

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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

Permalink

<https://escholarship.org/uc/item/7m08w126>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 41(0)

Authors

Chu, Karen H. H.

Deng, Sophia

Publication Date

2019

Peer reviewed

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

Karen H. H. Chu

University of Macau, Macau SAR, China

Sophia Deng

University of Macau, Macau SAR, Macao

Abstract

How do people tell the difference between random and nonrandom events? What affects people's understanding of randomness? In two experiments, we investigated the role of two characteristics of a sequence: alternation rate and number of occurrence in people's 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.