



Short communication

The role of meat consumption in the denial of moral status and mind to meat animals[☆]Steve Loughnan^{a,b,d,*}, Nick Haslam^b, Brock Bastian^c^a University of Kent, United Kingdom^b University of Melbourne, Australia^c University of Queensland, Australia^d School of Psychology, University of Kent, Canterbury, CT2 7NZ, United Kingdom

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ABSTRACT

People enjoy eating meat but disapprove of harming animals. One resolution to this conflict is to withdraw moral concern from animals and deny their capacity to suffer. To test this possibility, we asked participants to eat dried beef or dried nuts and then indicate their moral concern for animals and judge the moral status and mental states of a cow. Eating meat reduced the perceived obligation to show moral concern for animals in general and the perceived moral status of the cow. It also indirectly reduced the ascription of mental states necessary to experience suffering. People may escape the conflict between enjoying meat and concern for animal welfare by perceiving animals as unworthy and unfeeling.

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“Meat should be of special interest to psychologists, because it is a quintessential example of the interesting and important state of ambivalence” Paul Rozin (2007, p. 404).

Many people enjoy eating meat but few enjoy harming or killing other sentient creatures. These inconsistent beliefs create a “meat paradox”; people simultaneously dislike hurting animals and like eating meat. One solution to this conflict is to stop eating meat. Vegetarians experience no inconsistency between their fondness for animals and their negative views of meat and meat eating (Kenyon & Barker, 1998; Povey, Wellens, & Conner, 2001; Swanson, Rudman, & Greenwald, 2001). Another solution is to fail to recognize that animals are killed to produce meat. Although few people live in true ignorance, some meat-eaters may live in a state of tacit denial, failing to equate beef with cow, pork with pig, or even chicken with chicken. By limiting the extent to which we consider the chain of meat production we may separate meat from animal (Hoogland, de Boer, & Boersema, 2005). We propose a third possibility; when people eat meat they suppress their moral concern for animals. To reduce the unpleasantness associated with both eating meat and not wanting to harm animals, people

withdraw moral status from animals and deny their capacity to suffer.

Meat animals and moral concern

The consumption of meat is morally troublesome because it appears to violate concerns for animal welfare. This may be viewed as a specific case of cognitive dissonance in which a belief and a practice are in conflict, creating an unpleasant emotional state that people are motivated to resolve (Festinger, 1957; for recent reviews see: Harmon-Jones & Harmon-Jones, 2007; Harmon-Jones & Mills, 1999). According to Cognitive Dissonance Theory, people can alleviate this dissonance by altering one of the inconsistent elements (e.g., attitudes towards meat or attitudes towards animals). Indeed, there is considerable evidence that concern about protecting animal rights is related to people’s attitudes and behaviors towards meat. Amongst vegetarians, the immoral treatment of animals is a frequently cited reason for the rejection of meat (Rozin, Markwith, & Stoess, 1997; Stockburger, Renner, Weike, Hamm, & Schupp, 2009). Amongst omnivores, evaluations of meat are ambivalent, with negative attitudes partially the result of moral concerns regarding the treatment of animals (Berndsen & van der Pligt, 2004, 2005). Although there is little direct evidence that moral concern for animals causally reduces willingness to eat meat, Hoogland et al. (2005) demonstrated that priming people with animal welfare can lead to a greater focus on the ethical treatment of animals when selecting meat products. In short, people’s concerns regarding the moral treatment of animals are cited as a reason for not eating meat, help explain negative

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attitudes towards meat, and precipitate a desire for ethical meat consumption.

Some people react to the moral dilemma associated with meat consumption with a decreased willingness to indulge. Clearly, however, many others are able to continue to do so. Meat-eaters may resolve the tension between positive attitudes towards both meat and animals by reducing the extent to which they afford animals moral status or worth. If animals lack moral status, then killing them is not a moral issue, and eating meat is not morally problematic. Psychological research makes it clear that people draw the boundaries of moral concern in a motivated, rather than an absolute, fashion. For instance, Opatow (1993) told participants that a species of beetle was being threatened by the construction of either a needless industrial development or an important reservoir. When the beetle was threatened by needless development, people were concerned for its rights. However, when the threat was from an important reservoir, concern for the beetles' rights evaporated. It appears that we are prepared to extend moral concern to animals provided that it does not interfere with our interests. Ceasing the consumption of meat may constitute interference and accordingly result in a withdrawal of moral concern. As Paul Rozin puts it, meat's "high appeal to the human palate and excellent short-term nutritional value are pitted against concerns about... the immoral treatment of animals" (Rozin, 1996, p. 23). Morality research suggests that the former may prove stronger than the latter.

