**Peer Review and Communication History**

**MS Title**: Moral Judgments Impact Perceived Risks From COVID-19 Exposure

**Author Names**: Cailin O’Connor, Daniel Relihan, Ashley Thomas, Peter H. Ditto, P. Kyle Stanford, James O. Weatherall

**Submitted:** Jul 19, 2022

**Editor First Decision**: Revise & Resubmit

Oct 17, 2022

Dear Cailin O’Connor,

I have now received two reviews of your manuscript, “Moral Judgments Impact Perceived Risks From COVID-19 Exposure”, from researchers with special expertise in moral judgment. I also independently read the manuscript before consulting these reviews. The reviewers had mostly positive reactions to your manuscript. I agree that your manuscript has important strengths and also that there are some issues that need to be addressed. I therefore encourage you to submit a revised version for further consideration at Collabra: Psychology.

The reviewers did an outstanding job in their reviews. I will highlight issues I think are particularly salient here. In your resubmission, please include a document with a point-by-point response to both the points I list here and the reviewers’ comments, outlining each change made in your manuscript or providing a suitable rebuttal.

1. Reviewer 2, while enthusiastic about the MS overall, wanted more on what you think the important psychological mechanisms are (and therefore how broadly you think these results apply). You may want to collect new data if you think that you can provide evidence for some mechanism over another, or rule out some mechanisms you think aren’t responsible. But I am not insisting on this; I think it would also be fine to simply discuss what mechanisms you think are more or less plausible.
2. Reviewer 2 also wanted to you to be clearer about how you think the current findings update or extend existing theory. To be clear, it is fine for a paper at Collabra not to do that (e.g., a paper could test an exisiting theory, or, indeed, to present some interesting descriptive observations without a strong theoretical focus). But, I do think it’s important to say whether you think your findings do or don’t.
3. Reviewer 1 had some very helpful suggestions for methodological clarifications and limitations of the sample that should be acknowledged.
4. Like Reviewer 2, I felt that the model specifications were sometimes difficult to follow, and that a table would help.

In summary, I think this is a promising manuscript and, I hope you will revise it for further consideration at Collabra: Psychology. I look forward to receiving your revision. Please see the instructions below for submitting your revision.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This may be the last opportunity for major editing, therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please contact the editorial office at editorialoffice@collabra.org.

Sincerely,

Yoel Inbar

# Reviewer 1

##### Rating scale questions

|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| --- | --- | --- | --- | --- | --- |
| The study/studies in this manuscript have strong construct validity (good measures and/or manipulations of the constructs the authors wish to study). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong statistical validity (appropriate statistical tests, assumptions are clear and reasonable, no statistical errors, appropriate statistical inferences, etc.). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong internal validity (any causal claims or implications are well-justified, alternative explanations are thoroughly considered, etc.). (Choose “Neutral” if this is not an empirical manuscript, or no causal claims are made or even vaguely implied.) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong external validity (authors appropriately constrain their conclusions based on the limits of the generalizability of their findings to other contexts (including from lab to real world), other populations, other stimuli or measures, etc.) |  | ✔ |  |  |  |

##### Open response questions

### Please write your review here. The author(s) will see this review. Your identity will not be revealed to the authors unless you also include your name (i.e., sign your review) in this box. It is up to you whether to reveal your identity or not, either is fine.

The purpose of this paper was to understand what drives risk assessments during a pandemic. Specifically, the author(s) investigated the effects of moral judgment, importance, and intentionality with COVID infection risk assessments. Key findings were that morally justified activities and unintentional COVID exposures were seen as safer compared to less justifiable and intentional exposures. Given ongoing concerns surrounding COVID-19 understanding relevant decision making processes and perceptions are valuable. Below are some concerns that arose while reading the article.

With COVID-19 being a polarizing partisan topic the lack of conservatives within the sample is a liimitation. While I appreciate the specific analyses focusing on partisanship, only 16.77% (approx. 141 individuals) selected any conservative option. I feel this should be more adequately addressed in the limitations portion.

Another area that is unclear to me is the pretesting. You state that “[p]rior to the main study, a pretest was conducted with the goal of ensuring that the conditions in our vignettes indeed elicited the judgments about morality, importance, and intentionality that we expected.” This makes perfect sense (we do this with misinformation studies) and seems to be mostly achieved. However, there appears to be ambiguity between the morally good and neutral conditions as seen with this statement“[t]here were significant differences in moral judgments between morally good and morally neutral conditions for two of the six vignettes.”. This is also seen with the Peter intentionality vignette. Why wasn’t this further explored before moving to the main study?

