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The Tower of Hanoi in Dynamic Creative Problem Solving

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Abstract

Creativity and emotions are well-studied constructs, and there is much work on their interrelations. However the application of dynamical systems analysis to them is still relatively rare. This study attempts to examine the possible dynamical interrelations among psychometrically assed subclinical traits (characteristics of the autism spectrum and negative schizotypy), creativity, and mood using a small-n design. State space grids (SSG) enable study of the temporal variation of emotion while solving a computerized Tower of Hanoi (ToH) scientific creative problem-solving task. On the basis of a theoretical analysis of the relationships between these characteristics and problem-solving, it is hypothesized that participants with subclinical autism spectrum (AS) or negative schizotypy (SZ) traits will obtain higher creativity scores than controls, with creativity defined by 1/(moves*sec), on the ToH tasks, even after statistically controlling for IQ and task experience. It is also hypothesized that AS/SZ individuals tend to stay in negative moods longer and more frequently than controls. SSGs will be analyzed for possible emotion/problem solving attractors, repellors, and other dynamical characteristics. An overview of the dual importance of convergent and divergent thinking styles to creativity is provided as a context for the experiment. Finally, the utility and flexibility of SSGs in dynamics analysis will be briefly explored.