Reply to PCIRR Stage 2 decision letter reviews #545: Bastian et al. (2012) replication and extension

We would like to thank the editor and the reviewers for their useful suggestions and below we provide a detailed response as well as a tally of all the changes that were made in the manuscript. For an easier overview of all the changes made, we also provide a summary of changes.

Please note that the editor's and reviewers' comments are in bold with our reply underneath in normal script.

A track-changes comparison of the previous submission and the revised submission can be found on: https://draftable.com/compare/dIiDENAktsch

A track-changes manuscript is provided with the file: "PCIRR-S2-RNR-Bastian-etal-2012-Replication-Manuscript-v5-G-track-changes.docx" (https://osf.io/g8nqm)

Summary of changes

Below we provide a table with a summary of the main changes to the manuscript and our response to the editor and reviewers:

Section	Actions taken in the current manuscript
General	R1: Corrected the misspelling of "ORCID" on the title page. Changed the abstract to focus on "resolving" the meat paradox rather than maintaining it. Correct typos in the abstract regarding an apostrophe and "*r* =".
Methods	R1: Reorganized the Method section to reduce redundancy and make certain aspects such as power analyses, participant payment, exclusions, manipulation checks, and the order of the procedure clearer.
Results	R1: Added the missing descriptive statistics for Study 1. Elaborated on the nature of the animal-level analyses. Added additional scatterplots and reworked the original one to include more details. Reworked the Study 2 violin plot to be more legible. Changed the wording of how we evaluated our evaluation criteria to be more understandable. Added in a summary of our additional analyses. R3: Changed the wording of how we evaluated our evaluation criteria to be more understandable. Added in a summary of our additional analyses.

Section	Actions taken in the current manuscript
Discussion	R1: Changed the phrasing to be clearer on the role of motivated mind denial in resolving (rather than maintaining) the meat paradox. Added a sentence explaining the role of culture and citation for how veg*ns might respond in this paradigm. R2: Changed the phrasing to be clearer on the role of motivated mind denial in resolving (rather than maintaining) the meat paradox. R3: Added a new paragraph discussing how limitations from the original studies could also apply here, including measurement biases and the selection of animals. Discussed why our results might differ from other past work. Changed the phrasing to be clearer on the role of motivated mind denial in resolving (rather than maintaining) the meat paradox.
Supplementary materials	R1: Corrected a typo regarding the wording of the Study 2 manipulation. General: Moved the participant-level analyses to the main manuscript.

Note. Ed = Editor, R1/R2/R3 = Reviewer 1/2/3

We note that we are not familiar with the titles and ranks of the reviewers, and looking for that information proves tricky. To try and err on the side of caution, we refer to all reviewers with the rank Dr./Prof. . We apologize for any possible misalignments and are happy to amend that in future correspondence.

Reply to Editor: Prof. Chris Chambers

> **Three of the four reviewers from Stage 1 were available to evaluate your Stage 2 submission. As you will see, the reviews are overall positive, but with some issues to address concerning the Discussion as well as some presentational matters. In revising, please avoid any changes to the approved Stage 1 parts of the manuscript unless doing is necessary to improve clarity or correct an error. I will assess your revised manuscript and response at desk, and hope to be able to reach a final decision with[out] requiring further in-depth review.**

Thank you for the reviews obtained, your feedback, and the invitation to revise and resubmit.

Reply to Reviewer #1: Dr./Prof. Ben De Groeve

Thank you for inviting me to review the Stage 2 Registered Report documenting a direct replication of Studies 1 and 2 of Bastian et al. (2012) on the motivated denial of food animal minds. I evaluate the different components of the report based on the guidelines for PCI reviewers, making a distinction between positive feedback and critical feedback, concerns and suggestions (no major issues).

1. Positive feedback

- **The title is clear and the abstract presents main findings compared with original findings.**
- **The introduction builds on relevant recent and past research (i.e., on the meat paradox), the motivation of the study is clear (i.e., high-power replication of Studies 1 and 2 of Bastian et al., 2012) and the hypotheses and predictions are clearly presented in Table 1 (p.9).**
- **In general, the materials and methods are clearly described. Table 2 allows to easily compare the replication sample with the original samples in Bastian et al. (2012), Table 3 clearly summarizes the design and materials of both studies, Table 4 summarizes deviations between the original and replication studies and Table 5 provides details on replication closeness. The data analysis strategy is appropriate and shows that the authors gave it considerable thought.**
- **Concise reporting of the results and good visualizations.**
- **The discussion of the results is overall adequate; relevant past and recent research is taken into account and future directions are relevant as well. The scientific significance of the study is clear.**
- **References are appropriate.**

Thank you for the positive feedback, and for the constructive criticism and comments below that have helped improve the paper.