Additionally, I may be misunderstanding this but why were pseudo-random order for vignettes used instead of truly randomized orders? It is discussed as controlling order effects but with the stimuli remaining the same I do not see how this concern is actually addressed as the order remained the same across all participants.

**Additional comments**:

1. “It is also possible for small effects to have a significant impact when repeated over time (Prentice & Miller, 1992). That is, if these moral judgments influence many small decisions about exposure across a population, they might significantly influence emergent group behavior.”

Due to the small effects found I did find myself questioning the real world impact these findings may have, although this is an important point to raise. How is this informative for policy makers though?

1. Can the authors elaborate on why the minimum amount of time for the main study was 5 minutes? The mean time in the pretest was 682 seconds with a SD of 422 seconds. Am I correct in stating that this could mean someone that finished within one SD of the mean pretest time may be excluded from the main study? I am aware this was determined prior to data analyses but am curious as to why this threshold was selected. Further, keeping it consistent with either minutes or seconds would be ideal from the perspective of the reader.
2. May be cleaner if you combine the moral, importance, and intention judgement into one sentence for the main study, although not necessary.
3. Just noting that I was unable to look at the supplementary materials.
4. Lastly, there were a few typos. For instance, on pg. 18 “58.% %” and pg. 19 “F(1, 5) = 3.7`, p = .114”

I always sign my reviews,
Jabin Binnendyk

# Reviewer 2

##### Rating scale questions

|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| --- | --- | --- | --- | --- | --- |
| The study/studies in this manuscript have strong construct validity (good measures and/or manipulations of the constructs the authors wish to study). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong statistical validity (appropriate statistical tests, assumptions are clear and reasonable, no statistical errors, appropriate statistical inferences, etc.). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong internal validity (any causal claims or implications are well-justified, alternative explanations are thoroughly considered, etc.). (Choose “Neutral” if this is not an empirical manuscript, or no causal claims are made or even vaguely implied.) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong external validity (authors appropriately constrain their conclusions based on the limits of the generalizability of their findings to other contexts (including from lab to real world), other populations, other stimuli or measures, etc.) |  |  |  | ✔ |  |

##### Open response questions

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The authors report one primary study (and one pretest) examining whether and how factors that are not relevant to objective risk (specifically moral acceptability, importance of the behavior, and intent) may nonetheless influence perceived risk associated with exposure to COVID-19.

My main concern regards the strength and clarity of the Introduction. I like how the authors open with the various real-world examples to help convey the intuition underlying the question and the applied importance of these results. However, I found the justification for the hypotheses somewhat lacking and I believe that the authors could strengthen and clarify their claims in several respects. Specifically…

Upon finishing reading the Intro, the main question I was left with was what new theoretical domain was being charted by these studies. I appreciate the timeliness and application to understanding risk factors associated with COVID-19, given its yet enduring presence in our lives, but does the context of COVID-19 afford the authors some additional insight into psychology of these risk judgments that we wouldn’t otherwise have from past research? The authors note that the link between morality and importance “is likely to be exacerbated during a global pandemic” (p. 5), which is helpful, but I wonder if this is the only or even the primary benefit of examining these effects in the context of a pandemic. Is it only that every action potentially carries some risk of harm? What about the addition of new, rapidly developing norms about how to behave (that were often in conflict with previous social norms)?

Along similar lines, the authors argue that, during a pandemic, important actions may become suffused with moral considerations, given that exposure to infection can create negative outcomes (ie harm). All actions can be imbued with morality during a pandemic. It’s unclear whether these increased moral considerations are necessarily reserved just for important actions or whether all actions become linked with moral concerns. Really, any action during a pandemic involving potential proximity to others would have a risk of infection and therefor involve potential harms and moral consideration. Is there some reason that important actions (vs. unimportant but still social actions) should be especially prone to becoming linked with morality?

One piece that seems to be missing is an overarching theoretical framework that motivates the hypotheses in the first place: why would moral concerns, importance, and intent influence risk perceptions? The authors provide a quick hint, saying that risk judgments may reflect “wider judgments about whether an individual ought to engage in a behavior” (p. 3). Intuitively I think I agree with this, but without further explanation, it is difficult to evaluate the justification for this claim.