In addition to a broad withdrawal of moral status, eating meat may lead people to deny animals the capacity to suffer. The notion that the capacity to suffer should undergird moral consideration was eloquently captured when Bentham suggested "the question is not, can they reason?, nor can they talk?, but, can they suffer?" (Bentham & Browning, 1843, p. 143). More recently, Singer (1975) has similarly argued that animals should be afforded moral consideration if they are capable of experiencing suffering. Since many meat animals can suffer, harming them is immoral. Singer argues that the possession of sensitivity – the capacity to suffer – rather than intelligence should be the basis for affording moral concern. If we use the capacity to suffer as our criterion for moral consideration, we should expand our moral circle to encompass other sentient animals. People appear to agree with the general claim that "those who can suffer should not be harmed". When deciding who deserves moral treatment, people appear to base their judgments more on the ability to feel rather than the ability to think (Epley & Waytz, 2009; Gray, Gray, & Wegner, 2007; Gray & Wegner, 2009). Moreover, people generally believe that animals should be afforded moral consideration because they possess these mental capacities (Gray et al., 2007).

However, like moral concern, mind attribution is responsive to the motivations of the perceiver. In the human domain, the suffering of others precipitates a reduction in their perceived mental abilities (Kozak, Marsh, & Wegner, 2006), particularly when one feels responsible for that suffering (Castano & Giner-Sorolla, 2006). This finding suggests that rather than deal with the uncomfortable realization that a sentient being is experiencing suffering, people may unburden their conscience by denying the victim the capacity to suffer. If people react to evidence that they are responsible for the suffering of others by demoralizing the victim, we might expect that meat-eaters deny animals this capacity.

The present study

The present study examines whether the consumption of meat changes the perceived moral status and mind of animals. We hypothesize that eating meat will lead people to constrict their moral concern for animals, deeming fewer animals worthy of moral consideration. Further, we expect that eating meat will lead people to deny moral status to the animal they eat. Finally, we suggest that

eating meat will influence the degree to which people attribute minds to the animal they eat. We predict that meat-eaters will deny such animals the mental states necessary to suffer (i.e., sensation) but not states that have a less direct link to suffering (i.e., intellect). If moral consideration is related to the perceived mental capacity to suffer (Gray et al., 2007; Singer, 1975), a withdrawal of moral concern may be linked to a decrease in mind attribution.

Method

One hundred and eight students (86 females, mean age = 19.93 years, $SD = 4.81$) participated in a study of "food preferences" in exchange for partial course credit. Upon arrival, participants were informed that the food aspect of the study would take around 5–10 min and that additional, unrelated questionnaires would be administered to fill the experimental period. In reality, the food task was the experimental manipulation and the additional questionnaires were the dependent variables. For the food task, participants were told they would be assigned to eat either beef jerky (dried beef) or cashews (dried nuts) and then complete a short questionnaire. Prior to assignment, participants were asked if they wished to participate in the study, and those who expressed concerns were excused from the food task and thus excluded from the data set ($n = 6$). Participants were then randomly assigned to the beef jerky (experimental) or cashew (control) condition. After sampling either beef or cashews participants completed an online questionnaire which asked them to rate the product on a number of taste dimensions (e.g., tenderness, sweetness, and tastiness). This task took approximately 5–10 min to complete.

After completing the manipulation, participants were informed that they would be randomly assigned to some additional questionnaires. Participants were directed to another website where they were assigned to an animal rating task. To increase the believability that this was a separate questionnaire, participants were required to re-enter their demographics and the questionnaire format (i.e., font, style, and color scheme) was deliberately varied from the food task. The animal questionnaire commenced by providing participants with a moral circle task (Laham, 2009). Participants were presented with a set of twenty-seven non-human animals (e.g., chimp, kangaroo, bat, snake, snail, cow, chicken, and starfish) and instructed to "indicate those animals that you feel morally obligated to show concern for". Twenty-six of the animals were drawn from the original moral circle task (Laham, 2009) with a single animal added (i.e., cow). They were also told that one animal would be randomly selected from the list for a more detailed rating. In reality, the subsequent animal was always the cow. Participants were presented with an image of a cow in a paddock. They were then required to rate the cow's ability to experience a set of eighteen cognitive states (1 = not at all; 7 = very much so) drawn from previous research (Haslam, Kashima, Loughnan, Shi, & Suitner, 2008). These states were divided into two nine-item sets: sensation (i.e., seeing, hearing, tasting, pain, hunger, pleasure, fear, happiness, and rage) and intellect (i.e., thinking, imagining, wishing, needing, desiring, intending, planning, choosing, and reasoning). After rating these specific states, participants were asked two questions to assess moral status: "How much does this cow deserve moral treatment?" and "How unpleasant would it be to harm this cow?" (1 = not at all; 7 = very much so). Participants were then fully debriefed.

