2020). The more the teachers dehumanized the students as per the AOH scale, the less likely they were to recommend Roma students to advanced classes, the effects of which could impact career and wellbeing advancement for these students (Bruneau et al., 2020).

While the AOH scale has opened many avenues for research, recent literature has challenged prior dehumanization studies on both conceptual (Over, 2021; Bloom, 2022) and methodological (Enock, Tipper, & Over, 2021; Enock, Flavell, Tipper, & Over, 2021) bases. Focusing on measurement, Enock, Tipper, & Over (2021) challenge the validity of measuring dehumanization by way of attributing uniquely human emotions more to an in-group relative to an out-group. In a series of studies, the researchers show that participants ascribe more uniquely human emotions to out-groups when said emotions are anti-social, such as scorn and arrogance (Enock, Tipper, & Over, 2021). The dual model's approach of measuring attribution of uniquely human traits to out-groups is also under scrutiny. Specifically, research has questioned the extent to which the desirability of uniquely human emotions have been controlled for. The issue being that participants may not be attributing more uniquely human traits to their in-group, but merely desirable traits. In a series of studies Enock, Flavell, Tipper & Over (2021) reveal that when more rigorous controls for desirability are in place, participants attribute less desirable but uniquely human emotions more so to out-groups than in-groups. Results from both papers would suggest that study participants are not denying fundamental human emotions or traits to out-groups but denying their capacity to hold desirable traits and sociable emotions. As such, they may not be dehumanizing out-groups at all. Given these challenges it is important to assess the robustness of the methods used to capture dehumanization in participants.

Such work already exists for the ascent of human scale with prior work examining the validity of the measure. In a recent paper, one of the first to primarily focus on the methodological aspects of the scale, Izydorczak, Grzyb & Dolinski (2022) tested how changes to the scale's administration impact ratings. Results from a pre-registered, high-powered study reveal that administration choices such as presenting groups one at a time, compared to all at once, the position of the slider (in the middle, or to the extreme left or right), and other changes have no effect on how participants rate

social groups on the AOH scale. As part of a larger research project Markowitz & Slovic (2021) examined if ascent dehumanization would change if participants had to select one of the 5 images on the AOH image as opposed to the usual slider scale. Results showed that in the condition where participants were forced to make a discreet choice, ascent dehumanization was lower compared to the condition where respondents used the traditional slider scale to make their ratings (Markowitz & Slovic, 2021). It would thus appear that requiring participants to make a discreet choice in terms of non-human categories can inhibit dehumanization but not eradicate it entirely. One particular area that has received some attention has been the instructions on the AOH scale; more specifically, the language in the prompt that participants are presented with during the scale's administration.

Prior work on scale instructions

In most studies using the AOH scale, participants are presented with the following prompt; "People can vary in how human-like they seem. Some people seem highly evolved whereas others seem no different than lower animals. Using the image below, indicate using the sliders how evolved you consider the average member of each group to be:"
However, variations of this prompt are present in the literature, with some studies asking participants to rate how evolved each group is, with no mention of variations in evolvedness (Slovic, Mertz, Markowitz, Quist, & Västfjäll, 2020) or no instructions at all (Martherus, Martinez, Piff, & Theodoridis, 2019). Given these variations in administration it is important to know if changes or omissions to the scale's instructions can impact ratings.

In studies 1 and 5 of the initial paper introducing the scale Kteily et al. (2015) presented participants with an instruction free version of the AOH scale. Results from both studies indicated no difference

in the ascent ratings when the instructions were omitted. However, in both studies the only difference between the conditions was the presence or absence of the standard instructions.

In another validation study, a part of a larger research project, Jardina & Piston (2021) included a condition in which participants were presented with a variation on the scale instructions. The researchers argue that for participants who do not believe in evolution, the language in the prompt presents a potential confound and may not capture the dehumanizing sentiment of those skeptical or rejecting of evolution (Jardina & Piston, 2021). In this study, participants in one condition were presented with the traditional instructions while a second group was presented with instructions that omitted the sentence discussing how others can be highly evolved, "People can vary in how human-like they seem. Using the image below, please indicate using the sliders how evolved you consider the average member of each group to be" Jardina and Piston (2021). Results revealed no differences in ratings for social groups between the two conditions. Curiously, the word "evolved" remained in this modified variation and thus it is possible that allusions to evolution were still salient in the minds of participants.

Recent research has also revealed an interesting finding on how participants interact with the ascent of human scale. Returning to Markowitz & Slovic (2021), researchers were also interested in why participants dehumanize others. For those respondents who rated an out-group less than fully evolved on the AOH scale, participants were asked to provide a reason why they had done so after being told that their actions on the task reflect dehumanization. Interestingly, results from a thematic analysis of the responses reveal that a non-trivial proportion of respondents wished to recant their ratings, expressing to some degree that they were unaware that the task and their actions on it indicate dehumanization. While it can be argued that this is an instance of participants backing out of their (dehumanizing) choices when confronted about their implications, a different interpretation

could be that something about the scale and perhaps even the instructions may lead to some confusion for some participants. If there is any truth to the latter interpretation than a further examination of the scale's instructions and how they can influence results appears to be in order.

From the prior research it appears that instructions on the AOH scale do not have an impact on ratings. However, this work has not fully accounted for the removal of evolution-based language or take into account potential confusion by way of participants. The latter being of particular concern. If the AOH scale is meant to capture blatant dehumanization, then there should be no confusion to participants regarding what they are being asked. It is also important to note that the previously mentioned studies investigating the impact of changes to the instructions on the AOH scale have only done so as a secondary goal to larger research projects. Thus, little research has directly investigated changes to the scale's instructions as its primary research goal.

The purpose of this Study

This study sought to examine how changes to the text instructions on the AOH scale impact how participants engage with it. Specifically, three conditions were created. One condition that presented participants with the traditional instructions, another that removed all language associated with evolution, and a condition that explicitly informed participants about the nature of the scale and what it is intended to measure.

The primary focus of our study was methodological and thus we make no a-priori hypotheses in ascent dehumanization for any specific group. Studies using the AOH scale do so to measure blatant dehumanization for the social group of interest to the researchers. Because of the diversity of groups used on the scale across studies, we focus on some of the original groups used on the AOH scale by

Kteily et al (2015), comprising; Canadians, Americans, Chinese, Europeans, Muslims, and Arabs. Our study thus examines the impact that instruction changes have on participant engagement with the scale overall and not an analysis of instruction changes on a particular group's ratings.

2.4 Methods

Preregistration

Main hypotheses, sample size, and analysis plan were pre-registered and can be found here: https://aspredicted.org/85K_ZCQ

Sample Size Determination

Our main goal for this study was to examine the extent to which variations of the AOH scale's instructions impacted ratings for the 6 groups initially used in the earlier studies from (Kteily et al., 2015). We were interested in the interaction between ascent instructions and ratings for all groups presented. We elected to focus on a moderate effect size (partial eta squared .06) for an 3x6 interaction term. A minimum of 84 participants is required to detect this effect at 95% power.

Participants

We recruited 84 participants via Prolific with Nationality (Canadian) as the only filter for our in-group of interest. Due to the short nature of the experiment, we included one attention check at the end of our study, administered during the social dominance orientation scale. Participants who failed the attention check were excluded from the analysis. No participants met this criteria and thus we analyze the full dataset with all recruited participants.

Procedure

After reading and signing a consent form, participants were randomly sent to one of three experimental groups; Regular Prompt, Non-Evolution Prompt, or Direct Prompt. The regular prompt presented the ascent of human scale with the standard text used in Kteily et al. (2015). The Non-Evolution Prompt removed any direct mention of evolution. The Direct Prompt told participants that the scale was meant to gauge blatant dehumanization and to place their rankings with that they had in mind (see table 1 for exact wording of each prompt). Within each condition participants gave ratings for the same six groups used in the original ascent of human paper; Canadians, Americans, Muslims, Europeans, Chinese, Arabs. All groups were presented in a random order for each participant. Participants then took the social dominance orientation scale, version 7 (Ho et al, 2015), followed by demographic questions including age, gender, and whether they belonged to any of the groups they rated on the ascent of human scale. They were then a debriefed into the nature of the experiment. The experiment was approved by the university ethics board.

Design and Analysis

Our study took the form of a 3 x 6 mixed design with instruction condition as a between subjects factor and AOH group as a within subjects factor. Data were analyzed using JASP Version 0.16.4

2.5 Results

Main Hypothesis

Due to violations of sphercity we present results with Greenhouse Geiser corrections. Results from the 3 x 6 Mixed ANOVA showed no interaction effect between scale instructions and AOH group $F(5.84, 233.51) = .73$, $p = .62$, $\eta_p^2 = .02$.

Secondary Analysis

We also examined the main effects from our ANOVA model. Results showed no main effect of text instruction $F(2,80) = 2.62$, $p = .08$, $\eta_p^2 = .06$. However, we did find a main effect of AOH group $F(2.92, 233.51) = 4.94$, $p < .01$, $\eta_p^2 = .06$. We conducted post-hoc tests with bonferroni corrections and pooled error terms. Relative to the in-group of our participants, Canadians, no other group was significantly rated higher or lower. This would indicate that participants did not dehumanize any of the other groups relative to their in-group. However, participants did rate some groups lower than others as Americans were rated lower than Europeans $p < .01$ indicating participants dehumanized Americans relative to Europeans. In addition, Europeans were rated higher on the ascent of human scale than both Muslims ($p = .02$) and Arabs ($p = .01$), indicating that participants did dehumanize Muslims and Arabs relative to Europeans. For a full breakdown of post-hoc comparisons see Table 2.

SDO and AOH Scores

Kteily et al. (2015) recommend computing a dehumanization index, a measure of the average difference between the in-group of participants and the lowest rated groups. This measure can be used for additional analyses such as comparisons with other psychometric scales. Galang, Ku, and Obhi (2021) used this approach in assessing the relationship between the dehumanization index and

SDO as well as empathy using the IRI. However, given the lack of a group rated significantly lower than the in-group of our participants we omitted the dehumanization index all together. We instead ran correlations between participants SDO and ascent ratings for all 6 social groups. Shaprio-Wilk tests for multivariate normality were violated for all our variables $p < .001$ and thus we present Spearman's Rho correlations.

Results show SDO to be negatively correlated with all ascent group ratings, such that the higher one scores in SDO the lower they rate a group on the scale, dehumanizing them more (See Table 3).

2.6 Discussion

In the current study, we manipulated the instructions on the ascent of human scale presented to a sample of Canadian participants. Results indicate that changes in the instructions that either omit specific mentions of evolution, or tell participants what the scale is, have no impact on overall ascent ratings. Secondary analyses in our study found that while participants did not dehumanize other groups relative to their in-group (Canadians) they did place some groups lower than others. In addition, supporting a consistent finding we see that raw ascent of human sores are correlated with social dominance orientation. This adds to the literature showing a link between dehumanization and hierarchy preference (Kteily et al, 2015, Galang, Ku & Obhi, 2021).

The primary goal of this study was to determine how changes to the AOH scale's instructions influenced ratings. As we had no interest in measuring dehumanization for any particular group, we focused on some of the initial social groups first used on the AOH scale by Kteily et al (2015). As many studies using the AOH scale present the social groups all at once in a random order we were thus interested in the interaction between the changes to the scale instructions and how participants would rate all the groups presented to them. The lack of interaction effect and the lack of a main effect of instructions, supports previous studies that sought to validate the measure by examining

scale's instructions, Kteily et al. (2015) which removed the instructions entirely (see also study by Jardina and Piston (2021) which removed some of the language mentioning evolution).

In our study, by creating a condition that removed all mention of evolution in the instructions we extend on the work from Jardina & Piston (2021) whose manipulation still included the word "evolved" in their adapted version. Markowitz & Slovic (2021) present evidence that may be of concern for researchers using the AOH scale. Participants who wished to recant their ratings when made aware that their scores indicate dehumanization could suggest that some participants are simply confused by the scale and do not know what it means. This is concerning if the AOH scale is designed to capture direct and blatant dehumanization. Our study condition that explicitly tells participants the nature of the scale seeks to address this potential concern. Results from our study suggest that telling people the nature of the scale does not hinder their willingness to rate some groups as less than fully evolved. As such this would indicate that the scale is capturing a direct measure of overt dehumanization. Results such as this are in line with prior work which has demonstrated that small changes to scale instructions do not impact overall results. Tadepalli (1995). found that making changes to the instructions on the selling orientation customer orientation scale, did not impact the scale's integrity. It would thus appear that the task or questions provided to participants in a scale can sufficiently convey what is expected from participants.

