

Behavior control as a function of consciousness.

I. World model and goal setting

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Functions that are referred in psychology as functions of consciousness are considered. These functions include reflection, consciousness of activity motivation, goal setting, synthesis of goal oriented behavior, and some others. The description is based on the concept of sign, which is widely used in psychology and, in particular, in the cultural–historical theory by Vygotsky, in which sign is interpreted informally. In this paper, we elaborate upon the concept of sign, consider mechanisms of sign formation, and some self-organization on the set of signs. Due to the work of self-organization mechanisms, a new method for the representation of the world model of an actor appears. The concept of semiotic network is introduced that is used for the examination of the actor’s world models. Models of some functions indicated above are constructed. The second part of the paper is devoted to functions of self-consciousness and to the application of the constructed models for designing plans and constructing new architectures of intelligent agents that are able, in particular, to distribute roles in coalitions.

Keywords: consciousness; goal setting; cultural-historical theory; sign; world model; cognitive functions

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