




Looking (again) at Medusa: Evidence that pictorial abstraction influences mind perception

A recommendation by [Chris Chambers](#)  based on peer reviews by [Alan Kingstone](#) and 1 anonymous reviewer of the STAGE 2 REPORT:

Jing Han, Minjun Zhang, Jiaxin Liu, Yu Song, Yuki Yamada (2023) The Medusa effect: A registered replication report of Will, Merritt, Jenkins, and Kingstone (2021). OSF, ver. 1, peer-reviewed and recommended by Peer Community in Registered Reports.

<https://osf.io/yqnu8>

Submitted: 24 October 2023, Recommended: 23 November 2023

Cite this recommendation as:

Chambers, C. (2023) Looking (again) at Medusa: Evidence that pictorial abstraction influences mind perception. *Peer Community in Registered Reports*, 100583. [10.24072/pci.rr.100583](https://doi.org/10.24072/pci.rr.100583)

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The Medusa effect is a recently described phenomenon in which people judge a person to be more mindful when they appear as a picture (termed *L1*) than as a picture within a picture (*L2*). Across a series of experiments, Will et al. (2021) reported that at higher levels of abstraction, images of people were judged lower in realness (how real the person seemed), experience (the ability to feel) and agency (the ability to plan and act), and also benefited less from prosocial behaviour. The findings provide an intriguing window into *mind perception* – the extent to which we attribute minds and mental capacities to others. In the current study, Han et al. (2023) undertook a close replication of two experiments from the original report by Will et al. (2021), asking first, whether the level of pictorial abstraction influences ratings of realness, agency and experience, and second, whether it also influences prosocial behaviour as measured in the dictator game (with participants predicted to allocate more money to recipients presented as pictures than as pictures within pictures). In the event of a non-replication using the original materials, the authors planned to further repeat the experiments using newly generated stimuli that are better matched for cultural context and more tightly controlled along various dimensions. Results supported all pre-registered hypotheses. Participants rated and perceived *L1* stimuli as having significantly higher levels of realness, agency, and experience than *L2*, and they also allocated significantly more money to *L1* recipients than *L2* recipients in a dictator game. Furthermore, participants who judged *L1* as higher than *L2* on all three dimensions also differentiated significantly between *L1* and *L2* in the dictator game, indicating a relationship between mind perception and prosociality. Overall, the findings confirm that pictures with lower levels of abstraction are perceived as more mindful and are associated with

higher levels of prosocial behavior. Consequently, the results suggest that the Medusa effect is a reproducible phenomenon. The Stage 2 manuscript was evaluated over one round of in-depth review. Based on detailed responses to the reviewers' comments, the recommender judged that the manuscript met the Stage 2 criteria and awarded a positive recommendation.

URL to the preregistered Stage 1 protocol: <https://osf.io/xj46z> **Level of bias control achieved:** Level 6. *No part of the data or evidence that was used to answer the research question was generated until after IPA.*

List of eligible PCI RR-friendly journals:

- [Advances in Cognitive Psychology](#)
- [Collabra Psychology](#)
- [Experimental Psychology](#)
- [Journal of Cognition](#)
- [Meta-Psychology](#)
- [Peer Community Journal](#)
- [PeerJ](#)
- [Psychology of Consciousness: Theory, Research and Practice](#)
- [Royal Society Open Science](#)
- [Studia Psychologica](#)
- [Swiss Psychology Open](#)

References:

1. Will, P., Merritt, E., Jenkins, R., & Kingstone, A. (2021). The Medusa effect reveals levels of mind perception in pictures. *Proceedings of the National Academy of Sciences*, 118(32), e2106640118. <https://doi.org/10.1073/pnas.2106640118>
2. Han, J., Zhang, M., Liu, J., Song, Y. & Yamada, Y. (2023). The Medusa effect: A registered replication report of Will, Merritt, Jenkins, and Kingstone (2021). Acceptance of Version 2 by Peer Community in Registered Reports. <https://osf.io/yqnu8>

Reviews

Evaluation round #1

DOI or URL of the preprint: <https://osf.io/f52yv>

Version of the preprint: 1

Authors' reply, 21 November 2023

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Decision by [Chris Chambers](#) , posted 20 November 2023, validated 20 November 2023

Minor Revision

Two of the reviewers from Stage 1 kindly returned to evaluate your Stage 2 manuscript and both are very positive about the completed work. As you will see, one of the reviewers (Alan Kingstone) offers some comments on the Introduction. To minimise risk of hindsight bias there are strict limits on the extent to which the introduction section of a Stage 2 submission can be altered. In revising to address the reviewer's comments, please therefore limit any changes to those necessary to (a) correct factual errors or (b) make crucial clarifications that would otherwise lead to readers being misled. Please refrain from shortening any sections or making other stylistic changes, as the opportunity to make such modifications to the introduction was at Stage 1.

I would also suggest one additional revision (not suggested by the reviewers): in the study design table (pp28-30), it would be helpful to add a column to the far right called "Outcome" which reports in simple terms whether each hypothesis was confirmed or disconfirmed. Please also give this table a title and caption. (e.g. Table [N]. Study Design and Outcomes).

Once you have resubmitted, I will issue a final Stage 2 recommendation. Please note that PCI RR is entering its annual shutdown period from 1 Dec - 10 Jan, so if you want to receive a final recommendation decision this year, you will need to resubmit before 1 Dec.

Reviewed by anonymous reviewer 1, 06 November 2023

The authors have done a great job conducting the planned experiments as reported in the previous version of this work. All experiments and results are reported with precision and sufficient details. I am happy with this new, updated, paper, and I can therefore suggest its acceptance in the current form.

Reviewed by [Alan Kingstone](#), 11 November 2023

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