Critical feedback, concerns and suggestions
2. p.1: 'OCRID', Needs to be 'ORCID'.

Response: Thank you for pointing out this mistake.

Action: We have corrected these occurrences on page 1.

3. Abstract:
- "original: 80 [.63, .90]": "r =" is missing

- "its' mental capacities": remove apostrophe
- I think the meat paradox is not maintained (first and forelast sentence in abstract), but resolved by motivated denial of food animals' minds (see also comment below).
- Not sure whether it's necessary to also mention the OSF link in the abstract.

Response: Thank you for the feedback.

We agree that this expression is subject to further precision, and that the culinary practice of meat consumption is maintained by denying the food animals' minds, which serves as the psychological solution to the meat paradox. Although the meat paradox persists as a social phenomenon, the paradox as a source of dissonance is resolved via dissonance reduction when individuals eat meat.

In providing the OSF link in the abstract we aimed to improve the accessibility of the data, code, and materials to encourage public review and oversight, and we believe that inserting links in the abstracts will help accomplish this. We have previously done so with all our other PCIRR submissions and Stage 2 accepted manuscripts (four so far).

Action: We added "r =" and removed the apostrophe in the corresponding location.

We attempted to reformulate occurrences of "maintaining the meat-paradox" in the first and last sentence of the abstract:

- "Bastian et al. (2012) argued that the 'meat paradox'–caring for animals yet eating them– ~~is maintained by~~ exemplifies the motivated moral disengagement driven by a psychologically aversive tension between people's moral standards (caring for animals) and their behavior (eating them). "
- "Our findings support the idea that the meat paradox ~~is maintained by~~ is resolved through people's motivated denial of food-animals' minds. "

We kept the OSF link in the end as we believe it provides valuable information and also signals accessibility of data and materials.

Materials and methods

M&M: Power analysis
p.11: "Results from power analyses are summarized below."
This statement seems rather vague to me. Where is the summary below?
Or do the authors refer to the Supplementary Materials?

Response: Thank you for pointing this out, that was an oversight. We mentioned in the first paragraph on page 11 that we provided more details in the supplementary material.

Action: This sentence has been deleted.

5. p.11: In the paragraph on two notes about the study design the flow is a bit broken. It is also somewhat confusing because this section is about power analyses and sample sizes and there is a section about the study design on p.13.
To maintain focus, perhaps the authors could begin the paragraph by writing that they eventually decided to gather 1000 participants and then mention the reasons (i.e., uncertainty related to multi-level nature of the data and combining Studies 1 and 2)?
Relatedly, it is not entirely clear to me why combining Studies 1 and 2 into a single data collection would require a larger sample. (Is it to take into account potential carry-over/attenuation effects?)

Response: Thank you for the comment and helpful suggestion.

We were indeed trying to address potential effects from that design due to each participant responding to two sets of dependent variables from two studies, and the counterbalancing of the order of the two studies.

Action: We revised the Power analysis section so that it starts with our final decision of sample size (1000). Then we pointed out this sample size addresses any possible loss of power that may have resulted from the deviations in our study design from the original studies. We also elaborated on the second point about our concern for potential carry-over effects.

M&M: Participants
6. p.12: "Assignment pay was $1.90 USD."
To reflect chronological order, I would write this sentence at the end of the paragraph about pretesting survey duration and adjusting payment.

Response: Thank you for your suggestion. We agree that it makes more sense to describe the final payment amount at the end of the paragraph to make it clearer that this was the pay after initial adjustments.

Action: The sentence was moved to the end of the paragraph.