While we did not see evidence of dehumanization relative to the in-group of our participants, Canadians, curiously we saw participants rate Americans significantly lower on the scale relative to Europeans. If the ascent of human scale is truly capturing dehumanizing sentiment, this would indicate dehumanization of Americans, a relatively powerful group on an international scale. As

prior work has argued it is not out of the bounds of dehumanization theory to find powerful and non-marginalized groups subjected to dehumanization (Kteily et al., 2015). It is also possible for powerful entities to be dehumanized by those with less power than them as seen in Bruneau & Kteily (2017). This unfavorable view of Americans relative to Europeans might be explained by recent issues in the United States, such as the US response to the COVID 19 pandemic as well as the recent political turmoil in the country (e.g., the January 6th Capitol Riots). This evidence of dehumanization towards Americans is also validated by the negative association between ascent scores for Americans and social dominance orientation. The result indicates that participants' hierarchy preference is related to their perception of Americans. Further research should examine the rate of dehumanization toward dominant groups and its link to SDO.

We also saw evidence of dehumanization of historically stigmatized groups such as Arabs and Muslims. Both groups are not only subjected to prejudice and violence but are also stereotypically conflated with one another (Beydoun, 2013). It is important to note that we did not observe our Canadian participants rating Arabs or Muslims significantly lower than their in-group, suggesting that Canadians do not see either group as less evolved than themselves. They did however see both groups as less evolved than Europeans suggesting that while Canadians do not dehumanize Arabs or Muslims relative to themselves, they do see them as less than human when compared to other social groups.

This study adds to the literature by being one the first to explicitly study changes to the AOH scale's instructions as its primary goal. Some studies do not include the full instructions on the AOH scale. Our results indicate that slight changes or omissions to the instructions can be done so with the

confidence that these changes are not influencing results. However, this work is not without its limitations. Firstly, our study was powered for medium interaction effect and thus it is possible that we are not capturing smaller effects that may exist when data is collected on a larger sample. We elected for a medium effect size as such an effect would indicate to our perspective a serious issue with the text prompt by impacting changes in group ascent scores. Thus, follow up work may be useful in conducting this study with a larger sample for smaller effects which may still be of interest along with examining the effect of varying prompt instructions with different groups used.

Studying blatant forms of dehumanization is important as well as assessing the robustness of the measures used. This study adds to this literature with evidence that the ascent of human scale is capturing something that directly pertains to the denial of humanity to various social groups. Such dehumanization is of concern in our increasingly diverse societies, and we encourage further work in this area.

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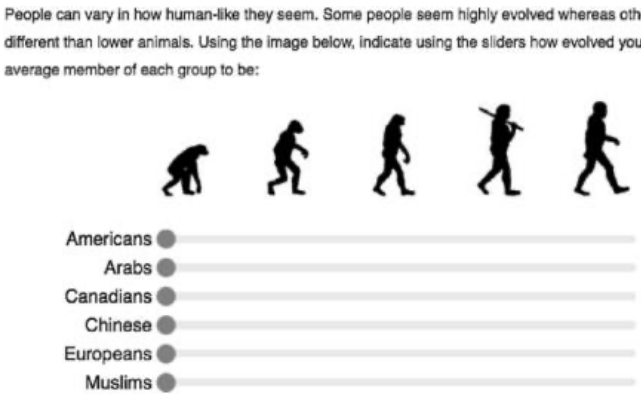

Figure 1
Ascent of Human (AOH) Scale as traditionally presented to participants. As depicted in Kteily et al (2015).

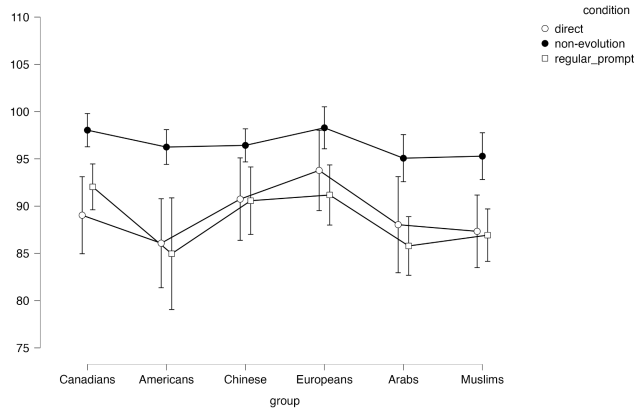

Figure 2
Interaction plot of Ascent of Human (AOH) ratings for each group by text instruction condition. Scores closer to 100 indicate less dehumanization. Error bars represent 95% Confidence Intervals

Regular Prompt	Non-Evolution Prompt	Direct Prompt
People can vary in how human-like they seem. Some people seem highly evolved whereas others seem no different than lower animals. Using the image below, indicate using the sliders where you would place the average member of each group to be in terms of their humanness:	Using the image below, indicate using the sliders where you would place the average member of each group to be in terms of their humanness: Using the image below, indicate using the sliders where you would place the average member of each group to be in terms of their humanness:	Psychologists have been interested in studying blatant forms of dehumanization in the public. The image and task below, known as the ascent of human scale, is one such measure. Using the image below, indicate using the sliders where you would place the average member of each group to be:

Table 1
Scale instructions by condition

Post Hoc Tests

Post Hoc Comparisons - group

		Mean Difference	SE	t	Cohen's d	p_{bonf}	
Canadians	Americans	3.940	1.394	2.827	0.236	0.074	
	Chinese	0.456	1.394	0.327	0.027	1.000	
	Europeans	-1.378	1.394	-0.989	-0.083	1.000	
	Arabs	3.405	1.394	2.443	0.204	0.225	
	Muslims	3.187	1.394	2.286	0.191	0.341	
Americans	Chinese	-3.484	1.394	-2.500	-0.209	0.192	
	Europeans	-5.318	1.394	-3.815	-0.319	0.002	**
	Arabs	-0.535	1.394	-0.384	-0.032	1.000	
	Muslims	-0.753	1.394	-0.540	-0.045	1.000	
Chinese	Europeans	-1.834	1.394	-1.316	-0.110	1.000	
	Arabs	2.949	1.394	2.116	0.177	0.525	
	Muslims	2.731	1.394	1.959	0.164	0.762	
Europeans	Arabs	4.783	1.394	3.431	0.287	0.010	**
	Muslims	4.565	1.394	3.275	0.274	0.017	*
Arabs	Muslims	-0.218	1.394	-0.156	-0.013	1.000	

Note. Results are averaged over the levels of: condition
Note. P-value adjusted for comparing a family of 15
* p < .05, ** p < .01

Table 2
Post-Hoc analysis of main effect on ascent groups

Spearman's Correlations

Variable		SDO	Can	Am	Chin	Eu	Ar	Mus
1. SDO	n	—						
	Spearman's rho	—						
	p-value	—						
2. Can	n	77	—					
	Spearman's rho	-0.303 **	—					
	p-value	0.007	—					
3. Am	n	77	84	—				
	Spearman's rho	-0.245 *	0.888 ***	—				
	p-value	0.032	< .001	—				
4. Chin	n	76	83	83	—			
	Spearman's rho	-0.318 **	0.841 ***	0.830 ***	—			
	p-value	0.005	< .001	< .001	—			
5. Eu	n	77	84	84	83	—		
	Spearman's rho	-0.310 **	0.936 ***	0.893 ***	0.883 ***	—		
	p-value	0.006	< .001	< .001	< .001	—		
6. Ar	n	76	83	83	83	83	—	
	Spearman's rho	-0.394 ***	0.861 ***	0.839 ***	0.757 ***	0.808 ***	—	
	p-value	< .001	< .001	< .001	< .001	< .001	—	
7. Mus	n	76	83	83	83	83	83	—
	Spearman's rho	-0.375 ***	0.897 ***	0.831 ***	0.766 ***	0.843 ***	0.971 ***	—
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	—

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

Table 3
Correlation Matrix of SDO scores with individual AOH ratings for each group

Chapter 3

Study 2 and 3: Salience Matters: Filler Groups on the ascent of human scale impact ratings for target groups.

3.1 OVERVIEW

Rationale. Across research using the AOH scale some studies elect to include "Filler Groups", additional social groups for participants to rate in order to mask the real groups researchers are interested in collecting dehumanizing sentiment for. However, no research has examined the necessity of filler groups, or how filler group choice can impact how participants rate other groups. **Specific aims.** The aim of studies two and three were to assess how filler group choice impacts how participants rate groups on the AOH scale. To accomplish this, we focused on group salience, the extent to which one group stands out amongst others. Specifically we aim to see if resondents rate a group higher or lower when it is made to stand out amongst other social groups on the AOH **Methods.** In study 2 180 of undergraduate students randomly allocated in one of three salience conditions; High, Medium, and Low, where an out-group of interest (Arabs) were made to stand out amongst other filler groups to be rated on the AOH. Included amongst the filler groups were Canadians, the in-group of participants in order to compute a score of relative dehumanization. In study three, 176 were recruited for a similar study only in this instance, the Canadian group was removed from the list of groups to be rated from the AOH **Results:** In study two we found no effect of group salience on AOH ratings for Arabs along with evidence of blatant dehumanization toward the group. In study three with the participant in-group label removed, salience did have an impact on AOH ratings for Arabs such that when Arabs stood out amongst other in-groups, they were rated lower on the AOH scale indicating dehumanization. Results suggest that some care is needed when selecting filler groups, especially when in-group labels are not present on the scale.

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3.2 Abstract

Researchers using the ascent of human scale (AOH) to study dehumanization typically include filler groups in addition to the main comparator groups, to hide the true intent of the study. However, there is little work examining the impact of filler group choice on dehumanization ratings between groups of interest. Across two studies (including one pre-registered study) we manipulated the salience of a target out-group by embedding it within lists of other groups. By comparing AOH ratings across three conditions in which the target out-group was either high salience, medium salience, or low salience, we were able to determine the effects of target out-group salience on dehumanization. In study 1, we included participants' in-group (Canadian) in the list, and in study 2, we did not include participants in-group in the list. Results from study 1 showed that group salience had no impact on AOH ratings for the out-group when the participant in-group was included in the list. However, in study 2, when participant in-group was removed from the list, ratings for the out-group in the high salience condition were significantly lower than both the medium and low salience conditions. Implications for both theoretical and methodological issues in investigations using the AOH scale are discussed.

3.3 Introduction

Within the psychological literature, dehumanization can be defined as the act of seeing others as less then human and denying them human faculties (Haslam, 2006; Haslam and Loughnan, 2014). Sadly, dehumanization persists across societies and is directed towards many social groups (Kteily & Landry 2022). Early work on the psychology of dehumanization was interested in blatant forms of the phenomena such as directly describing others as animals or vermin (Kelman, 1976) as such tactics were applied in the atrocities of World War II. However, as dehumanization

research moved into laboratory settings scholars focused on using indirect measures, with the general assumption being that study participants would not willingly express the extent to which they view other groups or individuals as less than human. For example, variations on the implicit association task have been used to measure the extent to which people associate out-groups with animals (Goff, Eberhardt, Williams, & Jackson, 2008). Other measures focus on the degree to which participants ascribe mental faculties to out-groups such as the capacity make purposeful action, or feel emotion (Waytz & Epley, 2012).

An influential and frequently used measure was derived from work in infrahumanization theory which posits that individuals are more willing to ascribe uniquely human emotions to their in-group in relation to an out-group (Leyens et al., 2000). Here participants rate the extent to which they feel their in-group as well as out-groups of interest are capable of feeling emotions argued to be unique to the human experience. Building off this Haslam (2006) proposed the dual model theory of dehumanization which argues that people can be animalistically as well as mechanistically dehumanized, likened more to either animals or machines. For this measure, participants rate the how much individuals or groups can embody specific traits argued to be unique to humans exclusively, or traits that both humans and animals can possess. The less participants rate others as not being capable of feeling uniquely human emotions or being capable of embodying uniquely human traits is argued to reflect a denial of a crucial component of humanity (Haslam and Loughnan, 2014; Kteily & Landry, 2022).

Recently work within social psychology has re-focused efforts to measure blatant forms of dehumanization. One such measure is the ascent of (Hu)man scale (AOH), formerly known as the "Ascent of Man Scale" introduced by Kteily, Bruneau, Waytz, & Cotterill (2015). In this scale participants are presented with the classic Ascent of Man image representing 5 pictures that show a

lower order primate on the left progressing to that of an upright human on the right. Participants rate various social groups on a slider scale from 0 (indicating least evolved) to 100 (most evolved) which corresponds to the Ascent of Man image. See Figure 1 for a depiction of the AOH scale. Results from various studies using the AOH scale show that blatant forms of dehumanization are more prevalent than previously assumed with results showing that participants are more than willing to rate social groups as less evolved than others, especially their in-group (Kteily et al, 2015; Bruneau, Kteily, & Laustsen, 2018). Studies have demonstrated that blatant dehumanization of this type is not something limited to racial or ethnic groups but can be directed towards a host of out groups such as people with obesity (Kersbergen & Robinson, 2019), individuals who are short in stature (Kunst, Kteily, Lotte Thomsen, Lotte Ansgaard Thomsen, & Thomsen, 2019), people on drugs such as heroin (Sumnall, Atkinson, Gage, Hamilton, & Montgomery, 2021), and persons who are homeless (Tausen, Charleson, & Fingerhut, 2021) to name a few.

