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Statistical Learning Ability as a Measure of Cognitive Function

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Abstract

Statistical Learning (SL), the ability to extract probabilistic information from the environment, is a subject of much debate. It appears intuitive that such a profound mechanism of learning should carry predictive power towards general cognitive ability. Yet, previous attempts have struggled to link SL ability to measures of general cognitive function, suffering from low correlations and mediocre test-retest reliability. Here, we deploy a new continuous auditory SL task that achieves high test-retest reliability ($r = .8$) and shows that SL ability does significantly correlate with general cognitive function (up to $r = .56$). Results are discussed in light of i) the theoretical implications of the high test-retest reliability of our novel SL task, ii) SL ability as a marker of general cognitive function, and iii) future methodological considerations.