Results

Preliminary analyses

To measure participants' moral concern for animals we summed the number of animals they selected in the moral circle task (range = 0–27). Three participants in the control condition

were more than two standard deviations below the mean on this task and accordingly were excluded, leaving 53 participants in the meat condition and 46 in the control condition. The two moral status items were significantly correlated ($r(99) = 0.58, p < 0.001$) and so were averaged to create a moral concern score. The two subscales of the mind rating task showed strong reliabilities (Cronbach's $\alpha > 0.84$) and so the relevant items were averaged to assess each mind dimension. These two dimensions were weakly but significantly correlated, $r(99) = 0.32, p = 0.001$.

Main analyses

As predicted, participants in the beef condition ($M = 13.5$) generated smaller moral circles than participants in the control condition ($M = 17.3$), $t(97) = 2.53, p = 0.013$. When participants ate meat they felt obliged to show moral concern for fewer animals. This supports our first hypothesis; consuming meat leads to a reduction in moral concern for animals.

Consistent with our predictions, participants in the beef condition ($M = 5.57$) viewed the cow as significantly less deserving of moral concern than participants in the control condition ($M = 6.08$), $t(97) = 2.20, p = 0.030$. This supports our second hypothesis; eating meat leads to a reduction in moral concern for the animal eaten. Turning to the attribution of mental states, participants in the beef condition ($M = 5.54$) did not attribute significantly less capacity for sensation to the cow than participants in the control condition ($M = 5.78$), $t(97) = 1.12, p = 0.271$. Further, no difference was found for the attribution of intellect: beef condition ($M = 5.51$) and control condition ($M = 5.58$), $t(97) = 0.27, p = 0.783$. Contrary to our third hypothesis, eating meat did not directly lead to a reduction in the meat animal's perceived capacity to experience suffering.

To examine how perceptions of the cow might be related to moral beliefs about animals, we correlated moral circle scores with moral concern and mind ratings. The results indicated that moral concern ($r = 0.45, p < .001$) and sensation ($r = 0.31, p = .002$), but not intellect ($r = 0.16, p = .118$), were significantly positively correlated with moral circle size. Because moral circle size significantly differed across conditions and significantly correlated with moral concern and sensation ratings, we tested for indirect effects of condition on these ratings via moral circle reduction following Preacher and Hayes' (2004) protocols. To establish the first step, condition (0 = control, +1 = meat) was regressed onto moral circle size. This revealed condition to be a significant predictor of moral circle, $B = -3.76$ ($\beta = -0.249$), $p = 0.013$. To examine the potential indirect effect of condition on moral concern via moral circle size, moral circle was entered alongside condition to predict moral concern. This revealed moral circle to be a significant predictor, $B = 0.064$ ($\beta = 0.417$), $p < 0.001$. A Sobel test indicated that this was a significant indirect effect, $z = -2.21, p = 0.027$. This was confirmed by a bootstrapped 95% confidence interval that did not include zero ($-0.50, -0.06$).

To examine an indirect effect of condition on sensation ratings, moral circle was entered alongside condition to predict sensation. This revealed moral circle to be a significant predictor, $B = 0.043$ ($\beta = 0.306$), $p = 0.003$. A Sobel test indicated that this was a marginal indirect effect, $z = -1.95, p = 0.051$. This was confirmed by a bootstrapped 95% confidence interval which included zero ($-0.33, 0.01$). This indicates that although there is no direct effect of meat consumption on judgments of sensation, there is a marginal indirect effect via a withdrawal of moral concern to animals.

Discussion

The current study provides direct evidence that eating meat leads people to withdraw moral concern from both animals in

general and the animal they ate. Further, it provides evidence that eating meat indirectly leads people to deny the animal they ate the mental states closely linked to the capacity to suffer. Combined, meat eating appears to have an important impact on the perception of meat animals, which are viewed as unworthy of moral consideration and lacking the mental states necessary to experience suffering. It appears that people may resolve the conflict between liking meat and caring about animals by withdrawing moral concern from animals and derogating the moral status and minds of the animals they eat.

The central finding of this research is that eating meat leads people to withdraw moral concern. Whereas previous research has demonstrated that willingness to eat meat can be reduced by moral concern for animals (Berndsen & van der Pligt, 2004; Hoogland et al., 2005; Rozin et al., 1997), this is the first study to experimentally demonstrate the inverse process; that eating animals reduces moral concern. Interestingly, in addition to denying a cow moral standing after eating beef, people also reported a reduced range of animals to which they felt obligated to show moral concern. In this sense eating meat appears to both narrow the breadth of moral consideration (fewer animals deserve it) and lessen the extent of moral concern (cows deserve less moral consideration).

