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Authors

Castillo, Lucas

Leon Villagra, Pablo

Falben, Johanna

et al.

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People Need About Five Seconds to be Random: Autocorrelated Sampling Algorithms Can Explain Why

Lucas Castillo
University of Warwick, Coventry, United Kingdom

Pablo Leon Villagra
Brown University, Providence, Rhode Island, United States

Johanna Falben
University of Amsterdam, Amsterdam, Netherlands

Nick Chater
University of Warwick, Coventry, United Kingdom

Adam Sanborn
University of Warwick, Coventry, United Kingdom

Abstract

Random generation studies have shown that people struggle to be unpredictable – they slowly and effortfully produce autocorrelated sequences instead. However, true random processes (such as radioactive decay) are also not instantaneous. In this project we explore how long it takes people in a random generation task to be random. We do so in two experiments asking people to draw samples from naturalistic domains (lifespans and heights), manipulating either the rate of generation or the requirement to be random (within participants). Irrespective of pace or instructions, we find that people can produce a random sample every four to five seconds. Additionally, the time a person needs to produce random samples is consistent across conditions, but varies widely between people. Following previous literature, we model random generation performance as an autocorrelated sampling algorithm, giving a process level account of how people do these tasks and why they need time to be random.