Studies have also shown the utility of ascent dehumanization not only as a dependent variable, measuring how much out-groups are dehumanized, but also as a useful independent variable, especially when related to predicting attitudes and behaviors considered crucial within inter-group relations and conflict. One consistent finding has been that ascent dehumanization is related to social dominance orientation**,** the preference for group-based hierarchy (Pratto, Sidanius, Stallworth, & Malle, 1994)**.** The more individuals prefer group-based hierarchies and are in favor of their maintenance through overt violence of institutional norms, the greater they tend to dehumanize out-groups via the AOH scale (Kteily et al, 2015; Galang, Ku & Obhi, 2021; Bruneau & Kteily, 2017). Ascent dehumanization has also been found to be predictive of the support for the torture of terror suspects by Americans (Kteily et al, 2015), the acceptance of out-group collateral damage in open conflicts (Bruneau & Kteily, 2017), and the extent to which teachers will deny support towards students they dehumanize (Bruneau, Szekeres, Kteily, Tropp, & Kende, 2020). As such the AOH

scale has proven useful in allowing researchers to better understand blatant dehumanization, specifically how persistent it is as well as how damaging it can be to those on the receiving end of it.

While Kteily et al (2015) report rigorous work conducted in order to validate the scale, recent research has begun to investigate potential issues pertaining to how the scale is implemented in experiments. In a large sample, pre-registered study Izydorczak, Grzyb, & Dolinski (2022) examined multiple aspects of the AOH scale and variations to how it can be administered. Specifically, the researchers sought to determine if there would be differences in results when individual groups were presented to participants one at a time or all together, the latter being the more common approach used in studies with the AOH scale. Researchers also sought to determine if a potential anchoring effect was present depending on the initial start point for the slider, traditionally placed at the far left of the scale, and if presenting the scale before or after other measures impacted ratings (Izydorczak et al, 2022). Results from their study indicate these issues have no impact on overall ratings participants gave, further adding credence to the robustness of the AOH scale in measuring blatant dehumanization Izydorczak et al. (2022).

In previous research, authors have included separate validation studies of the scale within their larger research projects. For example, Markowitz & Slovic (2021) sought to examine how dehumanization scores via the AOH scale would be different when adopting a forced choice task as opposed to a slider scale. In this experiment participants in the forced choice condition had to select one of the five discreet pictures on the Ascent of Man image in order to indicate where they believed the out-group (in that study – Mexican immigrants) to be in terms of evolvedness. This was in contrast to the usual slider scale condition where a participant could place their ranking in between images to varying degrees (Markowitz & Slovic, 2021). Results from that study show lower rates of dehumanization in the forced choice condition compared to the traditional slider

scale condition (Markowitz & Slovic, 2021). Research has shown that reaction times and click ratios vary between forced choice and slider scale options on surveys (Funke, Reips, & Thomas, 2011). It would appear that requiring participants to make a distinct choice as to where groups are in the hierarchy of images on the ascent scale inhibits the willingness to dehumanize.

Typically, the AOH scale is presented with an instruction prompt that begins with the claim that some groups are more evolved than others. As such research has also sought to determine the extent to which the scale's instructions have an impact on ratings. In their initial article presenting the scale Kteily et al. (2015) conducted a validation study, comparing AOH ratings when the instructions were present or omitted. Results indicate that the removal of the text instructions had no impact on scale results. Other studies have sought to address how mentions of evolution in the instructions affect ratings. In two separate studies Smith et al. (2022) and Jardina & Piston (2021) conducted validation studies where created conditions in which participants took the AOH scale but without language specifying evolution in the instructions. Results from both studies suggest that removing evolutionary charged language does not impact how participants rate groups on the scale when compared to its traditional version (Smith et al, 2022; Jardina & Piston, 2021).

It is also common for many studies using the AOH scale to include additional groups to be rated, with the intention of concealing the comparisons of interest from study participants. These additional groups meant to hide study intentions have been dubbed "Filler Groups" in the literature (Bruneau, Szekeres, Kteily, Tropp, & Kende ,2020). At the time of writing this article, a Google scholar search using the terms "Ascent of Man / Human" and "Filler Groups, show 10 studies that employ them, see Supplementary Materials for a full list.

Some studies explicitly mention the use of filler groups in order to hide the true intention of the study to participants (Kersbergen & Robinson, 2019; Sumnall et al, 2021). Others mention their

use of filler groups but make no explicit mention of which ones they've used (Landry, Ihm, & Schooler, 2022). However, not every paper that uses the AOH scale applies this method, with some articles simply presenting the groups of interest and no addition of filler groups (Cassese, 2021). As such, it would appear that the use of filler groups is not a requirement for using the AOH scale. In fact, Kteily et al. (2015) first used many groups on the scale in a catch all manner, to see which demographic groups would be dehumanized.

Curiously, the impact of filler groups, and more specifically filler group choice has been one aspect of the scale not investigated to our knowledge. One area of concern may lie in salience, the extent to which a group stands out, when amongst others on the scale. This is a potential concern as traditionally, the AOH scale is administered in a way in which groups are presented all at once to be rated **(**Izydorczak et al, 2022**).** Research in psychology has shown how salience impacts attention such that the more something stands out, the greater attention it receives (Itti & Kock, 2000 ;Wolfe, 1994). Within inter-group relations, research has demonstrated that demographic salience such as race and gender can impact how others are perceived and treated. Identity salience can have adverse effects with research showing the more an individual stands out the more they can be subjected to prejudice in social settings such as hiring (Derous, Pepermans, & Ryan, 2017). This is of direct concern to the AOH scale as much work has been done to determine blatant dehumanization of marginalized groups such as Muslims (Bruneau, Kteily & Laustsen, 2018**)** and Roma **(**Bruneau et al, 2020**).**

Ultimately the use of filler groups, and which ones to include, appear to depend on the decisions of individual research teams. Ideally, a standardized process of when or when not to use filler groups, as well as how similar or dissimilar they need to be from the target groups of interest, would greatly improve future studies interested in using the scale.

Purpose of this study

Given the lack of a standardized process for use of filler groups in studies using the AOH scale, and the gap in the literature assessing how filler group choice can affect results, this study sought to investigate filler group selection and its impact on AOH ratings. To do this we focused on salience, the extent to which something stands out, as a first step in examining filler group choice.

To accomplish this, we sought to investigate ascent dehumanization of Arabs, a group perceived to be of low status within a Western context, and that has been shown to be blatantly dehumanized by Western participants (Kteily & Bruneau, 2017; Naber, 2000). In two studies, the first pre-registered, we presented participants with the AOH scale in which the group "Arabs" was made to stand out in comparison to other groups at varying levels. This was done by including similarly low- status groups who have also been subject to dehumanization, to create three salience conditions, high, low, and medium salience.

3.4 Study 1a

3.4.1 Methods

Pre-registration

Sample size justification as well analysis plan was pre-registered with a link to our plan here: https://aspredicted.org/147_QZL

Sample Size

A power analysis conducted using GPower revealed a minimum of 161 participants required to detect a medium effect size (F = .25) for a one-way ANOVA model. As such we aimed for small to medium oversampling.

Participants

217 undergraduate McMaster University students were recruited for this study. We included an attention check during the administration of the 7th version of the social dominance orientation scale (SDO) (Ho et al, 2015). Those who either failed the attention check or did not confirm their consent in using their data post-debrief were excluded from the final data set. This left us with a total of 180 participants (Mean age = 19.0, SD = 3.3) 77% women.

Procedure

Participants were sent a link to an online study where they first read a letter of information and signed a consent form.

Participants were randomly sent to one of the three salience groups; High Salience (HS), Medium Salience (MS), and Low Salience (LS). They were presented with the AOH

scale with seven groups presented all together, in random order. In the high salience (HS) condition, our target out-group, Arabs was meant to stand out amongst the other groups. In the medium salience (MS) condition we included similar groups known to experience prejudice and discrimination, balancing for a 50 / 50 split in terms of similarity/ dissimilarity. To accomplish this we focused on including various immigrant groups known to experience prejudice and discrimination in Western countries (Esses, 2021). Finally in our Low Salience (LS) group, all

groups presented were those known to experience prejudice and discrimination so Arabs would not stand out. After providing their ratings on the AOH scale, participants were then asked if any of the groups presented stood out to them amongst the other groups and to specify which ones. They then took the social dominance orientation scale (Ho et al, 2015). followed by a series of demographic questions including age, gender, and political orientation on a scale from very liberal to very conservative.

Design and Analysis

Our primary goal for this study was to examine the difference in relative dehumanization, the difference between how participants rated their in-group, Canadians, and Arabs across the three salience conditions. In addition, we were also interested in the difference in raw AOH scores for Arabs across the three salience conditions. Studies using the AOH scale typically employ both measures as dependent variables as well as predictor variables (Kteily et al, 2015). We conducted two one-way analysis of variance (ANOVA) models, one for each research question. All data was analyzed using R Version 4.01

3.4.2 Results

Relative Dehumanization

We first examined group salience on relative dehumanization, calculated by computing the difference between AOH ratings for the in-group (Canadians) minus the out-group (Arabs). Results from a one-way ANOVA revealed no effect of salience condition on *relative*

dehumanization F(2, 175) = 1.60, p = .204; Eta2 = 0.02, 95% CI [0.00, 1.00]. Examination of our model revealed violations in homogeneity of variance via Bartlett's test ($p < .001$) as well as violations with regard to normality of model residuals by way of Shapiro's test ($p < .001$). To address these violated assumptions in our main model we conducted a Kruskal Wallis rank sum test on relative dehumanization across salience condition. Results revealed a non-significant effect of salience condition on relative dehumanization H(2) = 3.39, p = .18, in line with our parametric analysis.

Out-group ratings across salience conditions

A one-way ANOVA on ratings for Arabs on the AOH scale also revealed no significant effect of salience condition F(2, 176) = 1.71, p = 0.183; Eta2 = 0.02, 95% CI [0.00, 1.00].

As in our model for relative dehumanization we detected violations for homogeneity of variance ($p < .001$), as well as normality ($p < .001$) by way of Bartlett's and Shapiro's test respectively. We again conducted Kruskal Wallis rank sum test to address these violations. Results revealed no significant effect of salience condition on AOH scores for Arabs H(2) = 1.04, p = .59.

Exploratory analysis

In the interest of measuring the extent of dehumanization towards Arabs in our study we also conducted a 3 x 2 Mixed ANOVA with salience condition as a between subjects factor, and AOH ratings for Canadians and Arabs as a within subject factor, classified as 'group'. Results revealed a main effect of group F(1, 175) = 11.56, $p < .001$, $\eta^2 = .010$ with Arabs rated significantly lower than Canadians, indicating dehumanization towards Arabs. There was no main effect of salience condition (p = .48), nor an interaction effect between salience condition and ascent group (p =

.24).

See 3 for a visualization of these results.

Study 1a Discussion

In this study we presented participants with the AOH scale and manipulated the extent to which an out-group, Arabs, stood out amongst other filler groups. Results from our study indicate that group salience does not have an impact on relative dehumanization, the difference in AOH scores for the out-group minus the in-group. In addition, there was no difference in raw AOH scores for Arabs across the three conditions. These results are in line with previous research examining the methodological aspects of the AOH scale suggesting that it is robust and not subject to change under minor but non-trivial changes to administration protocols. We did see a significant difference in how our Canadian participants rated themselves compared to how they rated Arabs, indicating dehumanization towards Arabs in our sample. As we measured relative dehumanization for our analysis it is possible that the inclusion of Canadian as a label on the AOH scale compromised our low salience condition. In that condition, whilst Arabs was not meant to stand out, Canadians could potentially stand out which may have affected our results. Another possibility is that having "Canadians" indicated in the list of groups cued people to well-known ideas about prejudice and bias, as well as the fact that Canada is known for its successful multiculturalism, thus causing them to provide more socially desirable ratings. We thus decided to run an additional study to further corroborate the apparent lack of a salience effect by running a second study in which the in-group was removed from the AOH scale in all conditions.

