

## Peer Review

# Review of: "The Uncanny Valley Phenomenon: Where Is the Categorical Boundary Between Categorization Difficulty and Categorization Failure?"

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In the article “The Uncanny Valley Phenomenon: Where Is the Categorical Boundary Between Categorization Difficulty and Categorization Failure?” the authors provide a commentary on the recent experimental study done by Sasaki et al. (2025). Contrary to the original study, they argue that categorization difficulty and categorization failure—differing hypotheses about what process underlies the uncanny valley phenomenon—are not mutually exclusive. Instead, they offer an integrative approach.

On the methodological level, I appreciate the authors’ argument that “finding a non-significant result does not mean the null hypothesis is true” – it does not. For such cases, the Bayes factor analysis would be a better choice since it can help distinguish if the null hypothesis was actually significant or if the non-significant result was a consequence of noise in the data.

On the theoretical level, the authors aim to build bridges in the reconceptualization of categorization difficulty and categorization failure as aspects of a more general cognitive process. I am grateful for their appeal for the possible integration of these hypotheses and alternative theoretical accounts. As the replication crisis exposed, cognitive psychology—and psychology in general—is struggling with the absence of coherent theoretical frameworks able to connect scattered findings and theories into a meaningful whole, further enabling the derivation and testing of solid hypotheses. Therefore, I think that any approach striving for theoretical integration, if justified, is valuable.

As the article is well written and there is no specific flaw to address from my side, my only note to consider is adding more literature on Bayesian or predictive processing-based approaches to

perception and cognition to the discussion part. They could strengthen the authors' argument for a holistic understanding of the uncanny valley phenomenon.

## **Declarations**

**Potential competing interests:** No potential competing interests to declare.