7. M&M: Design and procedure
p.15: "Both Studies 1 and 2 in Bastian et al. (2012) were combined into a single survey, and the presenting order of Studies 1 and 2 was randomized."
This was just mentioned on p.13. I recommend to remove this sentence and/or rephrase the previous sentence: "Then, participants began Studies 1 and 2 in a random order."
p.15: The paragraph on the procedure already mentions some details about Study 1 and 2 Materials, which can be replaced to their respective sections below to avoid repetition. Or are these details mentioned here to communicate the design of both studies? In any case, I suggest to avoid too repetitive language. For example, in the section 'Study 1 Materials', the authors could also write something like:
"The 32 animals in our survey were the same as the ones in the original study except for 2 animals (...). For each of the 8 randomly selected animals, participants were asked 14 questions, as shown in Table 3."

Response: Thank you for the suggestion.

Action: First, we removed the sentence under the first “Design and Procedure” paragraph that mentioned the random order of studies. Next, we moved the detailed information about the procedure of each study into their respective “Materials” paragraph and removed any redundant information.

8. M&M: Study 1 and 2 Materials
I recommend to rename Table 3 as "Summary of study design and materials", because the authors often refer to this table in this section.

Response: Thank you for the suggestion.

Action: We changed accordingly.

> **9. Minor limitation/future research direction related to the supplementary (p.25): I wonder why the authors used 'it' instead of 'this cow' in Version 2: cow as food animal? Theoretically, this type of objectifying language could (further) increase mind denial (Leach and Dhont, 2023). The authors did not write 'it' for Version 1: lamb as food animal. Given that the type of animal didn't have a differential effect on mind denial (supplement), the use of 'it' probably didn't play a significant role either (unless a weaker mind denial for cows (vs. lambs) was counter-acted by the use of 'it' in the cow as food condition). Of course, writing about a cow or lamb as food/meat product is already objectifying. How we talk about animals may affect our perceptions of animals (Kunst and Hohle, 2015; Leach and Dhont, 2023); different types of objectifying language (e.g., giving an animal a name vs. a number) may have different effects, which could be considered for future research.**

Response: Thank you for catching this. This was a typo in the Supplementary Materials. In the actual study, “this cow” was used, not “its”. We verified this by checking the Qualtrics survey. We have corrected the error in the Supplementary Materials.

> **10. Manipulation checks**
> **p.16: I suggest to replace the phrase "(...) after rating the mental capabilities of each animal." to the end of the first sentence of this paragraph to make this immediately clear.**
> **Please also report information about the effectiveness of the manipulations, either in this section, the results section or the supplementary.**

Response: Thank you for the suggestions. We agree that it makes sense to describe the exact timing of the manipulation check at the beginning of the paragraph rather than at the end. For the second point, nine participants failed at least one manipulation check.

Action: First, we moved the phrase to the first sentence, which now reads:

> “In order to ascertain whether participants carefully read the manipulation and to assess whether the manipulation was effective, we included manipulation checks in each condition that participants completed after rating the mental capabilities of each animal.”

We now note that nine participants failed at least one manipulation check in the Method section.

11. M&M: Deviations from the original
I suggest to write: "We summarized other (or additional) deviations between the original (...)"

Response: Thank you for the suggestion.

Action: We have adapted your suggested wording:

> "We summarized additional deviations between the original study and our replication in Table 4."

12. Evaluation criteria for replication findings

Perhaps a matter of taste, but I think this section is not strictly necessary because the evaluation criteria seem rather intuitive and are preregistered anyways. When discussing the results, you can simply refer to these preregistered evaluation criteria in the supplementary to establish that the replication was successful.

Response: Thank you for the suggestion for making the manuscript more concise. Although we appreciate your perspective, we would prefer to keep the criteria in the main manuscript. First, this section was present in the earlier stages of the registered report, and we would prefer to stay consistent across the stages when possible. Second, although we are glad you find the criteria to be intuitive, we want to be sure that readers understand how we will be evaluating the replication without having to navigate to a separate document.

13. Table 5: I think it would be more accurate to write that the vegetarians and vegans were excluded from participation in the survey, rather than writing that they were excluded "at the very beginning" because the latter may be interpreted as exclusion based on some explicit measurement at the very beginning of the survey.

Response: Thank you for this suggestion. We agree there is ambiguity in our current expression regarding the exclusion method.

Action: We have reformulated the expression in Table 5 as follows:

> "Vegetarians were excluded ~~at the very beginning of~~ from participation in the survey, instead of at the end of the survey."

