Why Some Events Are More (or Less) Random: The Role of Alternation Rate and Number of Occurrence

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Abstract

How do people tell the difference between random and nonrandom events? What affects peoples understanding of randomness? In two experiments, we investigated the role of two characteristics of a sequencealternation rate and number of occurrencein peoples perception of randomness. We presented participants with a pair of binary sequences of length 6 (e.g., OXOXXO vs. XOXXXX) and asked them to evaluate which of the two was more likely to occur. In Experiment 1, we examined how participants randomness perception changed as the difference in alternation rate and the difference in the number of occurrence changed. In Experiment 2, we further examined whether participants exhibited differential reliance on alternation rate and number of outcomes. Results suggest that people exhibit differential reliance on alternation rate and number of occurrence. When the two characteristics are in conflict, people tend to rely more on the alternation rate in their randomness judgement.