I wonder if one possible framework is focusing on judgments of the person doing the action, in line with recent work on moral character judgments (see Critcher et al., 2020; Pizarro & Tannenbaum, 2011; Uhlmann et al., 2015). The authors do not measure character judgments, but those judgments could potentially explain why morality and intent influence risk perceptions. Essentially, when answering the risk questions. participants may be asking themselves something along the lines of “Is this the sort of person who would get COVID-19?” or even “Does this person deserve to get COVID-19?” If the person is risking exposure for the sake of immoral motives (ie moral considerations) or knowingly puts themselves at risk (ie intentionality), participants may then infer that this person would get COVID-19 at this exposure based on a global judgment of the person’s character. If this is true, the effect of condition would apply to judgments of exposure for both this particular event and for future events (eg “How likely is it that X would get exposed to COVID-19 in the near future?”).

The introduction also focuses on moral judgments, with importance and intentionality given less attention. I recognize that perhaps morality is the larger judgment, whereby importance and intentionality feed into moral judgments. However, it’s unclear if that is the claim that the authors are making.

I appreciate that the authors included multiple scenarios for each condition, and aimed to tackle multiple influences on risk perceptions (ie morality, importance, and intention). Often times, studies include only one scenario and tackle one factor at a time, so I commend the authors on their approach.

In terms of the results, I think that they are interesting, but connected to my concerns regarding the Intro, without some discussion of mechanism (either empirically or a bit more forcefully argued) I’m not sure I fully know how to interpret them. Should we think of the effects simply as a feature of moral judgments and risk judgments? That is, should risk judgments almost by definition be subject to moral considerations? That’s certainly interesting, but I’m not sure the evidence from this study is sufficient to make that claim. If that isn’t the case, what do the authors think is connecting morality (and intentionality) to risk perceptions? As I’ve outlined above, could it be due to character judgments? Is there potentially some connection to prospect theory, in terms of relative risk evaluation based on the valence of the framing? I believe a stronger version of this paper would include a greater consideration of the psychological mechanisms and processes involved in connecting moral judgments to risk perceptions.

Minor comments:

From the pretest: Is there a reason that the authors reverse-coded the measures of importance, necessity, and intentionality, but not morality?

I wonder if there’s an easier way of presenting all the model specifications (pp. 16-18), perhaps in a table, or even just moving all of that text to the SM and having participants refer to that for details on the various models. As is, it’s a bit hard to keep track of everything just from the text.

Bottom of p. 18: extra % for “explained by fixed and random effects was 58.%%”

References:
Critcher, C. R., Helzer, E. G., & Tannenbaum, D. (2020). Moral character evaluation: Testing another’s moral-cognitive machinery. Journal of Experimental Social Psychology, 87, 103906. <https://doi.org/10.1016/j.jesp.2019.103906>
Pizarro, D. A., & Tannenbaum, D. (2011). Bringing character back: How the motivation to evaluate character influences judgments of moral blame. In P. Shaver & M. Mikulincer (Eds.), The social psychology of morality: Exploring the causes of good and evil (pp. 91–108). New York, NY: APA Books.
Uhlmann, E. L., Pizarro, D. A., & Diermeier, D. (2015). A person-centered approach to moral judgment. Perspectives on Psychological Science, 10(1), 72-81. <https://doi.org/10.1177/1745691614556679>

**Author Response**
Mar 24, 2023

Yoel Inbar, Ph.D., Associate Editor

*Collabra: Psychology*

Dear Dr. Inbar,

Thank you for the opportunity to revise and resubmit our manuscript “**Moral Judgments Impact Perceived Risks From COVID-19 Exposure**" to *Collabra: Psychology*. We found the reviewers’ comments to be extremely constructive and thoughtful, and we believe that incorporating their suggestions has greatly strengthened our paper. Below we describe how we addressed each of the issues raised in the reviews and identify where these changes are reflected in the manuscript in blue.