14. M&M: Outliers and exclusions

This section seems redundant because:
- outliers are not discussed
- the recruitment filter to exclude vegetarians and vegans was already discussed in the section 'Participants'
- the second paragraph talks about an exclusion that didn't occur and was already mentioned in the section on attention checks. The only new information is the question at the end of the survey to verify whether participants are not vegetarian or vegan, but no information is given about the results or the effectiveness of the recruitment filters. Perhaps 'exclusions' can be addressed in the section 'Participants'.

Response: Thank you for the suggestion. We agree.

Action: We removed the "Outliers and exclusions" section because most of the information is presented elsewhere. We moved the information regarding the veg*n filter to the participants section and report the requested information about the number of participants who reported at the end of the survey that they were veg*n. We now report information about the number of self-reported meat eating participants (16) and how they were excluded in the Participants section.

15. Results
Study 1
p.22:
- the M and SD is not shown for edibility.
- Why is r(30) if the sample size is 959?

Response: Thank you for pointing out the missing information regarding the descriptive statistics and the lack of clarity regarding the degrees-of-freedom.

Action: We filled in the mean and SD for edibility in Study 1. The degrees-of-freedom are 30 because these analyses are at the animal-level. Thus, the *N* is 32 animals, and *N* - 2 is 30. We realize that the nature of the animal-level analyses needs to be clearer, and we added more elaboration about this in the manuscript:

> "As in Bastian et al. (2012), we aggregated responses across 959 participants and calculated animal-level means for the four dependent variables, resulting in a practical sample size of 32 animals. Across the 32 animals, we obtained the mean mental capacity (M = 4.53, SD = 0.76), edibility (M = 2.80, SD = 1.66), negative affect (M = 4.00, SD = 1.38), and moral concern scores (M = 3.47, SD = 1.22)."

16. Figure 1:
- Perhaps the correlation coefficient can also be shown in Figure 1?
- Is it possible to also include scatterplots for negative affect and moral concern in Figure 1?
An image says more than words and it might be useful for communication purposes.
- Minor suggestion: I don't know how easy it is to make these plots, but perhaps if you put the scatterplots next to each other and make the plots more elongated (shorter x-axis) you might be able to show the names of all animals with their data points?

Response: Thank you for the suggestions regarding visualization of the correlations.

Action: We created new scatterplots for negative affect and moral concern. We reworked all the scatterplots to include some basic statistics (including *r*) and changed the x-axis range and other settings to allow all the animal labels to be displayed.

17. Study 2
p.23
- What does "yet with signal and in the same direction." mean? I know this is explained in the supplementary, but it might not be immediately clear for readers.

Response: Thank you for the comment.

Action: We reformulated the sentence to:

"yet ~~with signal~~ the effect was detected and in the same direction."

18. Figure 2:
- The writing in Figure 2 is difficult to read (small size, a bit blurry)
- I suggest to include pictures of the cow and the lamb to make the results more visually appealing or to clearly refer to Figure S1 in the supplementary materials when discussing Study 2 Materials.

Response: Thank you for the suggestions to make the manuscript more accessible and visually appealing.

Action: First, we reproduced the Figure to increase the resolution and make the text larger and darker. When describing the images in the Study 2 Materials, we now clearly refer readers to Figure S1.

19. No information is given on the 'additional' analyses mentioned in the Materials and Methods section (concerning potential order effects, etc.). Even if there are no notable results, I think you should briefly address it in the the section 'Materials and Methods' or 'Results' and refer to the Supplementary Materials for a full description.

Response: We appreciate your request to provide at least an overview of the results of additional analyses. Given that two reviewers made this suggestion, we are happy to oblige.

Action: At the end of the results section, we now provide an overview of the additional analyses. We provide the results for participant-level analyses because they add some nuance to the relationships found in Study 1:

> "We also examined the additional analyses aimed to further explore the robustness and generalizability of the results. First, we conducted participant-level analyses for Study 1. Mean scores for mental capacities, edibility, negative affect, and moral concern were collapsed across animals for each participant. We then conducted Pearson correlations to assess the relationship between perceived mental capacities and perceived edibility, negative affect, and moral concern at the participant level. We summarized the results of these analyses in Table 6. Greater perceived mental capacity was significantly associated with less perceived animal edibility. Greater perceived mental capacity was also associated with feeling worse about eating animals and a greater sense that it would be morally wrong to eat the animal. The effects were in the same direction as the animal-level analyses and also support the hypotheses, although they were smaller in size."

