

Complexity of Social Systems and Awareness of Ignorance

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Applications of the ideas related to complexity and chaos allow for presenting the hypothesis that every use of the those utterances reflects ignorance of the observer/participant¹. This hypothesis relates to all attempts to define complexity, should it be “hard” complexity (measurable + mathematical modelling) or “soft” (analogies, metaphors, qualitative + mixed qualitative/quantitative). This observation is not completely new and it was recalled by several authors, e.g. Simon, and by Gell-Mann and Lloyd 2004 who define mathematical sense of ignorance in systems complexity. Kiel (2009: 3) defines complexity of all types of systems as: “...the degree of human ignorance. This definition means that the less we understand about how an organism, a planet, or a human being behaves, the more complex the phenomenon”. This interpretation receives a new meaning under the conditions of information overabundance which brings about not only a large number of produced and received impulses but difficulties is assigning meaning to those impulses.

The aim of the paper is to extend the meaning of definitions of complexity of social systems as to make them more relevant to the conditions of information overabundance in modern society. Examples of applications of those extended definitions taken from management will be developed - organization at the edge of chaos and turbulence of environment. A draft version of this extension of definitions is proposed: *Complexity of social system can be defined as awareness of the observer/participant of limitations of possibility to identify the system's properties (“awareness of incomprehensibility (ignorance)”) essential for its description, identifying causal links and prediction determined by the theoretical/practical objectives. It may result both from insufficient amount of measurable information and also from increasing amount of measurable information available for observer/participant, and subsequently, from an increasing amount of potential meanings built upon this information.*

The proposed general definition stands in agreement with all already discussed interpretations of complexity. Further deepened investigations should allow for more specific features of this definition adapted for social systems and, after modifications, for all classes of systems. Complexity can be either the result of insufficient measurable information or the result of increasing amount of measurable information available for the observer/participant². Paradoxically, in some cases complexity can be better understood by rejection of information. This paradox can be partly solved by a good understanding of ignorance. It means that the participant/observer has to be able to assess his/her capability to deal with knowledge and ignorance about ignorance, and to decide about a relevant process of eliminating information or searching for information when defining complexity of a system – social or other.

The proposed definition does not imply that complexity may be reduced by developing more knowledge. On contrary, sometimes as to understand the problem for practical purposes, it is necessary to simplify it. This is the fundamental dialectics of complexity and simplicity. There are the situations that complexity is only partly reducible or not reducible at all. In such case the proposed approach to complexity embodies a new epistemological and methodological solution – advanced multi- and interdisciplinarity, which would allow to diminish complexity, or to show limited possibility of its reduction, if not impossibility.

Reference

- [1] Kiel L. D. (2009). Knowledge Management, Organizational Intelligence and Learning, and Complexity. In Kiel L. D. (Ed.). *Organizational Intelligence and Learning, and Complexity*. EOLSS, 1: 1-42, Oxford: EOLSS Publishers.

¹ Due to necessity of precision of definitions, the term complexity studies instead of complexity science or complexity theory is used. The reasons will be explained in the paper.

² The relations between measurable information and data are left for separate considerations.