Based on the reviews, we have expanded our discussion about potential mechanisms (coherence, belief in a just world, affective heuristic) in the introduction and discussion sections, and added language about the generalizability of the findings. We also simplified and clarified the analyses by conducting the mixed effects models without sum deviation contrasts, with grand mean centered continuous predictors, with added Tukey HSD post-hoc pairwise comparisons, and included in the Supplemental Material a simplified table of the model building process. These changes are aimed at making the analyses easier to follow and the results easier to interpret (i.e., the differences among conditions). The pattern of results is nearly the same as before with one exception: the difference in risk judgments between morally good and morally neutral conditions is now non-significant due to the reference group in the model changing from the grand mean across conditions (with the sum deviation contrast codes) to the neutral condition as we originally intended. This updated finding is also more consistent with the pre-study results and similar research. These updates were made in the data analysis and results sections, and a footnote was added on page 20 clarifying where analyses deviated from the preregistration. For transparency of the model building process, we also added a footnote on the same page clarifying that the non-significant effect of importance condition on risk perceptions depended on model specification (we also added a more detailed explanation of this on page 31 in the Supplemental Material).

Lastly, we previously reported post-hoc power analyses for the mixed effects models. However, we came across much recent literature suggesting that post-hoc power analyses, though often requested by journals, are not appropriate and can be misleading. Although post-hoc power analyses can provide valuable information about the adequacy of sample size in MLM, it is important to consider the limitations and potential biases associated with this type of analysis. These limitations are summarized by Heinsberg and Weeks (2022): 1) There are mathematical and conceptual inaccuracies with post-hoc power analysis (see Zumbo & Hubley, 1998), 2) post-hoc power analyses can be misleading because they assume that the observed effect size is similar to the true effect size, and 3) post-hoc power is redundant because there is a one-to-one ratio between *p*-value and power (see Nuzzo, 2021). Finally, post-hoc power analyses do not take into account the nature of the sample used in the original study. We do report sample size, effect sizes (*R2* and standardized β), and standard errors throughout the results, from which readers can use to estimate post-hoc statistical power through the method of their choice. Given these factors, we chose to remove the post-hoc power analyses from the paper. For further critiques, criticisms, and concerns regarding the limitations and potential harms of conducting post-hoc power analyses, please see Dziak et al. (2020), Heckman et al. (2022), Heinsberg and Weeks (2022), Levine and Ensom (2012). Please note we open to keeping the post-hoc power analyses in the manuscript if required by the journal, but think that it would be better to err on the side of not including it rather than include it and have it be misleading.

Citations:

Dziak, J. J., Dierker, L. C., & Abar, B. (2020). The interpretation of statistical power

after the data have been gathered. *Current Psychology*, *39*(3), 870-877. doi:10.1007/s12144-018-0018-1.

Heckman, M. G., Davis III, J. M., & Crowson, C. S. (2022). Post hoc power

calculations: An inappropriate method for interpreting the findings of a research study. *The Journal of Rheumatology*, *49*(8), 867-870. https://doi.org/10.3899/jrheum.211115

Heinsberg, L. W., & Weeks, D. E. (2022). Post hoc power is not informative. *Genetic*

*Epidemiology*, *46*(7), 390-394. https://doi.org/10.1002/gepi.22464

Lee, T., Cai, L., & MacCallum, R. C. (2012). Power analysis for tests of structural

equation models. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 181–194). The Guilford Press.

Levine, M., & Ensom, M. H. H. (2012). Post hoc power analysis: An idea whose time

has passed? *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, *21*(4), 405-409. https://doi.org/10.1592/phco.21.5.405.34503

Nuzzo, R. L. (2021). Post hoc power. *PM & R: The Journal of Injury, Function, and*

*Rehabilitation*, *13*(4), 422–424. https://doi.org/10.1002/pmrj.12476

Wang, Y. A., & Rhemtulla, M. (2021). Power analysis for parameter estimation in

structural equation modeling: A discussion and tutorial. *Advances in Methods and Practices in Psychological Science*, *4*(1), 1-17. https://doi.org/10.1177/2515245920918253

Zumbo, B. D., & Hubley, A. M. (1998). A note on misconceptions concerning

prospective and retrospective power. *Journal of the Royal Statistical Society: Series D (The Statistician)*, *47*(2), 385-388. https://doi.org/10.1111/1467-9884.00139

Our responses to each reviewer’s point and the corresponding modifications we made is described in our point-by-point response below.

