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**Authors**

Jenkins, Holly
Graaf, Ysanne de
Smith, Faye
et al.

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# A Visual Recall Paradigm to Assess Implicit Statistical Learning

**Holly Jenkins**
Newcastle University, Newcastle-upon-Tyne, United Kingdom

**Ysanne de Graaf**
Newcastle University, Newcastle-upon-Tyne, United Kingdom

**Faye Smith**
Newcastle University, Newcastle-upon-Tyne, United Kingdom

**Nick Riches**
Newcastle University, Newcastle-upon-Tyne, United Kingdom

**Christopher Petkov**
Newcastle University, Newcastle-upon-Tyne, United Kingdom

**Benjamin Wilson**
Emory University, Atlanta, Georgia, United States

### Abstract

Implicit statistical learning, whereby regularities between stimuli are detected without conscious awareness, is important for language acquisition. This form of learning has often been assessed using measures that require conscious decision making or explicit reflection (e.g., 2AFC tasks). We aimed to measure statistical learning more implicitly. We leveraged the fact that frequently co-occurring stimuli may be chunked into a single cognitive unit, reducing working memory demands. We developed an artificial grammar in which sequences contained pairs of stimuli which always co-occurred (chunks) and more variable between-chunk transitions. In a novel visual recall paradigm, participants were asked to remember and recreate sequences of serially presented images. Recall of predictable sequences improved over the course of the experiment. However, recall dropped to initial levels when participants were presented with random sequences containing no predictable chunks. This approach represents a valuable method to measure statistical learning implicitly, without requiring conscious reflection.