For the analyses regarding animal order and study order, we summarized the analyses in words and refer readers to the Supplemental Materials for the statistical details:

> "We also conducted analyses exploring whether the order of animals presented in Study 2 moderated the effects on mind attribution and if study order moderated the effects of either study. We did not find any indication for order impacting any of the results, or that whether the cow or lamb was presented first in Study 2 moderated the effects on mind attribution. We provided more details about the order analyses in the Supplemental Materials."

20. Discussion
"In short, the work reinforces the view of the 'meat paradox' as grounded in reliable empirical data."
More specifically, the work improves empirical support for 'motivated mind denial' (as a mechanism to resolve the meat paradox). Put differently, the current reference to the meat paradox ("caring for animals yet eating them") might be somewhat confusing because the data suggests that viewing an animal as edible makes people less caring (i.e., edibility is associated with lower mind attributions, which in turn is associated with less moral concern) - which resolves the meat paradox.

Response: Thank you for this comment. We agree that the phrasing could be clearer on the role of motivated mind denial in resolving (rather than maintaining) the meat paradox.

Action: The sentence has been changed to:

> "In short, the work provides further empirical support for the view that motivated mind denial can be a mechanism for resolving the 'meat paradox'".

21. p.26: "motivated mind denial in such a paradigm speaks either to the strength of the drive to maintain the meat paradox"
I think 'maintain' should be 'resolve'. There does not seem to be a drive to maintain care for animals while eating them (i.e., the meat paradox), rather a drive to maintain the use/view of animals as food and care less about them as a consequence (resolving the meat paradox).

Response: Thank you for this comment. As mentioned above, we agree that the meat paradox is to be resolved rather than maintained when individuals engage in meat consumption.

Action: We reformulated the sentence as follows:

> "The fact that we observed motivated mind denial in such a paradigm either speaks to the strength of the drive ~~to maintain the meat paradox~~ for moral disengagement in the face of ~~blatant inconsistency~~ the meat paradox, or to the irrelevance of filler tasks in such paradigms. "

22. p.27: "Vegetarians and vegans may even be motivated to show the opposite pattern of mind attribution,"

You mean that vegetarians and vegans may be motivated to overestimate mind in animals to increase moral concern? This could be expected based on theory. Somewhat surprisingly, though, Leach et al. (2023) found that meat-eaters and veg*ns show largely the same tendency to underestimate animal minds.

Response: The claim that "Vegetarians and vegans may even be motivated to show the opposite pattern of mind attribution," is based on Leach et al. (JEP:G, 2023), which documents that veg*ns portray animals reared for food as having more sophisticated minds than do meat eaters, when recalling information from memory (see Experiment 5). Perhaps you are thinking of Leach et al. (Cognition, 2023). The findings of this work also support the claim, as they show that veg*ns generally attribute more sophisticated minds to animals reared for food compared to meat-eaters. As the reviewer correctly states, Leach et al. (Cognition, 2023) also shows that veg*ns and meat-eaters are largely the same in how they update their beliefs in response to new evidence, failing in equal measure to update to the degree that is required by normative models. In this way, their posterior beliefs both underestimate the minds of animals compared to what they ought to. The claim we are making does not refer to veg*ns tendency to underestimate animal minds compared to what is dictated by normative standards, but rather to the overall differences between veg*ns and meat eaters. For this reason, we believe the passage accurately represents the empirical findings. That said, we are happy to direct interested readers to Leach et al. (Cognition, 2023) for further information.

Action: Added Leach et al. (Cognition, 2023) to discussion of differences between veg*ns and meat-eaters.

23. Concerning the role of culture, I thought you might find a difference in the perceived edibility of Kangaroos, as Bastian et al. (2012) recruited Australian participants. It does seem like Kangaroos were seen as more edible in Study 1 of Bastian et al. (2012) compared to your replication study. You could use this as an example to clarify your point, though there are also many other examples of course. The study of Piazza and Lougnan (2016) about attitudes towards a fictional animal is also relevant.