**REVIEWS**

**EDITOR**

I have now received two reviews of your manuscript, "Moral Judgments Impact Perceived Risks From COVID-19 Exposure", from researchers with special expertise in moral judgment. I also independently read the manuscript before consulting these reviews. The reviewers had mostly positive reactions to your manuscript. I agree that your manuscript has important strengths and also that there are some issues that need to be addressed. I therefore encourage you to submit a revised version for further consideration at Collabra: Psychology.

The reviewers did an outstanding job in their reviews. I will highlight issues I think are particularly salient here. In your resubmission, please include a document with a point-by-point response to both the points I list here and the reviewers' comments, outlining each change made in your manuscript or providing a suitable rebuttal.

1. Reviewer 2, while enthusiastic about the MS overall, wanted more on what you think the important psychological mechanisms are (and therefore how broadly you think these results apply). You may want to collect new data if you think that you can provide evidence for some mechanism over another, or rule out some mechanisms you think aren't responsible. But I am not insisting on this; I think it would also be fine to simply discuss what mechanisms you think are more or less plausible.

**RESPONSE:** Thanks for this - we restructure the introduction and discussion to emphasize these mechanisms, especially coherence, but also belief in a just world, and the affect heuristic. We also, at the suggestion of reviewer two, add a discussion of how character judgments might play into the effect. We have added this discussion of possible mechanisms in the Discussion section on pages 36-38.

1. Reviewer 2 also wanted to you to be clearer about how you think the current findings update or extend existing theory. To be clear, it is fine for a paper at Collabra not to do that (e.g., a paper could test an exisiting theory, or, indeed, to present some interesting descriptive observations without a strong theoretical focus). But, I do think it's important to say whether you think your findings do or don't.

**RESPONSE:** Thanks, we make clearer that the current work 1) checks robustness of current theory, and 2) extends it to a new domain (public health) that is important and relevant to day-to day decision making. We have added relevant discussion on pages 5 and 39.

1. Reviewer 1 had some very helpful suggestions for methodological clarifications and limitations of the sample that should be acknowledged.

**RESPONSE:** We have made changes based on Reviewer 1’s suggestions, please see below.

1. Like Reviewer 2, I felt that the model specifications were sometimes difficult to follow, and that a table would help.

**RESPONSE:** Additional explanation of the model specification procedure has been added to the Supplemental Material on pages 28-33 including a table of the steps taken to determine the inclusion of random slopes on page 29 (Table S44).

In summary, I think this is a promising manuscript and, I hope you will revise it for further consideration at Collabra: Psychology. I look forward to receiving your revision. Please see the instructions below for submitting your revision.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This may be the last opportunity for major editing, therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please contact the editorial office at editorialoffice@collabra.org.

Sincerely,

Yoel Inbar

**REVIEWER 1**

The purpose of this paper was to understand what drives risk assessments during a pandemic. Specifically, the author(s) investigated the effects of moral judgment, importance, and intentionality with COVID infection risk assessments. Key findings were that morally justified activities and unintentional COVID exposures were seen as safer compared to less justifiable and intentional exposures. Given ongoing concerns surrounding COVID-19 understanding relevant decision making processes and perceptions are valuable. Below are some concerns that arose while reading the article.

With COVID-19 being a polarizing partisan topic the lack of conservatives within the sample is a liimitation. While I appreciate the specific analyses focusing on partisanship, only 16.77% (approx. 141 individuals) selected any conservative option. I feel this should be more adequately addressed in the limitations portion.

**RESPONSE:** We now acknowledge in the MS that the low number of conservatives may be a limitation on pages 6 and 40.

Another area that is unclear to me is the pretesting. You state that “[p]rior to the main study, a pretest was conducted with the goal of ensuring that the conditions in our vignettes indeed elicited the judgments about morality, importance, and intentionality that we expected.” This makes perfect sense (we do this with misinformation studies) and seems to be mostly achieved. However, there appears to be ambiguity between the morally good and neutral conditions as seen with this statement“[t]here were significant differences in moral judgments between morally good and morally neutral conditions for two of the six vignettes.” This is also seen with the Peter intentionality vignette. Why wasn’t this further explored before moving to the main study?

