

Preface

Mental dynamics of a large mass of believing emotional entities, crowd-minds, acting at the edge of, or sometimes far beyond, rationality, was a subject of psychological studies in the last hundred years. As early as 1895 a similarity between crowds and spatially distributed physical systems was implicitly brought up by Gustave Le Bon, who was a friend of Henri Poincare, and thus might have got a physical influence on his social theories [Le Bon (1994)]. However, phenomena of collective irrationality have never been studied from physics, mathematics and computer-science points of view. In the book we try to fill the gap, and thus develop and study computational and automaton models of a crowd-mind.

What is a crowd-mind? The crowd-mind emerges when formation of a crowd causes fusion of individual minds into one collective mind. In the crowd-mind “derationalized by passion, deactualized by memory, ideas and purposes are reborn as irrational beliefs and symbols” [Moscovici (1985)]. Members of a crowd lose their individuality. The deindividuation results in emotional, impulsive and irrational behavior, self-catalytic activities, memory impairment, perceptual distortion and hyper-responsiveness to local neighbors; ultimately, this leads to “distortion of traditional forms and structures” [Zimbardo (1969)]. As Everett Dean Martin wrote in 1920

“... the crowd-mind is a phenomenon which should best be classed with dreams, delusions, and the various forms of automatic behavior” [Martin (1920)].

Rephrasing Ortega y Gasset, we can say that the crowd-mind does “not care to give reasons or even to be right”, and this brings forward a key feature of the crowd-mind — the right not to be reasonable: “the reason of unreason” [Ortega y Gasset (1985)]. Serge Moscovici indicates three notable

symptoms of losing personality in favor of crowd mentality: decrease of intellectual component, increase of emotional component and disregard for personal profit [Moscovici (1985)].

A collective delusion emerges when thought disorder interacts with disturbances of affect [Winters and Neale (1983)]. The delusion may be seen as a symptom of mental disorder or at least collective divergence from the norm [Moscovici (1985)]. Collective behavior of crowd-minds is highly non-linear because of mutual actions between delusive thinking, emotional contagion and also “collective movements and collective outburst” [Smelser (1962)]. In the book we study the non-linearity of crowd-minds using cellular automata, algebraic structures, artificial-chemistry paradigms and mobile automata on lattices.

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