

# **Roundedness and symmetry in the perception of similarity to the circle or roundness**

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## **Abstract**

Research shows that shape perception is sensitive to both roundedness or angularity (e.g., Bar&Neta, 2006) and symmetry (e.g., Dehaene et al., 2006), and that these features also affect the perception of similarity (Tversky, 1977). Roundness is the measure of how closely the shape of an object approaches that of a circle. In an online quasi-experiment (n=74), we tested combination pairs of 19 geometric figures (created according to symmetry properties and roundedness) to answer the question whether the symmetry would contribute more than the roundedness of the figure corners to the roundness perception. Participants did a forced choice task on figure pairs presented in a random order. The results show that for regular polygons, roundedness determines the similarity assessment even when the symmetry is up to three orders higher. For pairs containing regular figures, choices were made faster compared to pairs with asymmetrical and non-regular figures.