**RESPONSE:** Thanks for pointing to this. We have added a line right before the main study and footnote 8 to clarify. In the first case, in similar studies, respondents have been relatively insensitive to differences between moral neutrality and moral good, maybe because of negativity bias. Since subjects’ moral judgments were largely in line with our predictions, and significant across almost all of the relevant comparisons, we did not change the vignettes to try to obtain significance for these last few instances. (In addition, there was a significant difference in the actual study, perhaps due to higher power.) Regarding the Peter vignette: the necessity and intentionality questions almost all showed the significant differences we expected. Since we removed the necessity question in the final study anyway, we did not change the Peter vignette to try and get a significant necessity difference.

Additionally, I may be misunderstanding this but why were pseudo-random order for vignettes used instead of truly randomized orders? It is discussed as controlling order effects but with the stimuli remaining the same I do not see how this concern is actually addressed as the order remained the same across all participants.

**RESPONSE:** Thanks for this. We now clarify in footnote 6. Vignettes were randomized within each block, but ahead of time rather than during each run of the experiment. Given this, there is no reason to think ordering effects should impact findings.

**Additional comments**:

1. “It is also possible for small effects to have a significant impact when repeated over time (Prentice & Miller, 1992). That is, if these moral judgments influence many small decisions about exposure across a population, they might significantly influence emergent group behavior.”

Due to the small effects found I did find myself questioning the real world impact these findings may have, although this is an important point to raise. How is this informative for policy makers though?

**RESPONSE:** Thanks for this. We try to use measured language in the paper about policy impacts, given the small effect size. Throughout we make changes in wording and ordering to emphasize key points: 1) public health officials in their own communications may be subject to this bias and thus impact many people, and 2) small effects instantiated across a large population may nonetheless be meaningful. Discussion can be found on pages 38-39.

1. Can the authors elaborate on why the minimum amount of time for the main study was 5 minutes? The mean time in the pretest was 682 seconds with a SD of 422 seconds. Am I correct in stating that this could mean someone that finished within one SD of the mean pretest time may be excluded from the main study? I am aware this was determined prior to data analyses but am curious as to why this threshold was selected. Further, keeping it consistent with either minutes or seconds would be ideal from the perspective of the reader.

**RESPONSE:** This is correct. However, the wide SD is in part because some participants took a very long time answering. Notice that only 51 participants were removed from the final analysis out of 1015. The 5 minute threshold was adopted because, 1) the large majority of participants in the pre-test took at least 5 minutes and 2) speed reading trials by the authors took ~6 minutes. We did not think that respondents using a shorter time period could possibly read the vignettes properly. We now clarify on page 13.

1. May be cleaner if you combine the moral, importance, and intention judgement into one sentence for the main study, although not necessary.

**RESPONSE:** Thank you for this suggestion. Because there is quite a lot going on, we kept two separate sections to avoid confusing readers.

1. Just noting that I was unable to look at the supplementary materials.

**RESPONSE:** We apologize that you were unable to see the supplementary materials. We double checked that the study data, code, and materials are publicly available on Open Science Framework and have added the supplementary materials there as well: https://osf.io/6yvgf/?view\_only=cec08b28840e4507acdc0224d5c28d19

1. Lastly, there were a few typos. For instance, on pg. 18 “58.% %” and pg. 19 “F(1, 5) = 3.7`, p = .114”

**RESPONSE:** We thank the reviewer for bringing these typos to our attention. They have been fixed on page 18 and page 19, respectively.

I always sign my reviews,

Jabin Binnendyk

**REVIEWER 2**

The authors report one primary study (and one pretest) examining whether and how factors that are not relevant to objective risk (specifically moral acceptability, importance of the behavior, and intent) may nonetheless influence perceived risk associated with exposure to COVID-19.

My main concern regards the strength and clarity of the Introduction. I like how the authors open with the various real-world examples to help convey the intuition underlying the question and the applied importance of these results. However, I found the justification for the hypotheses somewhat lacking and I believe that the authors could strengthen and clarify their claims in several respects. Specifically…

Upon finishing reading the Intro, the main question I was left with was what new theoretical domain was being charted by these studies. I appreciate the timeliness and application to understanding risk factors associated with COVID-19, given its yet enduring presence in our lives, but does the context of COVID-19 afford the authors some additional insight into psychology of these risk judgments that we wouldn’t otherwise have from past research? The authors note that the link between morality and importance “is likely to be exacerbated during a global pandemic” (p. 5), which is helpful, but I wonder if this is the only or even the primary benefit of examining these effects in the context of a pandemic. Is it only that every action potentially carries some risk of harm? What about the addition of new, rapidly developing norms about how to behave (that were often in conflict with previous social norms)?

