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Inhuman animals: moving dehumanization into the domain of human–animal relations

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Dehumanization researchers have robustly shown that people display remarkable variability in attributing humanity to others and outgroups, often with negative consequences for the dehumanized. We argue that a similar process operates at an interspecies level; people attribute less mind and humanity to animals, often with negative consequences for animals' moral standing and treatment. We outline recent work demonstrating that people attribute farmed animals less mind and do so in a motivated fashion. Further, we examine evidence that this denial of mind undermines moral concern for farmed animals. Finally, we explore some of the avenues for improving both mind attribution and moral concern toward farmed animals. We conclude that while researchers have robustly demonstrated that a process similar to intergroup dehumanization occurs when omnivores think about farmed animals, we need more research to understand how this can be counteracted.

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Introduction

The early 21st century witnessed significant advances in our understanding of the psychology of dehumanization. Researchers such as Leyens [1] and Haslam's [2] major theoretical advance was to demonstrate the remarkable flexibility with which people assign humanity to others, even outside of contexts of extreme violence. Although objectively all humans should be attributed the same amount of humanity, early infrahumanization researchers were among the first to recognize that people are willing to assign lesser humanity to outgroups than their ingroup [1]. This assignment of lesser humanity has emerged in a wide range of intergroup contexts, including ethnicity [3], nationality [4], gender [5], and even toward fictitious outgroups [6]. People also attribute less humanity to others at the *interpersonal* level, with people deeming others to possess less humanity than oneself [7].

This differential attribution of humanity is not random and is instead both motivated and consequential. Dehumanization is especially motivated when the outgroup is viewed as very different [8], when the ingroup feels threatened [9], or when individuals feel more powerful than others [10,11]. Further, variable attributions of humanity are consequential, with dehumanization being employed to facilitate [12], justify [13], and excuse [14] tremendous harm toward others (e.g. genocide), and to actively undermine prosocial behavior (e.g. helping during natural disasters, [15]). In this review, we will argue that variable attribution of humanity is not limited to the ways people think about other *humans*. We will demonstrate that people employ the same flexibility in attributions of mind and 'humanity' to nonhuman animals (hereon animals) with many of the same consequences: the facilitation and justification of a tremendous intergroup harm toward some animals (e.g. farmed animals), which results in the deaths of billions of animals each year.

'Dehumanizing' animals

We can think of the relationship between humans and animals as a form of intergroup relation (e.g. see [16]) or interspecies prejudice [17]. Within this broad relationship, humans treat one particular group of animals — factory or intensively farmed animals (i.e. animals raised for meat and/or other purposes such as dairy and eggs) — very poorly indeed. The living and dying conditions of farmed animals have been extensively recognized as inflicting considerable pain and suffering upon the animals, all solely for the gustatory benefit of humans[1] [18]. For instance, farmed animals' living conditions consistently fall short of animal welfare standards [19], with

practices such as the slaughter of male calves at birth, harmful breeding of fast-growing farmed animals, and usage of farrowing crates, all being allowable under current UK and Australian law [19]. To be clear, our claim here is that animals' lives have moral value and that animals are treated poorly, not necessarily that animal lives are of equal moral weight to human lives. In short, as a group, farmed animals are subject to considerable intergroup violence.

Extant dehumanization literature has robustly shown that intergroup violence, especially when violence is enacted asymmetrically (e.g. from a powerful perpetrator to a less powerful victim, [20]), is associated with a tendency to think of the victim as less than fully human [21,22]. While animals cannot be *de*humanized — due to already being nonhuman — there is good evidence for a similar psychological process of reducing or minimizing animals' minds (e.g. viewing animals as incapable of [intelligent] thought, emotion, and/or pain) as a means to justify and excuse intergroup harm perpetrated against them. The flexible use of mind attribution between human groups has been studied, sometimes as an element or type of dehumanization. For example, the mind attribution has been used to study the dehumanization of prisoners [23] and nonhuman entities such as corporations [24], whereby lower mind attribution has been equated to a form of dehumanization (e.g. a denial of human capabilities and feelings). Overall, research has robustly shown that people attribute less mind to others in a similar way to how they dehumanize [25]. In this review, we argue that people who consume animals and their products may be motivated to deny, minimize, or disregard farmed animals' mental and experiential capacities such as their intelligence, ability to think, or to feel pain (e.g. [26]), in order to reduce guilt about consuming these animals and their products (e.g. dairy and eggs).

