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Authors

Zarina, Liga
Skilters, Jurgis
Umbrasko, Solvita
et al.

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Combining and segmenting geometric shapes into parts depending on symmetry type

Liga Zarina
University Of Latvia, Riga, Latvia

Jurgis Skilters
University of Latvia, Riga, Latvia

Solvita Umbrasko
University of Latvia, Riga, Latvia

Santa Bartusevica
University of Latvia, Riga, Latvia

Abstract

Symmetry is considered as an important geometric feature impacting object segmentation into parts. It is also noted that partly occluded objects can still be identified according to the remaining visible parts (Winter & Wagemans 2006). In two sets of experiments, we used 13 geometric figures distinguished by symmetry types. In the first experiment, participants (n=52) had to cut the figures into two parts along a straight line and in another experiment, participants (n=44) had to create 5 sets of two figure combinations where the overlapping of the figures was allowed. The results confirmed the importance of the symmetry axis in both tasks. Other relevant criteria were cutting into half (based on angle, edge or area) and precise connecting along edges or corners. This contribution allows comparing the impact of symmetry type on the segmentation and combination of geometric figures. This research is supported by the ERDF grant No 1.1.1.2/VIAA/3/19/506.