

Conceptual Masking: Is it really all about the concept or does layout matter?
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The onset of a new, meaningful visual event is thought to induce conceptual masking (Potter, 1976). Does layout contribute to the "meaning" of a scene? Given the same objects, would changes in layout induce conceptual masking? In Experiment 1, each of 16 photographs (the targets) was presented for 125 ms, interspersed with a to-be-ignored photograph for 250 ms (the "conceptual mask") and a visual noise mask for 500 ms. Each conceptual mask contained the same background with a new set of 3 objects, however, in one condition (N = 32) the objects were always presented in the same layout, whereas in the other, they appeared in a different layout each time (N = 32). Following presentation, a 2AFC test was administered, in which each target photograph was paired with a similar distractor (same concept, different details). Although the conceptual mask contained the same new objects in both conditions, recognition memory decreased significantly with a changing layout (80% vs. 70%; $t(62) = 3.10$, $p < .01$). In Experiment 2, more complex conceptual masks were presented. There were 4 conceptual mask conditions (N = 40 in each): a) different objects/same layout, b) different objects/different layout c) same objects/different layout and d) same objects/same layout (i.e., a repeating picture). Conceptual masking is limited or non-existent when the same mask repeats (Intraub, 1984). In comparison to the repeating picture condition (78% recognized), orthogonal planned comparisons showed that memory decreased significantly when the conceptual mask changed each time: different objects/same layout (72%), different objects/different layout (70%), or same objects/different layout (74%). Thus, even when gist was maintained (same objects; same background), layout changes interfered with memory for the attended pictures. Both experiments demonstrate that conceptual masking involves more than the onset of a new global concept; a new layout also disrupts processing of briefly presented scenes.