This denial of mind to farmed animals is part of a broader process of meat-related cognitive dissonance or the 'meat paradox' [26–28]. That is, most people report caring about animals, and yet these same people (paradoxically) consume animals and products from them, which causes unavoidable harm to animals. As people typically value consistency in values and behavior [29], this clear contradiction between valuing animals and harming them causes omnivores to feel discomfort ("meat-related cognitive dissonance", [28]). To alleviate this discomfort, omnivores are thus motivated to view farmed animals as possessing little mind. Indeed, research shows that omnivores typically attribute farmed animals with less mind than nonfarmed animals such as pets [30]. This effect also emerges when omnivores are asked to consider the same farmed animal under different circumstances. For instance, people view farmed animals as possessing less mind when reminded of these animals' role in human consumption (e.g. meat) than when farmed animals are presented without such a reminder [31], an effect that was recently independently replicated with a larger sample [32]. Put simply, when reminded of the violent, exploitative intergroup context (e.g. slaughter), people reduce mind attribution to farmed animals.

The above effect is not limited to known animals nor to personal involvement in the exploitation. For example, when introduced to a novel animal (a "Bennett's tree kangaroo") and told that other people hunt the animal for meat, participants attribute the animal with less mind than when participants are told that the animal is simply wildlife [33]. Indeed, even *indirect* reminders of the intergroup context, such as omnivores reading about a vegetarian, are sufficient to elicit reduced attributions of mind [34]. In sum, much like dehumanization, and potentially arising from shared underlying psychological processes, people tend to see animal outgroups as having less mind.

From denying mind to reducing concern

As research on moral psychology has shown, being perceived to possess a mind is an important determinant for being considered worthy of moral concern [25]. Accordingly, the denial of mind to farmed animals should be linked to reduced moral concern toward these animals. By reducing mind attribution to farmed animals, people can undermine the grounds on which farmed animals receive moral concern, effectively ameliorating blame they might experience for causing that harm (for a review see Refs. [26,27] for a theoretical elaboration). By analogy, dehumanization serves a similar purpose in human intergroup relations; by reducing others' humanity, we can undermine our moral concern toward them (e.g. [35,36]).

The link between denial of mind and diminished moral concern has been clearly evidenced through studies investigating correlations between judgments of animals' minds and perceived edibility. In an early demonstration of this link, ratings on a broad set of 32 animals found a robust negative relationship between these two dimensions: animals with high perceived mind are rated low on edibility, whereas mindless animals are considered more edible [31]. This finding has also been demonstrated using specific target animals. For example, compared with vegetarians, pescatarians rate fish as significantly less able to experience pain [37]. Such effects are not

[1] While a small but growing number of people do not consume meat (vegetarian) or animal products (vegan), the psychology of these groups lies outside the scope of this review. Interested readers may consult excellent specialized reviews on such populations (e.g. [56]).

unique to the context of meat consumption: greater support for using animals for household products and clothes (e.g. leather) is also associated with a lower belief in animals' minds [38]. Importantly, when people are led to believe that an animal is used for food, these people not only reduce the extent to which they attribute the animal with mind, but this reduced mind attribution *causes* a further decrease in the animal's perceived moral standing [30,31,33]. Alongside informing self-reported changes in moral concern, reduced mind attribution to animals also affects more subtle judgments. In a series of innovative studies, Buttlar and Walther [39,40] demonstrated that ambivalence toward meat, as measured by behavioral uncertainty, is linked to the denial of farmed animals' minds and this denial of mind in turn predicted reduced moral concern. Although prior work has focused on the link between mind attribution and moral concern, some research has looked specifically at attributions of stereotypically 'human' characteristics to farmed animals. This work has found that, compared with vegetarians, omnivores tend to see animals as 'less human' and also view farmed animals as less human than nonfarmed animals [41]. This lack of perceived humanness has crucial moral consequences, as attributing humanness to farmed animals increases empathy, which in turn decreases willingness to eat meat [42]. In sum, lower attributions of mind and humanity to animals serve to reduce moral concern for animals, especially among people involved in intergroup harm.

