Memory for novel shapes of grounds? An alternative hypothesis.

Daniel W. Lampignano
University of Arizona, USA
Mary A. Peterson

Adjacent regions compete for ownership of a common edge. The figure owns the edge; the ground does not. Treisman & DeSchepper (T & D; 1996) used a discrimination task to test for memory of novel ground shapes in paired prime-probe trials. Primes were black and white regions sharing an edge, shown above a black shape; the black region was figure, the white region was ground. Probes were separated black and white shapes above a white shape. Observers reported whether the shape below matched the same-color shape above. For probes the top black shape was a distractor. White top shapes were repeated across experimental prime and probe trials, but not control trials. T & D found negative priming (NP) on experimental trials and concluded that before figure assignment, equivalent memories are established for shapes lying on both sides of an edge, with an "ignore" tag attached to the shape of the ground. We propose an alternative: NP reflects a delay in probe figure assignment caused by competition from memory for the prime figure. We eliminated the white region on prime trials to reduce similarity between white prime and probe shapes and positioned the distractor farther from the white probe shape on half the trials to reduce any partial closure it provided. NP was reduced in the far condition relative to the near condition, but some response competition was observed in the near condition. Did the response competition arise from the distractor or from the potential to see the prime figure on the ground side of the probe, amplified by partial closure? We replaced the near black distractor with a vertical bar and eliminated the far distractor. The bar provided partial closure, as had the distractor, but not response competition. Both NP and response competition were observed. Here, response competition arose from the potentially present prime figure. We suggest that an understanding of the
competitive nature of figure assignment is necessary to interpret the obtained NP.