**RESPONSE:** We don’t think the current study significantly develops theory on the psychology of risk judgments and morality. Rather, we think it 1) adds robustness and confirmation to an existing theory, 2) extends its application into a new, and potentially important, domain, and 3) is potentially relevant to public health decisions and messaging. Sometimes attempts of extension like this are not successful, so this is a positive contribution in its own light.

Along similar lines, the authors argue that, during a pandemic, important actions may become suffused with moral considerations, given that exposure to infection can create negative outcomes (ie harm). All actions can be imbued with morality during a pandemic. It’s unclear whether these increased moral considerations are necessarily reserved just for important actions or whether all actions become linked with moral concerns. Really, any action during a pandemic involving potential proximity to others would have a risk of infection and therefor involve potential harms and moral consideration. Is there some reason that important actions (vs. unimportant but still social actions) should be especially prone to becoming linked with morality?

**RESPONSE:** We do agree that many daily actions become imbued with morality during a pandemic, and that, for this reason, the effects we study here are particularly significant. This said, there is certainly room for some actions to be considered more or less important, and more or less moral. The results suggest that more important actions are considered more moral by experimental subjects (which is in line with previous findings).

One piece that seems to be missing is an overarching theoretical framework that motivates the hypotheses in the first place: why would moral concerns, importance, and intent influence risk perceptions? The authors provide a quick hint, saying that risk judgments may reflect “wider judgments about whether an individual ought to engage in a behavior” (p. 3). Intuitively I think I agree with this, but without further explanation, it is difficult to evaluate the justification for this claim.

**RESPONSE:** Thanks for this. We now try to be clearer in the introduction and conclusion. As far as original motivation for the hypothesis, we were driven by the sorts of public health messaging described in the introduction of the paper. It was clear that important actions were being described as relatively low risk. We were aware of previous results showing that moral actions were judged as relatively low risk (with intentionality acting as a second measure for morality throughout the paper). We take desire for explanatory and narrative coherence (which we discuss in the paper) to be the overarching framework that supports all three hypotheses. As we discuss in the conclusion, beliefs in a just world and the affect heuristic, in addition, may help explain the actual results we saw.

I wonder if one possible framework is focusing on judgments of the person doing the action, in line with recent work on moral character judgments (see Critcher et al., 2020; Pizarro & Tannenbaum, 2011; Uhlmann et al., 2015). The authors do not measure character judgments, but those judgments could potentially explain why morality and intent influence risk perceptions. Essentially, when answering the risk questions. participants may be asking themselves something along the lines of “Is this the sort of person who would get COVID-19?” or even “Does this person deserve to get COVID-19?” If the person is risking exposure for the sake of immoral motives (ie moral considerations) or knowingly puts themselves at risk (ie intentionality), participants may then infer that this person would get COVID-19 at this exposure based on a global judgment of the person’s character. If this is true, the effect of condition would apply to judgments of exposure for both this particular event and for future events (eg “How likely is it that X would get exposed to COVID-19 in the near future?”).

**RESPONSE:** Thanks for this - we add this possibility to the paper, as outlined below.

The introduction also focuses on moral judgments, with importance and intentionality given less attention. I recognize that perhaps morality is the larger judgment, whereby importance and intentionality feed into moral judgments. However, it’s unclear if that is the claim that the authors are making.

**RESPONSE:** Thanks for this. Because the results ended up supporting a primary effect of moral judgments impacting risk judgments (rather than importance on its own), we focus more on that result in the introduction. (And throughout we take intentionality to be a proxy for moral judgment, as described.) We now make sure to be clearer about our initial motivations (described above) and hypotheses on pages 3-6.

I appreciate that the authors included multiple scenarios for each condition, and aimed to tackle multiple influences on risk perceptions (ie morality, importance, and intention). Often times, studies include only one scenario and tackle one factor at a time, so I commend the authors on their approach.