This study additionally shows that moral concern is related to the attribution of mental states necessary to experience suffering, but not those necessary for thinking or planning. This effect was indirect, such that eating meat influenced sensation attribution via a reduction in moral concern for the eaten animal. This indirect effect may indicate that the retraction of moral concern precedes the withdrawal of mental states, with the latter serving as a justification for reduced moral concern. Stated otherwise, eating meat might lead people to withdraw moral concern from animals, which they then rationalize via a perceived reduction in animals' capacity to suffer. Thus, demoralization may serve to legitimate the withdrawal of moral status.

This study adds to a growing literature exploring the association between mind attribution and moral judgment (Gray et al., 2007; Gray & Wegner, 2009). More broadly, the findings of this study align with philosophical claims that it is the capacity to suffer, rather than the capacity to think, that is linked to moral concern. The current study goes beyond observing this association to suggest that people may shift their moral concern towards other beings – and their attribution of morally relevant mental states – in accordance with their motivations.

One concern with this study may be that it elicits a demand effect. Participants may realize that being asked to eat meat is related to subsequent animal ratings. We believe that this explanation is unsatisfactory for two reasons. First, if the results were due to a simple demand characteristic we would expect effects across all measures. Instead, we found a significant effect only for moral circle, moral concern, and (indirectly) mental states associated with sensation. The lack of any effect for intellect suggests that participants were not simply responding to a perceived demand. Second, it may well be the case that participants felt hypocritical expressing moral concern for animals when they had recently consumed meat. That a feeling of discomfort may lead participants to withdraw moral rights and deny meat animals' sensation suggests that rather than change their attitude to meat, people may alleviate their feelings by minimizing the animals' rights and capacity to suffer. This does not strike us as a demand characteristic, but rather the effect of interest.

The present study asked people to eat meat and then measured their moral concern and mind attribution. Alternatively, one may wonder whether manipulating the perceived moral status and

mental capacities of animals influences our willingness to eat meat. If we are confronted with compelling evidence that animals are sentient or persuasive arguments as to why they should be afforded moral rights, are we less willing to consume them? As noted earlier, there is some evidence that moral concerns lead to a reduction in willingness to eat meat. However, these studies have typically focused on vegetarians, who possess a range of other socio-political beliefs which may explain the effect (Allen, Wilson, Ng, & Dunne, 2000; Worsley & Skrzypiec, 1998). In order to robustly establish this relationship, beliefs about animal's moral status or mental life could be manipulated and willingness to eat meat measured. This possibility awaits future research.

Throughout this paper we have suggested that people may deny moral standing because their desire to treat animals morally conflicts with their positive attitude towards meat and meat eating. Although this study demonstrates that meat eating does indeed result in the withdrawal of moral concern from animals, it has not shown that this effect occurs via the alleviation of feelings of dissonance associated with eating animals. Accordingly, it is possible that other factors may account for the reduction in moral concern and sensitivity that occurs following meat eating. One possibility is that people logically infer from their attitudes and behavior towards meat that they do not grant moral rights to animals. This conclusion is in line with Self-Perception Theory, which states that people infer their attitudes and beliefs from their behaviors (Bem, 1967). Although our data cannot preclude this explanation, we think that a dissonance mechanism is more likely. While self-perception might lead people to conclude that they do not care about animal rights, it is harder to see how acknowledging that you eat beef leads to the conclusion that cows lack the capacity to suffer.

If dissonance does indeed underlie the observed pattern of results, we might expect that people who readily and regularly connect meat eating and animal suffering, and those who observe or participate in the immediate negative outcomes for animals, will experience increased dissonance. Livestock farmers, abattoir workers, and butchers are regularly exposed to the animal-meat link. Thinking about meat production serves to make issues of animal welfare more salient (Korzen & Lassen, 2010). Compared to the general public, meat workers may experience increased dissonance and accordingly decreased moral concern for animals. We started this paper with a paradox: that people both like animals and like eating animals. The current study suggests one way in which people may resolve these conflicting beliefs. When eating meat, people appear to suppress their moral concern, and this leads to a reduction in the perceived capacity of meat animals to suffer. It appears that when faced with the dilemma of participating in the potentially immoral treatment of an animal, people shift the animal's moral status (Epley & Waytz, 2009; Gray et al., 2007; Gray & Wegner, 2009; Rozin, 2007).

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