

Theories of object recognition and categorisation agree upon the importance of similarity between stimuli. We used 257 line drawings of everyday objects, consisting of 7 - 12 exemplars within 24 basic-level categories (Op de Beeck and Wagemans, 2001 *Perception* **30** 1337 - 1361). We manipulated similarity using a morphing procedure that created intermediate stimuli between the four extremes in a two-dimensional space derived from similarity ratings on the original line drawings, as well as contour and silhouette versions. Contour stimuli within this semiparameterised stimulus space were then used in a sequential matching task, in which subjects had to judge whether both objects belong to the same category. Basic-level categorisation performance, reaction times and error rate, deteriorated with increasing amount of morphing transformation between two successively presented category members. This systematic effect was found for biological and artifact categories, and it was quite robust for different types and amounts of image changes. Using similarity ratings on the selected set of stimuli and their morphs, we confirmed that the morphing procedure did indeed alter the degree of similarity parametrically. Stimuli that have a high percentage of overlap were rated as more similar than stimuli that were further away in the morphing procedure.