3.5 Study 1b

3.5.1 Methods

Sample Size

As our primary question and analysis plan remains the same all except for questions pertaining to relative dehumanization we elected not to pre-register this study. As such we aimed for the same minimum number of participants, 161, in order to be powered for a moderate effect size (F = .25) for a One-way ANOVA.

Participants

We recruited 213 undergraduate students from McMaster University. Similar exclusion criteria from study 1a remained leaving us with a final sample of 176 participants (Mean age = 18.3, SD = 1.7, 81.8% Female).

Procedure

Procedure for this study was identical to that of study 1a with the exception thatin each salience condition, 'Canadians' were removed from all groups.

Design and Analysis

For study 1b our main analysis was a one-way ANOVA on ascent of human ratings for Arabs

3.5.2 Results

Results from the one-way ANOVA revealed a significant main effect of salience condition on ascent ratings for Arabs $F(2, 172) = 6.58$, $p = 0.002$; Eta2 = 0.07, 95% CI [0.02, 1.00]. Post-hoc analysis with bonferonni corrections revealed that ratings for Arabs in the High Salience condition were significantly lower in both the Medium Salience condition ($p = .02$) as well as the Low Salience condition ($p = .002$).

As in study 1a homogeneity of variance as assessed via Barlett's tests were violated ($p < .001$) as well as tests for normality of model residuals using Shapiro's test ($p < .001$). To address this we computed the non-parametric Kruskal Wallis rank sum test. This revealed a main effect of salience condition on ascent ratings for Arabs $H(2) = 11.88$, $p = < .01$. We broke down this effect using the Dunn Test for a non-parametric post-hoc analysis. Results show that ratings in the High Salience condition are lower in Low Salience condition ($p < .01$) as well as the Medium Salience condition ($p = .02$).

See Figure 4 for the visualization of the main results from this study.

Study 1b Discussion

Study 1b sought to address concerns over our salience condition in study 1a where even in our low salience condition, the in-group of our participants, Canadians, stood out. We thus conducted a version of our study in which the in-group labels were removed from the AOH scale. Results show that when Arabs stand out amongst other filler groups, participants rate them significantly lower compared to both medium and low salience conditions. As such it would appear that the

inclusion of our in-group label potentially confounded our salience manipulation and that when true salience is present, a group that stands out is subject to greater ascent dehumanization. Many studies using the ascent of human scale tend to include an in-group in order to calculate relative dehumanization, a crucial measure in various studies (Kteily et al, 2015) and hence the reason for its inclusion in study 1a.

Results from this study suggest that when the in-group of participants is not included in the scale, some care may be needed in deciding which filler groups are presented, especially when groups will be presented all at once, a common practice when using the scale.

3.6 General Discussion

Across two studies we investigated how the choice of filler groups can influence results on the AOH scale. Specifically, we manipulated the salience of a target group of interest, Arabs, in three conditions in which they stood out amongst other filler groups to varying degrees. In study1a, we saw no effect of group salience on relative dehumanization, the difference in ratings between the in-group of our participants (Canadians) and Arabs. We also saw no difference in AOH scores for Arabs across each of our salience conditions. This would indicate that filler group choice has no impact on AOH ratings for comparisons of interest. However, in study1b we omitted the in-group of our participants from the scale. Results found that when Arabs stood out amongst the other filler groups, they were rated significantly lower than in conditions in which they stood out to a moderate degree or did not stand out at all. As such, when participants were not also rating their in-group along with others, salience appears to have impacted how they rate an out-group.

As argued by infrahumanzation theory (Haslam & Loughnan, 2014), people will attribute more human qualities, such as uniquely human emotions to their in-group compared to an out-group Haslam (2006). It is possible that salience is not as strong of a factor when participants can also rate their in-group on the AOH scale. Perceptually it may be that all other groups stand out as one homogenous other from the in-group. Another possibility is that we confounded our experimental manipulation in study1a by having Canadians in our low salience condition. There, Canadians would have stood out amongst the other filler groups, compromising the intent of the condition. The decision to include Canadians as a group to be related in study1a was out of necessity as studies routinely include the in-group of participants on the AOH scale in order to compute measures of relative dehumanization. We also found evidence of ascent dehumanization towards Arabs by our Canadian participants adding to the benefit of its inclusion in our study.

Despite these necessities, we corrected this potential confound in study 1b and found a salience effect on AOH ratings when the in-group label was absent from the scale. Results show that when Arabs stand out amongst filler groups in the high salience condition, they are rated significantly lower compared to the medium and low salience conditions. In theory we should expect dehumanization ratings to be stable. Our experimental conditions merely placed different groups around our out-group of interest. If participants truly dehumanize this out-group the presence or absence of other groups should not change that sentiment. This may call into question what the AOH scale is tapping into when participants give ratings on it. One possibility is that participants in our study were simply placing Arabs as to where they believe they were in terms of social and political advancement. As prior work has shown it is possible that respondents on the scale have their own understandings of what the AOH scale is meant to gauge, ones that are contrary to what researchers see it measuring (Markowitz & Slovic, 2021; Bruneau, Kteily, & Laustsen, 2018).

From a methodological standpoint this brings some concerns into how researchers administer the

AOH scale. While many studies using the scale do include some in-group / out-group comparison of interest, some do not. Thus, issues of salience should be noted in future studies to address these concerns, especially when researchers are interested in getting ratings for many groups that vary in status. To our knowledge this is now the second study to show that changes in the AOH scale's administration can have an impact on results with Markowitz & Slovic (2021) showing that dehumanization is lower when participants are forced to select a distinct image on the ascent of man picture as opposed to a slider scale that affords more flexibility. With recent work by Izydorczak et al. (2022) being one of the first studies to exclusively study the methodological aspects of the scale, this study adds to the need for more research on the AOH scale's implementation so that researchers can be equipped with a standardized approach to administer it without the worry of unintentionally influencing results. As discussed, many studies use the AOH scale in such a manner that groups tend to be presented for ratings all at once. Is salience an issue when groups are presented one at a time? As researchers have attempted to include similar groups to hide the true comparison of interest, results from our study show this approach is useful but may need more refinement. Future research should investigate standardizing a process upon which filler groups, meant to mask researcher comparisons of interest are devised and included.

Alternatively, our results may imply that dehumanization holds a flexible nature, one that can be modulated when other out-groups are present. When other groups of varying status are present, those who stand out the most may be subject to dehumanization especially if those sentiments were already present. Prior research demonstrates that marginalized groups such as women and minorities can be subjected to harsher scrutiny and hostility in workplace environments (Jackson, Thoits, & Taylor, 1995; Ghosh & Barber, 2021). If dehumanization can be elicited by the presence of out-groups under certain conditions, could such hostilities be motivated by dehumanization? Results have shown dehumanization and prejudice to be distinct psychological constructs (Bruneau, Jacoby, Kteily & Saxe, 2018). However, if identity salience does have an impact on dehumanization, future research should incorporate

dehumanization research into issues of inter-group relations especially in workplace scenarios.

Across two studies we examined how out-group salience may impact ratings on the AOH scale when filler groups are used. While more work is needed to tease apart these issues, results show that researchers may want to take care in how groups are added to the scale when conducting experiments. In addition, research interested in inter-group relations in various contexts may benefit from incorporating psychological work on blatant dehumanization.

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Table 1

Salience Conditions with accompanying 'filler groups'. All groups presented inrandom order

High Salience	Medium Salience	Low Salience
Germans	Australians	Indigenous
Swedish	Somalians	Somalians
Australians	Arabs	Afghans
Canadians	New Zealanders	Syrians
Arabs	Afghans	Arabs
British	Canadians	Canadians
New Zealanders	British	Chinese

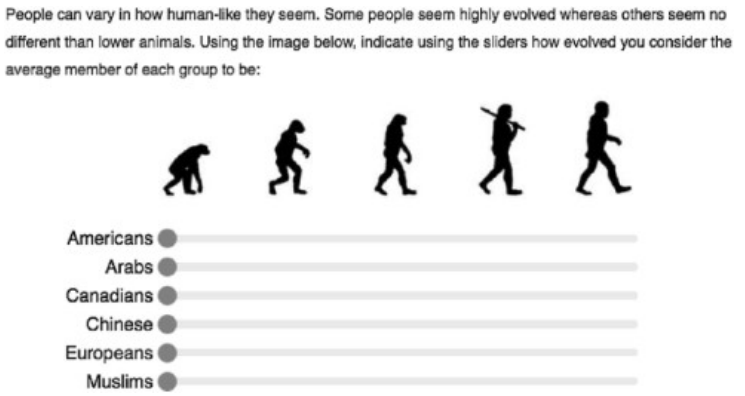

Figure 1 . Ascent of Human Scale as introduced in Kteily et al,(2015).

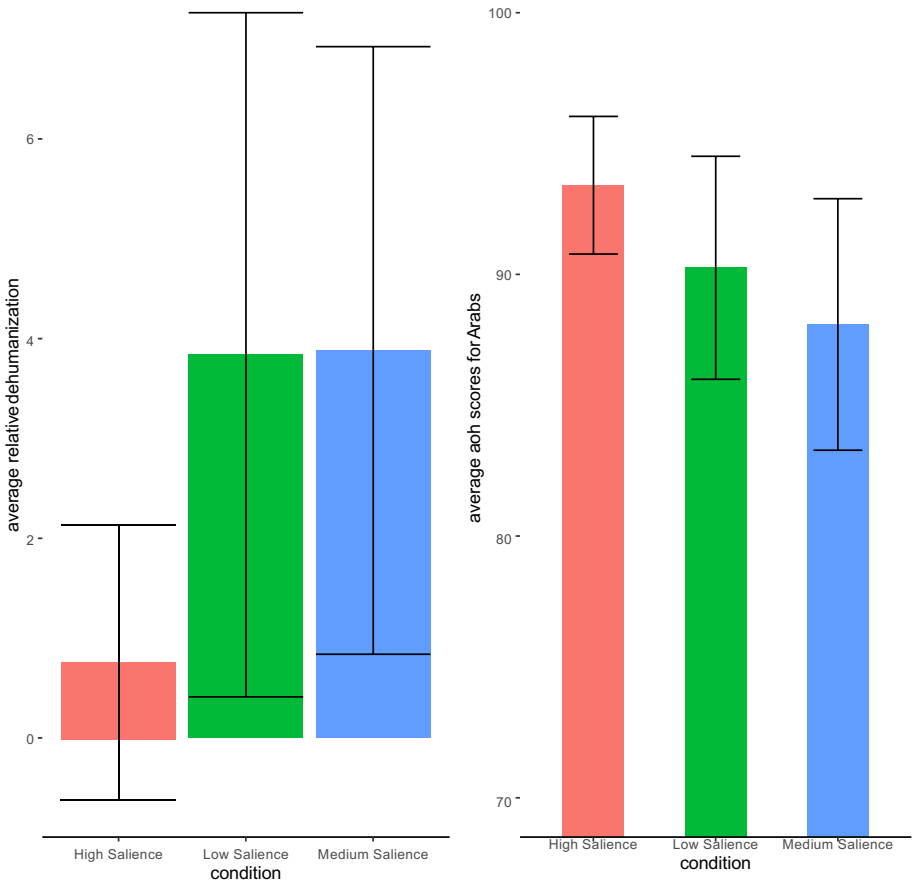

Figure 2. Study 1a - Relative Dehumanization between Canadians and Arabs (Left) Ascent of Human ratings for Arabs (Right). Error Bars represent 95% Confidence Intervals

