

# Peer Review Comments

**Article:** Ganis, G and Kievit, R 2015 A New Set of Three-Dimensional Shapes for Investigating Mental Rotation Processes: Validation Data and Stimulus Set. *Journal of Open Psychology Data*, 3: e3, DOI: <http://dx.doi.org/10.5334/jopd.ai>

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## Responses for Version 1

**Reviewer A:** Kevin van Kalkeren

**Review Completed:** 17 November 2014

In their manuscript titled 'A new set of three-dimensional shapes for investigating mental rotation processes: validation data and stimulus set', Ganis and Kievit provide a new set of stimuli for cognitive psychology research regarding mental rotation. Being one of the most influential paradigms in psychology, the research gives insight in different aspects of intelligence. This manuscript continues the work in the field, trying to improve existing stimuli in mental rotation tasks. Besides providing the stimuli themselves, the authors also conducted a validation study.

In general, the paper is of high quality. There are only minor points to be made. Firstly, I would recommended shortening the introduction to the required minimum to understand the rest of the paper, in order to maintain the goal of a data paper. Secondly, the data file could benefit from a data description section. Thirdly, the reference list should be according to the lay-out used in other data papers in JOPD. Lastly, perhaps the appendix could be in a different file.

If those remarks are met, I am sure this paper and its content will greatly contribute to the field of cognitive psychology and our journal.

**Reviewer B:** Irina Harris

**Review Completed:** 21 January 2015

Ganis and Kievit provide a great set of stimuli for use in mental rotation research, available in easy-to-use jpg files. The stimuli are carefully designed high-quality 3D rendered objects with naturalistic shading, while avoiding views in which critical features may be occluded, which could create ambiguities. For each of the 48 objects, there is a "same" pair and a "different" pair at each of 4 angles of rotation around the vertical (y) axis (0, 50, 100, 150 degrees of angular disparity). This provides a good coverage of angular disparities from which to derive RT functions. The stimulus set is large, specifically to allow for its use in studies that require multiple subsets of distinct stimuli, such as training studies.

The validation study included in the manuscript clearly shows that the stimuli are appropriate for the task and yield the expected behavioural functions.

The manuscript is very clear and the instructions for use of stimuli and data are easy to follow. A couple of minor corrections need to be made:

1. Third last paragraph of the Quality Control section (sorry, there are no page numbers) "Second, the RTs for same trials are longer than those for different trials..." – it's the other way around.
2. Same page last paragraph "Ninety-six of the 384 stimuli..are shown as thumbnails". Actually, all 384 stimuli are shown in Fig. 4
3. Although the 12 stimuli used in the validation study are listed in bold in Table 2, it would be worth drawing the readers' attention to that when referring to them in text, as I missed that on first reading. E.g. say something like "employing 12 out of the possible 48 (shown in bold in the table)..."