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Authors

Terai, Hitoshi

Miwa, Kazuhisa

Yokoyama, Sho

et al.

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Effects of attention to emergent phenomena on rule discovery

Hitoshi Terai
Kindai University

Kazuhisa Miwa
Nagoya University

Sho Yokoyama
Kindai University

Souta Fujimura
Kindai University

Gotaro Nakayama
Kindai University

Abstract: In this study, we focused on effects of finding of emergent phenomena in rule discovery. In the experiment, we used Conway's Game of Life, which generates high-order phenomena from fundamental rules. Our research question is to realize the effects of attention to emergent phenomena on finding the fundamental rules. The two experimental conditions (chaotic and static) differed only in initial states. In the chaotic condition, the initial state consisted some Methuselaha, which take long period until they become stable. On the other hand, in the static condition, the initial condition consisted many emergent patterns: still lifes and oscillators, which repeat same pattern in short period. We classified the hypotheses reported by the participants to either mentioning about emergent phenomena or not. This result revealed that people might see emergent phenomena not only in the static condition but also in the chaotic condition, which do not include the emergent patterns.