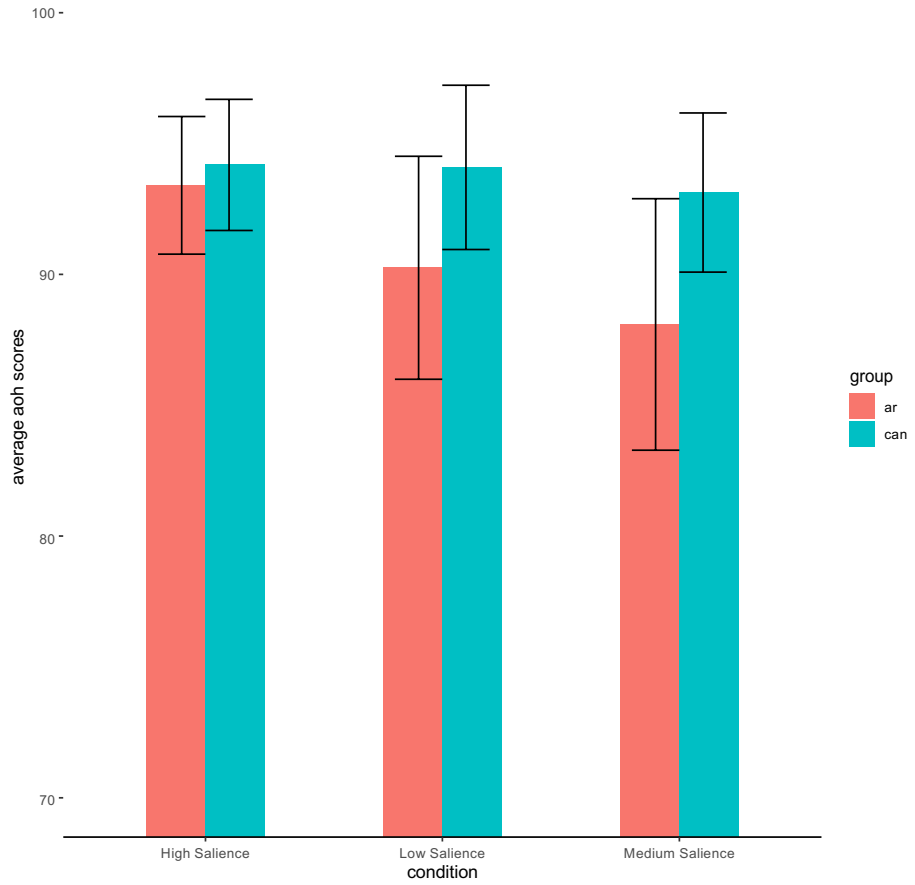

Figure 3 . Study 1a - Plot of Ascent of Human ratings for Canadians and Arabs across conditions. Error Bars represent 95% Confidence Intervals

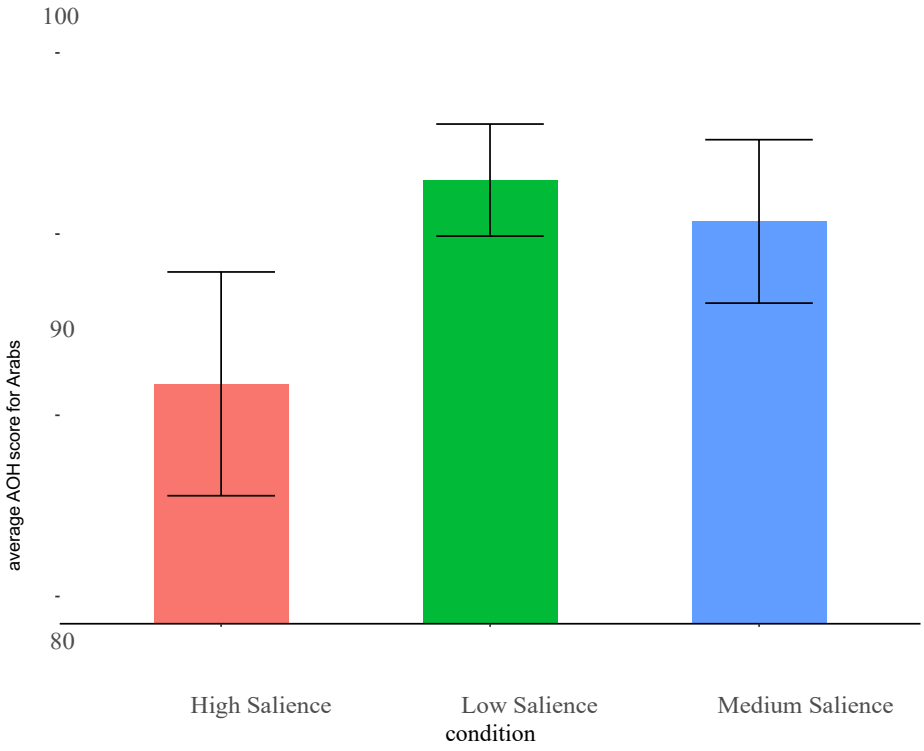

Figure 4. Study 1b - Ascent of Human ratings for Arabs. Error Bars represent 95% Confidence Intervals

Chapter 4

Study 4 and 5: Social Power does not modulate Blatant Dehumanization: Evidence from the Ascent of Human Scale.

4.1 OVERVIEW

Rationale. Prior research has established a link between social power, the ability to control the behaviors of others, and dehumanization. However, this link has been established with indirect measures of dehumanization. In addition, recent challenges to the validity of popular indirect measures calls for a return to this research question utilizing the AOH scale given its strengths at capturing blatant dehumanization. **Specific aims.** The aim of studies four and five are to assess the relationship between social power and blatant dehumanization by way of experimental and correlational approaches. **Methods.** In study four 146 Canadians recruited from Prolific were randomly allocated in one of three social power conditions; High, Low, and Neutral, where they wrote about personal experiences with power then gave ratings for 15 social groups on the AOH scale. In study five 83 participants took a measure of personal sense of power and gave AOH ratings for the 15 groups used in study four. **Results:** Results from study four suggest that inducing varying states of social power does not impact how respondents rate others on the AOH scale. Dehumanization was found with certain groups placed higher than others on the AOH. In study five, personal power was not correlated with any of the AOH ratings for the 15 social groups, nor a composite measure of dehumanization. As in study four, evidence of ascent dehumanization was found with some groups placed higher than others on the AOH. Broader results suggest that social power is not related to blatant forms of dehumanization warranting further research into the previously established links between power and dehumanization.

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Social Power does not modulate blatant dehumanization: Evidence from the Ascent of Human Scale

4.2 Abstract

Prior research has demonstrated a link between social power and dehumanization, suggesting that those higher in power view others as less than human compared to those lower in power. However, such studies have used indirect measures of dehumanization and it is unclear whether similar results would be found with more blatant measures of dehumanization. Across two pre-registered studies we sought to examine the relationship between social power and blatant dehumanization, using the Ascent of Human (AOH) Scale. In study 1, social power was experimentally manipulated with an episodic recall task and participants gave ascent ratings for 15 social groups. In study 2, participants' personal sense of power was correlated with ascent ratings for the same social groups used in study 1. Contrary to our main hypotheses, in both studies social power was not related to blatant dehumanization. Results from both studies are discussed within the wider context of the literature on dehumanization.

4.3 Introduction

Dehumanization, broadly defined within the psychological literature, is the act of denying human-like qualities towards individuals as well as social groups (Haslam, 2006; Haslam & Loughnan, 2014), remains a prevalent issue within society (Kteily & Landry, 2022). In addition, dehumanization has been linked to hostile behaviors from subtle forms of discrimination (Bruneau, Szekeres, Kteily, Tropp, & Kende, 2020) to more overt forms of prejudice and support for violence towards out-groups (Bruneau & Kteily, 2017; Viki, Osgood, & Phillips, 2013).

Prior research has demonstrated that those high in social power, the ability to control the thoughts, behaviors and outcomes of others (Brauer & Bourhis, 2006; Keltner, Gruenfeld, & Anderson, 2003; Fiske & Berdahl, 2007.; Galinsky, Gruenfeld, & Magee, 2003).), dehumanize out-groups more, relative to those lower in social power. If dehumanization is related to hostile behaviors towards outgroups then this link is concerning, indicating that those higher in power can cause more harm to dehumanized targets. However, prior research has primarily relied on indirect measures of dehumanization, assessing how study participants view outgroups on various emotional and personality dimensions (Leyens, Paladino, Rodriguez-Torres, Vaes, Demoulin, Rodríguez-Pérez, & Gaunt, 2000; Haslam & Loughnan, 2014). Concerningly, some of these measures are currently under scrutiny in terms of their validity (Enock, Tipper, and Over, 2021). However, recent research has provided evidence that more blatant forms of dehumanization can be measured in laboratory settings (Kteily, Bruneau, Waytz, & Cotterill, 2015). As such, assessing the link between social power and blatant dehumanization is critical if

this relationship is to be understood fully.

Power and Dehumanization

Given the historical as well as contemporary relationship between dehumanization and aggression and violence (Smith, 2011; Smith, 2021), researchers have investigated the link between power and dehumanization. Psychologists in particular have examined the effect that social power has on seeing others as well as the self as less than human. Power exists in every facet of life and those with more social power can impact the lives of those with less social power (Brauer & Bourhis, 2006; Galinsky, Gruenfeld, & Magee, 2003). Research has shown that those higher in social power pay less attention to those without power (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Guinote, 2017) and are able to hold their attention more on achieving task related goals over the concerns of individuals (Hadar, Luria, & Liberman, 2020). Given the ability of those in power to affect the lives of the powerless, and the negative outcomes related towards dehumanizing attitudes, researchers have argued that it is important to understand the relationship between power and dehumanization.

Over a series of three experiments Lammers & Stapel (2011)[1] found a relationship between social power and dehumanization suggesting that those higher in social power

[1] The authors take this time to acknowledge the existence of scientific misconduct from the second author of this reference Diederik Stapel. At the time of writing this article, the cited work has not been retracted and is still cited in reference to it's findings. In addition, we include this article is the discussion on power and dehumanization as it is one of the first to report a link between the two constructs and is thus relevant to the broader discussion for this article.

dehumanized out-groups more than those lower in social power. In their first study, participants' personal sense of power, was shown to be positively correlated with select items from a measure of dehumanization taken from Haslam (2006). For this measure, participants rated a fictitious out-group on 10 traits argued to be unique to the human experience such as self-control, maturity, and rationality. Denying these traits to others is argued to be a form of animalistic dehumanization, equating individuals more with animals than humans. In study 2, participants' feelings of power were experimentally manipulated by way of a power priming episodic recall task (Galinsky et al., 2003) in which respondents wrote about powerful or non-powerful personal experiences. Those in the high power condition rated a fictitious out-group as being less likely to possess the same uniquely human traits used in study 1 compared to the low power and control conditions. Finally in study 3, participants were tasked with making mock decisions in a health care context. Those in high power conditions (assigned to the role of a surgeon) dehumanized hypothetical patients more than participants ascribed to the lower power condition (nurse) when making decisions about treatment options for patients. Here, dehumanization was measured by taking 6 items from Haslam (2006) where patients were rated on coldness, passivity, lack of responsiveness, superficiality, depth, and sensitivity. Denial of traits such as these is argued to be a form of mechanistic dehumanization where individuals are equated more with automata or machines, than humans (Haslam, 2006). Overall Lammers & Stapel (2011) argue that dehumanization allows the powerful to make difficult decisions that can impact individuals, linking prior research of the ability of power holders to efficiently accomplish tasks without distractions or external influences.

Across two studies Gwinn, Judd, and Park (2013) found that participants in a high-power position; playing the role of manager in a dyad hiring task (study 1) and a competitive game (study 2) attributed less uniquely human traits to the low power participant in the dyad. Here, researchers use Haslam and Bain's (2007) measure of dehumanization which includes positive and negative uniquely human traits (e.g. ambitious, insecure) to control for the valence of traits inidivuals or groups can be rated on. Results show that regardless of the valence of the traits, high power members of the dyad animalistically dehumanized their low power partners, rating them as having less uniquely human traits. Extending dehumanization beyond the realm of external targets, Yang, Jin, He, Fan, & Zhu (2015) found that inducing feelings of powerlessness by way of the episodic recall task (Galinsky et al, 2003) in study 1, or being in a low power role in a dyad in studies 2 and 3, in participants lead them to view themselves as less human. Here low power participants ascribed less uniquely human traits to themselves compared to higher power individuals. Measures of dehumanization for these studies include items taken from Haslam's (2006) original measure as well as Bastian & Haslam (2010) which also includes positive and negative uniquely human traits. These results are of particular interest as research has demonstrated a bi-directional relationship between self-dehumanization and anti-social behaviors (Kouchaki, Dobson, Waytz, & Kteily, 2018).

However, across most of this research, dehumanization, whether towards others or the self has been measured in indirect ways, specifically tasks in which study participants are asked to rate outgroups as having the capacity to experience certain emotions or embody certain traits. Measures such as these have their strengths but may have potential drawbacks.

Indirect measures

Historically psychologists have measured dehumanization in laboratory studies in indirect ways, with the assumption that study participants would not openly confess the extent to which they view others as less than human (Kteily, Bruneau, Waytz, & Cotterill, 2015). Infrahumanization theory (Haslam & Loughnan, 2014) argues that individuals ascribe more secondary human emotions to the in-group in comparison to the out-group (Leyens et al., 2000). Secondary emotions are those which are argued to be distinct to human beings such as shame, resentment, love, hope, disappointment (Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003). In contrast primary emotions are those related not only to humans but animals as well such as anger, pain, pleasure, surprise, fear, excitement (Vaes et al., 2003). Research using this framework has examined the extent to which people ascribe secondary and primary emotions to out-groups (Leyens et al., 2000).