It is important to note that there are some findings that fail to support this general pattern of results. For example, Peden and colleagues [43] showed that higher attribution of mind (i.e. capacity for hunger) was *not* associated with increased moral concern for animals among pig farmers. Likewise, environmental activists who consume meat show no evidence of diminished moral concern toward farmed animals [44]. Both of these studies potentially point to the importance of understanding peoples' relationships with farmed animals in order to understand their reduced mind attribution and moral concern.

Interventions, challenges, and future directions

Prior work has typically shown that omnivores attribute farmed animals less mind and that doing so reduces their moral concern. How then can we restore moral concern toward animals, and thereby improve and protect animal welfare? Several approaches have been tested, at least partially informed by work on the psychology of dehumanization ([45], for a broad review of interventions see Ref. [46]).

Given the central role of mind attribution, it seems sensible to examine whether increasing mind attribution to farmed animals in turn increases moral concern. In a series of studies, we [47] presented participants with compelling evidence that farmed animals (i.e. pigs) were intelligent, sociable creatures. Despite believing this information and increasing their mind attribution to pigs, participants *failed* to increase their moral concern toward pigs. More recently, we [48] found that people actively avoid information that might increase mind attributions to farmed (but not nonfarmed) animals, presenting a further barrier to attempts to use mind attribution as a route to increased moral concern. In short, while reduced mind attribution may be a sure path to reduced moral concern, the inverse is not necessarily true.

Other studies have adopted approaches shown to reduce the dehumanization of human outgroups, such as imagined contact [49] and virtual contact [50]. Work on imagined contact has found that having people imagine a positive interaction with a farmed animal can improve attitudes, increase care, and reduce willingness to eat meat [51,52]. By contrast, work examining virtual contact in the form of virtual reality has shown that people who see farmed animal suffering can show either increased *or* decreased concern for the animal, yielding an overall null effect [53]. In short, despite extensive emerging literature, we currently have limited knowledge of ways to increase moral concern for animals and drawing more deeply on prior research on reducing dehumanization might be a fruitful avenue.

The scope of exploitative and harmful human–animal interactions sadly does not end with meat and animal products. Animals are widely used in research setting, spanning from essential medical research to cosmetics testing. Animals are also used as entertainment such as bullfighting, horse and dog racing, and in zoos, circuses, and safari parks with variable standards of animal welfare. While limited emerging literature has explored justification processes for using animals beyond meat (e.g. [54]), further research needs to be conducted to explore both a) the possible occurrence of cognitive dissonance arising from these alternative uses of animals and b) denial of mind against animals used within these contexts.

Finally, we have argued for close similarity in the ways people dehumanize human outgroups and the ways people deny mind and moral concern to animal outgroups. It is worth taking a moment to reflect on what might delineate the two processes. One key difference is the specific outgroup target. Intergroup relations occur in specific sociopolitical and historical contexts. In the case of (farmed) animals, this is a very particular context (e.g. people eat them). This may help to situate some counterintuitive findings (e.g. reduced mind attribution leads to reduced moral concern, but not necessarily the other

way around). More broadly, several of the personality variables that facilitate dehumanization (e.g. social dominance orientation) are also linked to interspecies prejudice [17]. However, we currently know relatively little about the personality determinants of mind attribution to animals, which warrants further examination. Indeed, there may be instances where dehumanization (of human outgroups) and denial of mind (of animal outgroups) sharply diverge, for example, people dehumanize human outgroups more when they are threatening [13], whereas threatening animals are attributed *more* mind in certain psychological dimensions such as competence, and threatening animals can elicit awe instead of the envy that is typical with threatening human outgroups [55]. Examining the similarities and differences between human outgroup dehumanization and animal outgroup denial of mind would therefore be a worthwhile endeavor.

Conclusions

As a field, we have made great strides in our understanding of the everyday dehumanization of others and outgroups. Importantly, this research does not stop with human outgroups; our more violent and exploitative relationships with nonhuman animals can also be understood as involving many of the same mechanisms. Undoing this 'dehumanization' of animals is an important challenge for future research.

Conflict of interest statement

Nothing declared.

Data Availability

No data were used for the research described in the article.

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