

A Simulation Study of Learning a Structure: Mike's Bike Commuting

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Abstract

This paper undertakes a simulation study of a player's learning about the structure of a game situation. In a simple 1-person example called Mike's Bike Commuting, we simulate the process by which Mike experiences and accumulates memories about the game structure. It is the basic requirement that to keep an experience as a long-term memory, Mike needs enough repetitions of that experience. By the choice of our simple and casual example, we can discuss relevant time spans for learning. In particular, we argue that the limit case of Mike's learning as time tends to infinity is of little relevance to the problem of learning. We find also that the concept of "marking" introduced by Kaneko-Kline is important for obtaining sufficient structural knowledge in a reasonable time span. The simulation study shows that Mike's learning can change drastically with the concept. We also consider Mike learning his preferences from his experiences, where we will meet various new conceptual problems.

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