Building off Infrahumanization theory Haslam (2006) proposed the dual model theory of dehumanization which posits that individuals can be mechanistically as well as animalistically dehumanized. The former in which traits more akin to machine-like operations are more heavily ascribed to individuals or groups whereas in the latter, more animalistic traits are ascribed (Haslam, 2006). In both instances mechanistic and animalistic traits are ascribed in greater proportion over uniquely human traits (Haslam, Bain, Douge, Lee, & Bastian, 2005). Dehumanization scholars are however not limited to these two approaches as many measures

have been developed to tap into subtle as well as more overt forms of dehumanization (for a full list see Kteily &Landry (2022).

Criticisms of popular indirect measures

Indirect measures such as infrahumanization, the dual model, and others have proven useful in revealing the extent to which various groups are dehumanized by others (Kteily & Landry, 2022). In addition, measures such as the dual model bring the added advantage of allowing researchers to know which dimensions of humanness participants are denying to out-groups (Izydorczak, Grzyb, & Dolinski, 2022). However, recent research has begun to challenge the validity of some of these measures. Enock, Tipper, and Over (2021) demonstrate that previous work that seemingly controlled for valence of uniquely human emotions is in question. Thus it may be the case that participants are not ascribing less uniquely human emotions to an out-group, but ascribing more negative traits overall to out-groups. In a second paper Enock, Flavell, Tipper, and Over (2021) raise similar concerns when looking at trait attribution, with evidence challenging that notion that uniquely human traits are denied to out-groups, a central tenet of the dual model theory of dehumanization. Thus, to further examine the link between power and dehumanization it is important to see if such effects hold with different measures of dehumanization.

A more direct measure

More recently, scholars have been interested in examining blatant forms of dehumanization in contrast to the various indirect measures used in dehumanization research.

Kteily et al. (2015) introduced the ascent of human (AOH) scale, in which participants are presented with the popular but inaccurate image of evolutionary progress. They are asked to place where they feel the average member of selected groups to be on that image on a scale from 0 indicating least evolved to 100 meaning most evolved and aligning with the image of an upright human. Results show that everyday individuals are more than willing to rank members from other groups below the fully evolved image. As an example, Kteily et al. (2015) shows that over the course of the former U.S. President Donald Trump's presidential campaign, blatant dehumanization of Muslims increased as Trump's rhetoric became more mainstream. Studies of Israelis and Palestinians have shown that both groups dehumanize the other with scores on the AOH scale predicting willingness to accept collateral damage and death from the other side in open conflict (Bruneau & Kteily, 2017). This is of particular interest, showcasing how ascent dehumanization serves not only as a dependent variable but a useful predictor variable for behaviors tied to intergroup relations (Bruneau et al., 2020; Kteily et al., 2015). Studies also show other social group such as obese individuals (Kersbergen, & Robinson, 2019) shorter people (Kunst, Kteily, & Thomsen, 2019) and individuals addicted to drugs such as heroin (Sumnall, Atkinson, Gage, Hamilton, & Montgomery, 2021) to name a few, are also rated lower on the ascent of human scale relative to the in-group of study participants. Taken together, results from studies such as these show the ability of the AOH scale to capture dehumanizing sentiment in laboratory settings and during sociopolitical events.

Current study

Prior work has shown a link between dehumanization and social power such that those higher in power tend to dehumanize more while those without power are susceptible to self-dehumanization, leading to maladaptive behaviors for individual goals. However, given the recent challenges to the measures used to capture subtle dehumanization, the stage is set to examine how power is related to blatant forms of dehumanization, principally on one of the most popular measures used to gauge blatant dehumanization, the Ascent of Human scale.

To our knowledge no such study has examined the impact of power on ascent dehumanization in experimental conditions and thus we attempt to address this gap by examining how social power modulates ascent dehumanization. To accomplish this we apply an experimental approach (study 1) ,inducing various states of social power to see its effect on ascent dehumanization. We also employ a correlational approach (study 2) examining the relationship between individuals' personal sense of power and ascent dehumanization.

4.4 Study 1

4.4.1 Methods

Pre-registration

Pre-registration of our main hypothesis as well as sample size and analysis plan can be found here: https://aspredicted.org/L8G_P49

Sample size determination

174 participants are required to detect a small effect, partial eta squared of .01 at 80% power. Sample size was calculated using GPower Version 3.1.

Episodic Recall Task

To experimentally induce varying states of social power we use the episodic recall task first introduced by (Galinsky et al., 2003). Participants are randomly allocated to one of three conditions: high social power, low social power, or a neutral control condition. In the high social power condition participants are tasked with writing about a time in which they held power over someone whereas in the low social power condition they are asked to write about a time in which someone held power over them. In a control condition participants are asked to write about what they did the previous day. The episodic recall task has been shown to be a valid measure of inducing psychological states of social power (Guinote, 2017) For our purposes it has also shown effectiveness at modulating dehumanization towards others (Gwinn et al., 2013).

Blatant Dehumanization Scale

To measure blatant dehumanization, we used the Ascent of Human scale Kteily et al. (2015). We elected to build off of the work of Galang, Ku, & Obhi (2021) who grounded their research within a Canadian context, finding which groups White Canadians were willing to dehumanize on the AOH scale. As we recruited participants from Canada we adhere to the comparison groups used in Galang et al. (2021) as these provide a framework for examining blatant forms of dehumanization in this culturally specific context. We thus used the 9 ethnic groups: Whites, Blacks, Arabs, Chinese, Filipinos, South Asians, Koreans, Japanese, Indigenous

as well as the 6 religious groups: Christians, Muslims, Sikhs, Jewish, Hindus, Buddhists, for a total of 15 groups to be used on the AOH scale.

Participants

174 White Canadian participants were recruited via Prolific (with White ethnicity and Canadian Nationality the only filter on our recruitment screener). During the demographics questionnaire administered at the end of the experiment participants were presented with an attention check prompting them to select a specific response. Those who failed to select the correct prompted response were excluded. During the data collection phase an error in the online program forced us to remove participants who were exposed to more than one essay task. Following our exclusion criteria as well as the participants affected by the study error this left us with a final sample size of 146 participants (Mean age = 36.84 , SD = 13.38, 47% Male).

Procedure

Participants were invited on Prolific to take part in the study using a web link. After reading a letter of information and signing a consent form participants were randomly assigned to one of three conditions: high social power, low social power, or control. Participants were given 10 minutes to write in response to their conditions essay prompt such that they would be unable to proceed until 10 minutes had passed on the survey. Participants were then presented with the ascent of human scale in which they gave ratings for the 15 groups. In administering the ascent of man scale participants were presented with 15 separate trials, each in which one group was presented along with the ascent image and the slider. Participants then completed the social

dominance orientation scale, SDO version 7, (Ho et al., 2015) followed by demographic questions such as gender, age, and whether they belonged to any of the groups they rated, then debriefed. The study was approved by the McMaster Research Ethics Board.

Design and Analysis

To investigate the interaction of social power on ascent of human ratings our study took the form of a 3x15 Mixed design with social power condition as the between subjects' factor and group as the within subjects factor.

4.4.2 Results

Main results

As our data violated assumptions of Sphericity we present Greenhouse Geiser corrections for our main model. Pertaining to our primary hypothesis there was no interaction effect between social power and ascent ratings for the 15 groups $F(10.29, 694.83) = .91$, $p = .53$, $\eta_p^2 = .01$. There was also no main effect of power on ascent ratings $F(1, 135) = .67$, $p = .52$, $\eta_p^2 = .01$

However, there was a significant effect of group $F(5.15, 694.83) = 8.68$, $p < .001$, $\eta_p^2 . = .06$. Post-hoc comparisons with bonferonni corrections revealed that relative the in-group of our participants (Whites), Christians ($p < .001$) and Muslims ($p < .001$) were rated significantly lower. Table 1 shows the post-hoc comparisons for the remaining groups when compared to Whites. A full breakdown of all post-hoc comparisons can be found in the supplementary materials.

SDO and Dehumanization Index

Following recommendations from Kteily et al. (2015) we constructed a relative dehumanization index, the average difference between ratings for the ingroup and the lowest ranked groups (Christians and Muslims). Correlational analysis revealed a significant relationship between our sample's dehumanization index and social dominance orientation. Not all participants completed the full SDO scale and thus n counts vary by correlation.

Study 1 Discussion

In study 1 we manipulated social power in participants and measured blatant dehumanization using the Ascent of Human Scale Kteily et al. (2015) Results revealed no significant main effect of social power on ascent dehumanization effect nor an interaction between social power and ascent dehumanization across different groups. These results suggest that social power alone may not be enough to influence dehumanization. While our study manipulated power there do exist individual differences in psychological states of power and thus we include a second study to analyze personal power on dehumanization with a new focus on ascent dehumanization.

4.5 Study 2

4.5.1 Methods

Preregistration

Main hypotheses, sample size, and analysis plan were pre-registered and can be found at: https://aspredicted.org/HDH_PXK

Sample Size Determination

Sample size was decided based on a power analysis using GPower version 3.1 . 84 participants were needed to detect a medium effect size (r = .03).

Participants

84 White Canadians were recruited via Prolific who had not taken part in study 1. As per our pre-registration participants who failed an attention check were removed from an analysis. One participant failed the attention check leaving 83 participants (Mean age = 37.44 , SD = 12.49, 51% Female).

Procedure

After reading a letter of information and signing a consent form participants were randomly sent to one of two counter-balanced groups. In the first group participants first took the personal sense of power scale (Andersen et al, 2012) followed by the ascent of human scale with the 15 groups as used in study 1a. This process was reversed for the second group, who first took the ascent of human scale followed by the personal power scale. After these two blocks all participants then took the social dominance orientation scale followed by the same series of

demographic questions from study 1 followed by a debrief. The study was approved by the McMaster Research Ethics Board.

Design and Analysis

The design for study 2 uses a correlational approach where ascent of human ratings are correlated with participant's personal sense of power score. In addition, we conduct a one-way ANOVA on ascent of human scores for the 15 social groups rated.

4.5.2 Results

Counterbalance check

An independent samples t-test was conducted on our counterbalanced condition and personal sense of power. Results revealed no main effect of condition on personal sense of power $t(69) = -.03$, $p = .97$, $d = -.007$, 95% CI [-.47, .45]

Ascent Dehumanization

A one-way ANOVA with all 15 groups was conducted. For our model, sphericity was violated and thus we present results with Greenhouse Geiser corrections. A significant main effect of group was found $F(3.39, 234.13) = 5.24$, $p < .001$, $\eta_p^2 = .07$, 95% CI [.01,.13]. Pairwise comparisons with Bonferroni corrections reveals that relative to the in-group of participants (White Canadians); Christians ($p = <.001$), Muslims ($p = .02$) and Indigenous ($p = .01$) were

rated significantly lower. Full pairwise comparisons with effect sizes are in the appendix for the article.

Personal Power and Dehumanization

We next investigated the relationship between personal power and dehumanization. Bivariate correlations were run on personal sense of power and ascent of human scores for all 15 groups. Results revealed no significant correlations. Partial correlations controlling for SDO also revealed no significant correlations between personal sense of power and AOH ratings.

Finally, we computed the average dehumanization index – the average difference in ascent scores between the in-group and the lowest rated out-groups. Correlation analysis between the average dehumanization index and personal sense of power was non-significant $r(68) = .08$, $p = .50$, 95% CI [-.15, .31]. As in study 1 we also investigated the relationship between the dehumanization index and social dominance orientation. Results revealed a significant relationship between relative dehumanization and SDO $r(65) = .57$, $p < .001$, 95%CI [.38, .72].

Study 2 Discussion

In study 2 we sought to examine the link between personal power and blatant dehumanization by way of the AOH scale. Results revealed no relationship between personal power and ascent scores for any of the groups presented to participants nor a relationship between personal power and the dehumanization index. Thus while Lammers & Stapel (2011) found evidence of a correlation between personal power and animalistic dehumanization, we detect no such relationship when focusing on ascent dehumanization.

