Abstract

Every day we are exposed to huge amounts of visual stimuli (scenes). However, i tis not yet clear how accurately these scenes are stored and remembered, and what is the role of detail relative to the memory for the whole image. More specifically, to what extent the details are remembered and to what extent we extrapolate the unseen content from the presented details. We used fragmented scenes (broken to 4x4 grids) to investigate this question. Fragmented scenes were composed of three different theme categories (indoor, natural, man-made), each with different number of presented patches (3, 5 and 8). Our main research question is, whether there is any relationship between the number of presented patches and the ability to recognize which patches were presented and which were not (but still patches from the same photograph). In analysis we focus on Signal Detection Theory characteristics, mainly memory sensitivity (d´) and bias. We run two experiments and in both the highest scores for (d´) were for 3 patches (Exp.1: *d´*(n3) = 0,67; Exp.2: *d´*(n3) = 0,66) with bias towards negative answers (Exp.1: *c*(n3) = 0,27; Exp.2: *c*(n3) = 0,16). For 5 and 8 patches the (d´) was lower (Exp.1: *d´*(n5) = 0,35; *d´*(n8) = 0,34; Exp.2: *d´*(n5) = 0,39; *d´*(n8) = 0,41) and in the same time bias was towards positive answers (Exp.1: *c*(n5) = -0,11, *c*(n8) = -0,34; Exp.2: *c*(n5) = -0,16, *c*(n8) = -0,37). We have also examined the role of the grid for remembering, but we have found no effect.

Key words: visual short-term memory, signal detection theory, fragmented scenes, grid, categories of scenes, seen/unseen patches