Response: Thank you for this suggestion. We like the idea and have added a brief mention of it to illustrate relevant cultural differences with this example:

> “For example, the Australian sample from Bastian et al. (2012) seemed to rate kangaroos as more edible than in our American sample, suggesting that culture may influence perceptions of edibility.”

> **24. Conclusion**
> **Same comment as before on "(...) and reinforces the view of the meat paradox as grounded in reliable empirical data". I suggest to write something like: "(...) in the light of expanding research on how people resolve the meat paradox."**

Response: Thank you for the suggestion. As noted before, we agree with your reasoning.

Action: We adapted your suggested wording:

> “The work contributes by increasing confidence in the reliability of these findings in the light of expanding research on how people resolve the meat paradox.”

Reply to Reviewer #2: Prof. Brock Bastian

> **Thank you for the opportunity to review this report. It was certainly reassuring to see our findings replicated and thank the authors for their work in putting our origional predictions to a more robust test. I had few comments regarding the current manucript and feel that is is publication ready.**

Thank you for your praise and your time.

1. **The only thing I noted was one statement in the dicussion:**

> **"The fact that we observed motivated mind denial either speaks to the strength of the drive to maintain the meat paradox in the face of blatant inconsistency or the irrelevance of the filler task..."**
>
> **I don't think this says that it is supposed to? People are motivated to solve not maintain the meat paradox....so perhaps replacing 'maintain' with 'solve' here would fix this?**

Response: Thank you for pointing this out. We agree with you that people are motivated to resolve, rather than to maintain, the meat paradox.

Action: We reformulated the sentence as follows:

> "The fact that we observed motivated mind denial in such a paradigm either speaks to the strength of the drive ~~to maintain the meat paradox~~ for moral disengagement in the face of ~~blatant inconsistency~~ the meat paradox, or to the irrelevance of filler tasks in such paradigms. "

Reply to Reviewer #3: Dr./Prof. Florian Lange

> **As far as I can tell, the authors conducted the replication study as registered and found results consistent with the original study. They also conducted potentially interesting additional analyses (but due to a lack of integration of the corresponding results into the main text, it is hard to see what exactly those analyses add).**

Thank you for your time and feedback, they have helped us further improve the manuscript.

> **In my opinion, the following issues should be addressed.**
>
> **1. My main concern is that I did not see much discussion of the limitations of the present methodology. The authors do a great job demonstrating similarities with and deviations from the original study, but any limitations of the original study also affect the evidentiary value of this novel data point and should be discussed in order not to provide readers with the wrong impression that the original and present results have been obtained with perfect validity. Can the results of the correlational test, for example, be due to response styles or common method variance? What are the psychometric properties of the measure the authors used to assess "perceived mental capacities" of animals, that is, how confident are we that we can validly and reliable assess such a perception? Also, to which population of animals are the findings from Study 1 supposed to generalize? I don't think the animals have been randomly sampled from the animal kingdom. To what extent would a bias in the sampling of animals limit the generalizability of results? Would we get the same results with 30 invertebrates? In other words, can the correlation, albeit replicable, be a mere artifact of the selected animals?**

Response: Thank you for pointing out this important omission. With any close replication, it is true that limitations of the original approach are reproduced. We agree that these points deserve discussion in the paper.

Action: In the "Implications, limitations, and future directions" subsection of the Discussion, we have added the following paragraph:

> "Although the current work successfully replicated the results of Bastian et al. (2012) Studies 1 and 2, the close nature of replication means that any limitations from the original studies are likely to be present in the current work. Readers may be concerned about response biases (Wetzel et al., 2013) or common method variance (Lindell & Whitney, 2001) accounting for the results of Study 1. Such factors might produce spurious relationships between constructs at the level of the participant. However, these ought to be minimized when aggregating data to a higher level, as we have done here when collapsing scores to the level of the animal. Given this, it seems unlikely that response biases or common method variance issues could account for the observed relationships. Another aspect that warrants discussion is the selection of the animals in Study 1. How one approaches this does seem to affect the observed relationships. Possidónio et al. (2019) did not observe an association between edibility and perceptions of mind when sampling an overabundance of mammals and birds. This implies that the present data cannot be generalized to all sets of animals. That said, we maintain that the results of Study 1 nevertheless capture an important aspect of how people think about a relevant and important set of animals. They feature a range of groups (mammals, birds, fish, crustaceans, amphibians, reptiles, mollusks, and insects) and include many of the most salient animals to the English language (13 of the 20 most frequently-mentioned in the Google Ngram Corpus; Lin et al., 2012). Future work may wish to systematically explore how the findings vary when selecting different groups of animals."