4.6 General Discussion

Results from two studies reveal that social power does not influence blatant dehumanization via the ascent of human scale. In study 1 we manipulated participants' sense of social power via power priming episodic recall task Galinsky et al (2003) and found no differences in ascent ratings for 15 social groups. In study 2 we measured participant's personal sense of power and found no correlation between personal power and ascent ratings for each of the same 15 groups from study 1. We also saw no correlation between personal power and the relative dehumanization index, the difference in ratings between the in-group of our participants (Whites), and the lowest rated groups. Across both studies evidence of ascent dehumanization was found with participants rating some groups (Muslims and Christians in Study 1, Christians, Muslims, and Indigenous, in Study 2) lower than their own in-group (Whites) on the AOH scale. Thus while ascent dehumanization is present in our samples, the impact of social power on said dehumanization was not present. Our study focused on the relationship between social power and ascent dehumanization via the Ascent of Human Scale, a measure of blatant dehumanization (Kteily et al, 2015). Using experimental (study 1) and correlational (study 2) approaches, the evidence from our studies would suggest that social power and blatant dehumanization are not related. Whether by inducing states of or measuring individual differences in power, it would appear that blatant dehumanization is not related to the construct. Prior research has demonstrated a link between dehumanization and social power (Lammers & Stapel, 2011 ; Gwinn, Judd & Park, 2013; Yang, Jin, He, Fan & Zhu, 2015). However these results have been

through indirect measures of dehumanization, specifically from the dual model derived from Haslam (2006). It can be argued that we should expect to see power influencing dehumanization ratings on a more blatant measure, however, results from our studies indicate a difference between blatant and indirect forms of dehumanization.

There are many reasons as to why our results have not fallen in line with our primary hypotheses. First, when discussing null results we acknowledge that we have only failed to reject the null hypothesis for each of the tests in each of the studies and thus it is possible that our method and approach did not capture a potential effect. However, while both studies used different approaches (experimental manipulation in study 1 and the correlational approach in study 2) it is curious that in each no relationship was found between power and ascent dehumanization. Thus, when we ask the question in two different ways we still find null results.

Another possibility is that ascent dehumanization and the dual model dehumanization represent two distinct aspects of the same phenomenon. From this perspective the results from prior research are capturing the way power influences more subtle forms of dehumanization and that ascent level dehumanization is not influenced by social power at all. Recent debates in the dehumanization literature argue that scholars have painted too broad a brush in defining dehumanization (Bloom, 2022) while critics of this perspective argue such an approach is necessary to understand the whole of dehumanization as a psychological construct (Kteily & Landry, 2022). If the latter is the case and there are in fact many forms of dehumanization that can exist, social power may have an influence on forms such as the dual model's but not ascent dehumanization. This interpretation could be supported by evidence from Bruneau & Kteily (2017) who show reciprocal dehumanization of a powerful group and a non-powerful group in

direct conflict. The capacity to see another as less evolved appears not to discriminate between those with and without power.

Our studies used previously validated methods of manipulating and measuring social power. However, just as social power may only be related to distinct forms of dehumanization it is also possible that the methods used to measure power are insufficient to find the link between power and blatant dehumanization. The AOH scale is argued to capture a more direct and visceral form of dehumanization (Kteily et al, 2015; Kteily & Bruneau, 2017) and as such it is possible that different measures of power are required in studies attempting to investigate this question. In their study of reciprocal dehumanization between Israelis and Palestinians Bruneau & Kteily (2017) focused on real world power asymmetries. The difference in which group held more military, political, and economic might was considered a significant factor in describing power relations. Studies examining social power's impact on blatant dehumanization may need to focus on similar external measures of power as well. Future research could look at external measures of power within a homogeneous in-group, (e.g., individuals within a country at varying levels of social and economic status) and measure ascent dehumanization toward an out-group. Differences in ascent ratings, if found, could indicate the hand that power or status plays in ascent dehumanization.

Finally, it is simply possible that power is not as related to dehumanization as previously thought. With new research challenging the measures used by both infrahumanization research (Enock, Tipper & Over, 2021) and the dual model (Enock, Flavell, Tipper, & Over, 2021) the relationship between power and dehumanization may be called into question. Seeing another individual or an entire group as less than fully human may be something that is pervasive across

people regardless of their status or abilities within power hierarchies. If this is the case, our understanding of dehumanization would need to change. Interestingly, while we do not report a relationship between social power and ascent dehumanization, in both studies we report a significant relationship between ascent dehumanization and social dominance orientation (Ho et al, 2015). Prior research has demonstrated this link (Kteily et al, 2015, Galang, Ku, & Obhi, 2021) indicating that the higher an individual's score on SDO the lower they place groups on the ascent scale, referencing dehumanization. Given that a high score on the SDO relates to a preference for group-based hierarchies it may be that this construct is an important contributor to dehumanization whereas the mere ability to influence and control others may not be.

Our study of course has its limitations. We elected to focus on one in-group (White Canadians) and as such generalizations to the dehumanizing tendencies of all individuals are limited at best. While both of our studies aimed for appropriate sample sizes for our effects of interest, slight issues in data collection as well as participants who failed our attention check left each study with slightly fewer participants than needed; as such, additional studies with larger sample sizes and more diverse samples may reveal the effects we failed to find.

Power pervades many if not all aspects of social life. Dehumanization remains a concerning phenomenon that does not appear to be leaving us anytime soon. Determining the relationship between the two as they relate to inter-group relations remains an important question for researchers to ponder and investigate.

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Groups	Mean	Difference	Tukey HSD
aoh_white	91.73	N/A	N/A
aoh_arab	87.90	3.83	0.19
aoh_black	90.07	1.67	0.99
aoh_buddhist	89.88	1.85	0.95
aoh_chinese	90.78	0.96	1.00
aoh_christian	83.54	8.19	**<.001**
aoh_fili	89.16	2.57	0.76
aoh_hindu	88.17	3.56	0.46
aoh_indigenous	89.17	2.57	0.81
aoh_japanese	92.77	-1.04	0.99
aoh_jewish	91.00	0.73	1.00
aoh_korean	92.06	-0.33	1.00
aoh_muslim	86.10	5.63	**0.02**
aoh_sikh	88.43	3.30	0.42
aoh_southasian	90.34	1.39	0.99

Table 1: Tukey Post-Hoc Comparisons for main effect of group.

Variable	r-value	p-value	n
aoh_white	-0.17	**0.04**	136
aoh_christian	-0.25	**0.01**	136
aoh_buddhist	-0.45	**<.001**	135
aoh_sikh	-0.63	**<.001**	136
aoh_muslim	-0.60	**<.001**	135
aoh_jewish	-0.46	**<.001**	135
aoh_southasian	-0.49	**<.001**	136
aoh_arab	-0.59	**<.001**	136
aoh_korean	-0.31	**<.001**	135
aoh_japanese	-0.36	**<.001**	136
aoh_hindu	-0.57	**<.001**	135
aoh_black	-0.60	**<.001**	134
aoh_filipino	-0.54	**<.001**	135
aoh_indigenous	-0.59	**<.001**	134
aoh_chinese	-0.54	**<.001**	135

Table 2: Social Dominance Orientation scores correlated with ascent of human ratings for each group.

Groups	Mean	Difference	Tukey HSD
aoh_white	93.47	N/A	N/A
aoh_arab	87.31	6.17	0.07
aoh_black	89.12	4.36	0.37
aoh_buddhist	91.42	2.06	0.94
aoh_chinese	90.55	2.92	0.62
aoh_christian	88.80	4.67	**<.001**
aoh_filipino	89.88	3.60	0.17
aoh_hindu	89.40	4.07	0.32
aoh_indigenous	86.98	6.49	**0.01**
aoh_japanese	92.44	1.03	1.00
aoh_jewish	90.10	3.37	0.77
aoh_korean	91.37	2.11	0.97
aoh_muslim	86.80	6.68	**0.02**
aoh_southasian	89.77	3.71	0.15
aoh_sikh	89.04	4.44	0.09

Table 3: Tukey Post-Hoc comparisons for main effect of group.

Variable	r-value	p-value	n
aoh_hindu	-0.07	1	79
aoh_southasian	-0.19	1	77
aoh_white	-0.12	1	78
aoh_christian	-0.21	1	79
aoh_muslim	-0.14	1	79
aoh_filipino	-0.18	1	79
aoh_buddhist	-0.05	1	78
aoh_sikh	-0.12	1	79
aoh_arab	-0.15	1	78
aoh_korean	-0.14	1	79
aoh_chinese	-0.20	1	79
aoh_black	-0.05	1	79
aoh_jewish	-0.10	1	78
aoh_indigenous	-0.13	1	79
aoh_japanese	-0.08	1	79

Table 4: Personal Power correlations with each ascent of human rating

Chapter 5: General Discussion

5.1 Synopsis

Over three empirical chapters this thesis focused on the methodological and theoretical aspects of the ascent of human scale (AOH). Since its introduction into the psychological literature the AOH scale has been an influential measure of capturing blatant forms of dehumanization. This popularity is partly due to the resurgence of more overt forms of hate within society, especially within Western countries (Forscher & Kteily, 2020). Research using the scale has consistently shown various social groups are rated as less than human, especially when compared to ratings for the in-group of participants (Kteily & Landry, 2022). More importantly, ascent scores are predictive of behaviors tied to inter-group relations and conflict (Bruneau, Szekeres, Kteily, Tropp, & Kende, 2020); Bruneau & Kteily, 2017) . While these results add to the broader research on dehumanization, little work has exclusively focused on how the scale's administration can impact results. This thesis had two objectives, to examine how variations in scale administration can impact results, and also, if dehumanizing effects previously measured through indirect measures reveal themselves with the blatant nature of the AOH.

5.2 Summary

In chapter 1 we focused on the scale's instructions, specifically, the text prompt that respondents typically see when taking the AOH scale. We investigated if changes to this prompt would impact how respondents engage with the scale overall, providing ratings for various social

groups. Three conditions were set in which participants read the traditional prompt, mentioning the 'evolvedness' of social groups, a non-evolution prompt that removed all language of evolution from the prompt entirely, and finally a direct prompt which explicitly mentioned that the scale assesses dehumanization. Results found that scale instructions do not impact how participants rate social groups on the scale. This result would suggest that the AOH scale truly is tapping into an aspect of dehumanization, as instructions appeared to have no effect on ratings. In prior studies, researchers have removed the instructions entirely and found no change in the ratings for various social groups (Kteily et al, 2015). Other studies have made slight changes to the language, removing language related to evolution (Jardina & Piston (2021; Smith, Pasek, Vishkin, Johnson, Shackleford, & Ginges, 2022). Our study expands on this work with the inclusion of a direct text prompt, an instruction prompt that tells respondents the nature of the scale. To our knowledge no research has informed participants about the nature of the AOH scale before or during its administration, only after during debrief. Thus a growing body of evidence continues to suggest that the instructions themselves may not sway participant ratings.

Prior beliefs about studying dehumanization in laboratory settings have assumed the participants would not openly express the extent to which they view others as less than human (Kteily, & Bruneau, 2017). Not only has research using the AOH scale shown a willingness to express blatant forms of dehumanization in respondents, our results extend on this finding as even when participants are told the true nature of the scale, this instruction prompt does not change how respondents rate various social groups. It is possible that providing no prompt to the AOH scale, or even letting participants know the nature of the scale may be a useful

administrative procedure. Prior work has raised concerns about the nature of the instructions' language, specifically its mention of evolution (Jardina & Piston, 2021; Smith, et al, 2022). And as discussed in chapter 2, not all studies provide a standard prompt, omitting it entirely or providing a condensed one. As such, a standardized approach may very well be to tell participants the nature of the scale, similar to the direct prompt in chapter 1, to ensure there is no confusion by way of respondents.

With regards to standard practices in administering the scale, chapter 3 examined a question not addressed in the literature, specifically the way in which social groups are presented to participants on the AOH scale. Many studies using the AOH scale employ the use of "filler groups", additional social groups to be rated by respondents but that are not of immediate interest to researchers. Their inclusion is meant to disguise the true comparisons of interest from participants. In chapter 3, two studies examined if group salience, the extent to which a group stands out amongst others on the scale, impacts participant ratings. In study 1a the in-group of our participants (Canadians) was included on the scale while another social group (Arabs) were made to stand out in three salience conditions. In study 1b we removed the in-group of our participants from each condition, leaving Arab salience as the primary factor in the study.

Results suggested that when the in-group of participants is included amongst other filler groups, salience does not have an impact on out-group ratings. However, when in-group labels are not included, salience impacts ascent ratings, such that the more an out-group stands out

amongst other filler groups, the lower they are rated on the AOH scale indicating dehumanization. These results suggest that more research is needed on when and how to use filler groups when administering the AOH scale. Conversely, these results may also suggest that dehumanization, if it is present, may be activated by salience. When a group stands out they may be subject to dehumanization. However, what has not been addressed by chapter 3 is the question of whether or not filler groups are even necessary. To our knowledge no standardized approach to the inclusion of filler groups as a necessity has been discussed in the literature. Further research in the use of filler groups would best be focused on examining if the inclusion or omission of filler groups impacts respondent ratings for social groups of interest.

