

Systematic ambiguity: the effect of creativity and fractal dimension on pareidolia

Antoine Bellemare

Concordia University, Montreal, Quebec, Canada

Yann Harel

Universit de Montral, Montreal, Quebec, Canada

Julien Besle

American University of Beirut, Beirut, Lebanon

Arne Dietrich

American University of Beirut, Beirut, Lebanon

Karim Jerbi

Universit de Montral, Montreal, Quebec, Canada

Abstract

Pareidolia refers to the perception of recognizable forms in noisy or ambiguous stimuli. It has mostly been studied in the context of pathologies such as schizophrenia and dementia. However, pareidolic perception occurs in general population without associated psychotic symptoms. This phenomenon is conceived as a compensatory perceptual mechanism that enables the brain to deal with ambiguous information. It has been hypothesized that pareidolia would be related to the emergence of creative ideation. In this study, we investigated the effect of fractal dimension on pareidolic perception by asking participants to perceive as many recognizable forms as possible in a set of Fractional Brownian Motion images with varying fractal dimensions. In addition, we further investigated, using questionnaires, whether creativity, openness personality trait and schizotypy are linked to pareidolic perception. Results show that creativity facilitates pareidolic perceptions and that this effect interacts significantly with the state of flow.