Do expert searchers remember what they have seen?

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Abstract

Previous research has shown that humans have a massive and robust ability to recognize objects and scenes that they have seen before (Brady, Kongle, Alvarez, and Oliva, 2008). Do experts have similarly impressive memory for the unusual stimuli with which they are expert? We tested cytologists who search “scenes” filled with cells for signs of cervical cancer on memory for those scenes. We tested the same observers on memory for images of objects and real scenes. We compared their results to non-cytologist control subjects. In all conditions, participants viewed 72 images and were told that they should remember them. During the testing phase, they were shown 36 old and 36 new images and were asked to label image as new or old. Expert cytologists were no better than controls for object memory (d’ 1.99 and 1.97, respectively) or scenes (d’: 3.44 vs. 3.20). They were significantly better than naives at remembering images of cells (d’ .62 vs. .12). Note, however, that their memory for cell scenes was quite poor, significantly worse than their memory for objects and for scenes. We conclude that expertise with stimuli does not convey massive memory for those stimuli nor does expertise with one set of stimuli notably increase memory for stimuli in general. On the practical side, these results mean that, with some caution, one can reuse stimuli in studies of cytology in ways that would not be wise in studies of memory for natural scenes.