Chapter 4 posed a different question, what happens when we apply a blatant measure of dehumanization to research that has used indirect measures? Specifically, we focused on applying ascent dehumanization to a well-established finding, that social power impacts the tendency to dehumanize outgroups. Those higher in social power dehumanize more and those lower in social power dehumanize themselves. Across two studies we examined the link between social power and blatant dehumanization. In an experimental design participants' sense of social power was manipulated with results showing no effect of social power on ascent ratings. In study two, a correlational approach was taken, examining the relationship between participants' personal sense of power and ascent dehumanization. Results from this study showed no relationship between AOH scores and personal power. When the measure of dehumanization changes from an indirect measure to a measure of blatant dehumanization, a relationship previously established appears to go away. These results may force us to reflect on our

understanding of the relationship between power and dehumanization, with typically posits that those higher in power tend to dehumanize more than those lower in power. The data in chapter 4 however would suggest the ability to dehumanize may be something all across the spectrum of social power can access equally. These results open up new questions. Further research should compare both measures head to head, do indirect measures suggest dehumanization while ascent dehumanization remains non-existent? Furthermore, would the application of ascent dehumanization to other prior studies reveal no effects? For example, across two separate research papers Rodrigues, Fasoli, Huic, & Lopes (2018) and Rodrigues, Lopes, & Huic (2021) reveal that individuals dehumanize romantic couples engaged in consensual non-monogamy, a practice in which couples can engage in sexual affairs with other people outside of the romantic union. Both studies use indirect measures of dehumanization, would these effects hold if ascent dehumanization is assessed for hypothetical individuals in such romantic relationship arrangements? The AOH scale opens up new questions where comparisons across indirect and direct measures of dehumanization are needed. In addition, what other previously established findings that used indirect measures (e.g. the dehumanization of specific social groups) remain similar or change when ascent measures are applied? This is of particular interest given the recent challenges to the popular indirect measures of dehumanization used in the literature (Enock, Tipper, & Over ,2021; Enock, Flavell, Tipper, & Over, 2021).

5.3 Taken all together

Taken together the results from the studies in this thesis lead to some areas of discussion that may prove fruitful for dehumanization research.

5.4 Some qualitative inquiry

Most of the measures used in dehumanization research are quantitative in nature, assessing degrees of humanness on a numerical scale or attribution of emotions or traits. Little contemporary research has utilized qualitative methods to examine how and why individuals dehumanize others. Interestingly, the AOH scale provides a unique opportunity to engage in qualitative research in dehumanization. Asking respondents to justify their ratings can provide an opportunity to understand the subjective aspect of dehumanizing but also provide context on how respondents engage with the scale itself. Results from chapter 2 suggest the AOH scale's instructions do not impact ratings for social groups. However, research has shown that some respondents do elect to recant their ratings when made aware of the nature of the scale, expressing that they were unaware that the task on the AOH scale indicated dehumanization (Markowitz & Slovic, 2021). In a thematic analysis of responses from that study, those who dehumanized on the AOH scale, a theme of recantations was uncovered. This theme made up those who, when made aware of the nature of the AOH scale, expressed that their lower than human ratings were not meant to reflect a dehumanizing sentiment.

Markowitz & Slovic (2021) limit their qualitative analysis only to those who dehumanized on the AOH scale. Additional studies taking a mixed methods approach could aim

to ask all respondents to explain their rationale when taking the AOH scale. This would allow researchers to see thematic differences between those who dehumanize on the scale compared to those who do not. In addition, variations of Markowitz & Slovic's (2021) original design could only ask dehumanizers on the scale to explain their rationale under different text prompt conditions as used in chapter 2. Do rationales change when the prompt itself is different, especially when the direct prompt is used?

In addition, understanding why everyday participants, in their own words, choose to dehumanize can add to our theoretical understanding of dehumanization as a psychological construct. Recent work has already shown what a return to qualitative research on dehumanization can do. In an archival qualitative study Luft (2022) re-analyzed interview data from perpetrators of the Rwandan genocide. Results suggest that the focus on dehumanization as a causal mechanism for violence may not be the best way to theorize about the construct. It may be best to conceptualize dehumanization as a consequence of committing violence. The more an individual engages in violence against an out-group, the more dehumanization serves as a psychological comfort in justifying one's behavior (Luft, 2022). Such a framework can open the doors to new avenues of research examining the causal mechanisms of dehumanization and violence. While counter-intuitive, this re-examination is also in line with criticisms of dehumanization research from other psychological scientists who have argued an exaggerated emphasis on dehumanization as a cause of various forms of violence. While Luft (2022) does not argue as strongly against a dehumanization hypothesis as other scholars (Bloom, 2022; Over, 2021), such a reconception may prove fruitful in synthesizing the overall interests in

dehumanization as a central component of violence and the criticism levied against that approach from other scholars. Thus further qualitative investigations into how individuals engage with the AOH scale as well as why they dehumanize can prove fruitful for research on dehumanization.

5.5 Back to basics

Much of the research in the psychology of dehumanization is focused on which social groups are being dehumanized, what factors contribute to dehumanization, and how said dehumanization predicts forms of violence towards others. This thesis emphasized a different approach, the examination of one specific measure. While this may seem trivial in terms of contributions to the research questions in the area, ensuring measurement validity is essential. As Izydorczak, Grzyb , & Dolinski (2022) argue in their methodological assessment of the AOH scale, there remain undiscussed properties of the measure that could be impacting scores if not thoroughly vetted. In many ways this thesis expands on this work by finding additional undiscussed components of the AOH scale that require assessment.

As researchers further investigate the properties of the AOH scale, those who use it in studies can do so with added confidence in what the results are telling us as well as confidence in its administration. This latter component especially is where the results from chapters 2 and 3 contribute. As discussed in chapter 2, variations on the instruction prompt exist in numerous studies that use AOH scale. Results from our study manipulating the instruction prompt suggest

that participants understand what is being asked of them, adding validity to the results from studies that have varied instruction prompts.

For researchers interested in measuring how one or multiple social groups are dehumanized, results from chapter 3 can provide useful insights. Some studies that use the AOH scale are interested in the dehumanization of one specific group while others may be interested in how a particular group dehumanizes multiple out-groups. Whether or not to use filler groups or how to include them remains an area still largely up to individual research teams which could be influencing results in ways unknown. As results from chapter 3 suggest, some care is needed with filler group choice, especially when some groups stand out and if the ingroup of participants are not included as a group to be rated. This information is critical to researchers using the AOH scale as it can provide the beginnings of a standardized approach for measuring single or multiple groups using the measure.

5.6 The AOH for other forms of dehumanization

Research on dehumanization is not limited to how individuals dehumanize others. Research has explored how individuals can have a dehumanized conception of self, self-dehumanization (Basitan & Crimston, 2014) as well as how they perceive how out-groups view the humanity of their in-group, meta dehumanization (Kteily, Hodson, & Bruneau, 2016). Research has shown that the AOH scale can be used to measure meta dehumanization, where respondents place where they believe an out-group would place their in-group on a scale of

evolvedness (Kteily, Hodson, & Bruneau, 2016; Bruneau, Hameiri, Moore-Berg, & Kteily, 2021). Results from studies using this approach have revealed the extent to which meta dehumanization is linked to reciprocal dehumanization, the more one believes an out-group dehumanizes their group, the more they dehumanize said out-group (Bruneau, Hameiri, Moore-Berg, & Kteily, 2021). It remains an open question if some of the concerns brought up in the chapters of this thesis are of concern for measuring blatant meta-dehumanization. Specifically, do variations in the meta-dehumanization prompt impact how respondents reflect on the task and provide their ratings? Can multiple out-groups be used on a meta dehumanization scale (e.g., asking Muslim participants how Non-Muslim Americans as well as Non-Muslim Europeans would place them on the scale). Robustness checks on the application of the AOH in assessing meta-dehumanization can prove useful in pursuing new lines of inquiry.

Returning to the notion of self dehumanization; is a variation of the AOH scale applicable in measuring how one views their self concept in terms of humanness? What are the relationships between measures of self dehumanization already established and attempts to get respondents to rate themselves on a self directed adaption of the AOH scale? In many ways dehumanizing the self is tied to aspects of overall mental health and wellbeing. However, as of writing of this thesis no research to our knowledge exists that explicitly measures self-dehumanization. This gap opens up many questions to be tackled by researchers including what would blatant self-dehumanization look like? One approach could be to apply the AOH scale to the construct, similar to meta-dehumanization and present participants with the option to rate themselves on levels of evolvedness. As such designing a prompt that invites participants to

engage with the tasks as researchers anticipate would be an area of research in and of itself. More broadly the question remains, does self dehumanization mimic the kind of animalistic dehumanization that the ascent of human scale captures? Pilot versions of the AOH scale that focus on self ratings can be assessed alongside previously established measures of self-dehumanization. In spite of these challenges, designing and robustly testing a measure of blatant self-dehumanization holds promise.

5.7 Contextualized Dehumanization

Literature in the dehumanization space has acknowledged how outgroups can be associated not only with lower order primates but other lower order life forms such as insects, parasites, and viruses. Goff, Eberhardt, Williams, & Jackson (2008) cite existing evidence showing how this component holds contextualized racial histories. For example, Black individuals have historically been associated with lower order primates in the form of monkeys and gorillas when explicitly dehumanized (Goff et al, 2008) whereas Latin American individuals, especially immigrants in western countries are associated with cockroaches and pests, alluding to their "infestation" of countries such as America (Santa Ana, 2002). Can variations to an AOH scale capture these contextual realities?

Recent research has examined this methodologically. In a study of attitudes towards cyclists Delbosc, Naznin, Haslam, & Haworth (2019) pilot a variation of the AOH scale, using insects as a foundation of ascent rating as opposed to primates. The rationale for this approach

being that their group of interest, cyclists, are often referred to as insects in derogatory manners. Results from their work show validity of the insect variation of the AOH scale (Delbosc et al, 2019). To what extent does the base image of comparison and ascension matter in assessing dehumanization? Should historical facts be adapted to capture these realities? For example Markowitz & Slovic (2021) assess the dehumanization of Mexican immigrants using the AOH scale. Given the history of associating central and south American immigrants with pests, viruses, or insects (Santa Ana, 2002), might a variation of the AOH, similar to the one used by Delbosc et al, (2019) be more appropriate? This can also extend to the accessibility of the scale based on the participants themselves. In a study on the developmental origins of blatant dehumanization Zhou & Hare (2022) include a variation on the AOH appropriate for children, with four images of ascending humanness compared to the AOH's standard 5. Assessing these variations and their validity should be an area of inquiry within this research paradigm.

5.8 Balancing efforts

One of the primary strengths of the AOH scale has been a means to capture blatant dehumanization that individuals have toward outgroups. It has also been argued that this approach may have advantages over more subtle measures of dehumanization especially with the current increase in overt forms of identity based social hatred. As such, continued research into its application as well as what results from studies that use it mean will be crucial in ongoing discussions around the concept of dehumanization. However, as argued by Moradi (2013) one

area that has lacked attention lies in research on those on the receiving end of dehumanization, the dehumanized.

Practical applications of research on dehumanization have been to focus on what factors decrease dehumanization in individuals with results from studies showing that contact with outgroups can decrease dehumanizing sentiment toward them (Bruneau, Hameiri, Moore-Berg, & Kteily, 2021; Tausen, Charleson, & Fingerhut, 2021). While promising, another practical application of research is missed without a greater emphasis on the dehumanized, principally, how those already dehumanized can respond to, and resist dehumanization. In a special issue advocating for similar directions Baldissarri, Demoulin & Kteily (2022) cite research that focuses on how groups can heal from and resist dehumanization. In one highlighted article, Howe, Schumann, & Walton (2022) show that Back Americans respond to dehumanizing descriptions of their group by developing more complex self conceptions. Research that further examines how groups resist dehumanization and reclaim their humanity can open up new practical applications in addressing the harms of dehumanization that do not rely on reforming those who choose to dehumanize.

Furthermore, our understanding of the broader construct is only helped with an increased focus on the experiences of those who are dehumanized. This thesis began grounding the concept of dehumanization in both the philosophical and sociological analyses of dehumanization which has linked it to greater forces such as oppression and violence (Smith, 2021 Freire , 1970). A greater understanding of the psychological processes of the dehumanized would not only

increase our understanding of the concept but potentially shed further insight into concepts such as oppression. Building off the evidence from Howe et al (2022) what other forms of psychological resistance do dehumanized groups engage in? Further research interested in these findings can examine if other groups engage in similar tactics when faced with dehumanization, or what other tactics are employed as a form of group empowerment. From this perspective, psychology is well positioned to take up this work and contribute to this component of knowledge.

5.9 References

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