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Pre-Training Leads to a Structural Novelty Effect in Spatial Visual Statistical Learning

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Abstract

We investigated the influence of structural properties of previously learned stimuli on Spatial Visual Statistical Learning. Participants ($n=170$) were first exposed to a stream of scenes containing only one type of regularity (horizontal or vertical pairs), followed by a stream containing both types of regularities. We found that participants performed above chance for the pairs of the first stream ($M=54.7\%$, $SE=1.2$, $p<0.001$, $BF=91.89$) as well as for the novel type of pair of the second stream ($M=55.6\%$, $SE=1.9$, $p=0.005$, $BF=4.04$), but not for the familiar type of pair of the second stream ($M=51.5\%$, $SE=2.0$, $p=0.465$, $BF=0.11$). This observed novelty effect indicates an interference between the similarly structured pairs in the first and second stream of scenes, suggesting representational overlap of pairs of the same orientation.