> **2. The same applies to the integration with other literature. The authors mention a study by Possidónio et al. that did not obtain a correlation between perceptions of edibility and mental capacity. How can they account for this? In the end, I think the authors want to make conclusions about this relationship (between characteristics of human perceptions) as it exist in the real world (and not about the relationship observed between variables in the data by Bastian et al.), so the discussion of evidence (and limitations, see above) should go beyond the replicated study.**

Response: Thank you for the suggestion. We agree that it is important to integrate our findings with the past literature and to consider why our results (and the original's) differ from Possidónio et al. (2019). Our stance is that the selection of animals is indeed an important factor, and that differences between our findings and Possidónio et al. (2019) likely come down to this. We also agree that this poses constraints on the generalizability of the present findings. They may only apply to those animals that we are most familiar with and are most common to the English language.

Action: Please see the changes made in response to the last question, which addresses this point.

3. As far as I can see, there is no reference to the results from the additional analyses in the main text of the manuscript. I think this should be changed. I assume these additional analyses where conducted to further inform the interpretation of the results (e.g., in terms of robustness/generality), so the authors should take them into account when interpretating their data.

At the end of the results section, we now provide an overview of the additional analyses. We provide the results for participant-level analyses because they add some nuance to the relationships found in Study 1:

> "We also examined the additional analyses aimed to further explore the robustness and generalizability of the results. First, we conducted participant-level analyses for Study 1. Mean scores for mental capacities, edibility, negative affect, and moral concern were collapsed across animals for each participant. We then conducted Pearson correlations to assess the relationship between perceived mental capacities and perceived edibility, negative affect, and moral concern at the participant level. We summarized the results of these analyses in Table 6. Greater perceived mental capacity was associated with less perceived animal edibility. Greater perceived mental capacity was also associated with feeling worse about eating animals and a greater sense that it would be morally wrong to eat the animal. The effects were in the same direction as the animal-level analyses and also support the hypotheses, although they were smaller in size."

For the analyses regarding animal order and study order, we summarized the analyses in words and refer readers to the Supplemental Materials for the statistical details:

> "We also conducted analyses exploring whether the order of animals presented in Study 2 moderated the effects on mind attribution and if study order moderated the effects of either study. We did not find any indication for order impacting any of the results, or that whether the cow or lamb was presented first in Study 2 moderated the effects on mind attribution. We provided more details about the order analyses in the Supplemental Materials."

We also briefly interpret the analyses in the first paragraph of the discussion.

Minor comments

1. Please specify how gender was assessed. Was "other" the gender category participants' had to select when not identifying as male or female? Is it possible to avoid othering here?

Thanks for the comment. In our data collection gender was indicated by participants on a multiple-choice question with four options: "Male", "Female", "Other", and "Rather not disclose". We are sorry that we have no further information at the moment for those who indicated non-binary gender. We would like to keep this in mind and make our surveys more inclusive in future research.

2. This can of course be a coincidence, but is it correct that both age M and age SD have two zeros after the decimal point?

Response: Thanks for checking this. The age Mean = 39.99583 and age SD = 13.99605, so they were rounded to M = 40.00 and SD = 14.00 respectively.

3. I do not understand the phrase "yet with a signal" and have never encountered it in empirical articles before. Consider revising.

Response: Thank you for the comment. This was based on the lingo used by the LeBel et al. replication evaluation categorization.

Action: We have reformulated the sentence as "yet ~~with signal~~ the effect was detected and in the same direction."

4. I don't think that the conclusion that this work reinforces the view of the meat paradox (p26) follows from the present data. It should be removed or substantiated.

Response: Thank you for pointing out this confusing wording. We agree that the finding is instead about resolving the meat paradox via motivated mind denial.

Action: In response to your comment and those of the other reviewers, we reworded the end of this paragraph to display our interpretation more clearly:

> "In short, the work provides further empirical support for the view that motivated mind denial can be a mechanism for resolving the 'meat paradox'."

We also changed language throughout the manuscript to make it clear that motivated mind denial resolves the meat paradox.