**RESPONSE:** Thank you!

In terms of the results, I think that they are interesting, but connected to my concerns regarding the Intro, without some discussion of mechanism (either empirically or a bit more forcefully argued) I’m not sure I fully know how to interpret them. Should we think of the effects simply as a feature of moral judgments and risk judgments? That is, should risk judgments almost by definition be subject to moral considerations? That’s certainly interesting, but I’m not sure the evidence from this study is sufficient to make that claim. If that isn’t the case, what do the authors think is connecting morality (and intentionality) to risk perceptions? As I’ve outlined above, could it be due to character judgments? Is there potentially some connection to prospect theory, in terms of relative risk evaluation based on the valence of the framing? I believe a stronger version of this paper would include a greater consideration of the psychological mechanisms and processes involved in connecting moral judgments to risk perceptions.

**RESPONSE**: In the paper, we now make much clearer the mechanisms we think might drive these judgments. In the introduction on page 3, we suggest that the results likely result from needs for explanatory and narrative coherence. Subjects shape their factual beliefs to cohere with their moral judgments. We address this at further length in the discussion on pages 36-38. This mechanism also connects to work on belief in a just world, which we address in the discussion. We now add the possibility you suggest, that this need for coherence could operate at the level of character judgment, rather than just based on the immediate action. The last mechanism we mention is the affect heuristic. Though this heuristic may not have supported our initial hypothesis about the role of importance in risk judgments, since our results primarily support a connection between morality and judgment, it may be that affect drives the effect.

We also discuss the possibility of a confounder where subjects rationally judge various subjects to be in different situations, and are actually answering a question about more general risk based on this.

Minor comments:

From the pretest: Is there a reason that the authors reverse-coded the measures of importance, necessity, and intentionality, but not morality?

**RESPONSE:** This was purely for interpretation purposes so that higher scores meant more important and more intentional. Morality was measured such that higher means more immoral, so that its association with risk perceptions can be interpreted in a more intuitive way (i.e., in the positive: moral immoral = greater risk).

I wonder if there’s an easier way of presenting all the model specifications (pp. 16-18), perhaps in a table, or even just moving all of that text to the SM and having participants refer to that for details on the various models. As is, it’s a bit hard to keep track of everything just from the text.

**RESPONSE:** Thank you for this suggestion, we agree and have moved these details to the supplemental material.

Bottom of p. 18: extra % for “explained by fixed and random effects was 58.%%”

**RESPONSE:** We thank the reviewer for bringing these typos to our attention. They have been fixed on page 18 and page 19, respectively

References:

Critcher, C. R., Helzer, E. G., & Tannenbaum, D. (2020). Moral character evaluation: Testing another’s moral-cognitive machinery. Journal of Experimental Social Psychology, 87, 103906. https://doi.org/10.1016/j.jesp.2019.103906

Pizarro, D. A., & Tannenbaum, D. (2011). Bringing character back: How the motivation to evaluate character influences judgments of moral blame. In P. Shaver & M. Mikulincer (Eds.), The social psychology of morality: Exploring the causes of good and evil (pp. 91–108). New York, NY: APA Books.

Uhlmann, E. L., Pizarro, D. A., & Diermeier, D. (2015). A person-centered approach to moral judgment. Perspectives on Psychological Science, 10(1), 72-81. https://doi.org/10.1177/1745691614556679

In sum, we hope you find that we have addressed the reviewers’ comments and concerns thoroughly, as we believe these edits have made the paper much stronger. For that, we thank you for your time and consideration.

On behalf of our co-authors,

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**Editor Final Decision:** Accept

Mar 28, 2023

Dear Dr. O’Connor,

I have now had a chance to read over your manuscript “Moral Judgments Impact Perceived Risks From COVID-19 Exposure”, along with the letter describing the changes you made. Thank you for your responsiveness to the concerns that the reviewers and I raised. I am happy to say that your paper is now officially accepted for publication in Collabra: Psychology. Congratulations on this excellent work, I think it will make an important contribution to the literature and I look forward to seeing it published! I hope your experiences with Collabra: Psychology have been positive and that you will continue to consider it as an outlet for your work.

As there are no further reviewer revisions to make, you do not have to complete any tasks at this point.

You will be receiving separate correspondence regarding any production and technical comments, data deposits, as well as publication charges. We work with the Copyright Clearance Center to process any applicable APC charges. Please note that your APC transaction must be completed before your article gets published.

You will have an opportunity to check the page proofs before we publish your article. Thank you again for publishing in Collabra: Psychology.

Sincerely,
Yoel Inbar