

## **Sign-based representation as a basis of the actor's Model of the World.**

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In cognitive research goal-oriented behavior means generating, particularly, the goal of behavior. However, in artificial intelligence research, the latter problem is not even set. Presumably, this is due to limitations related to symbol-based formalism.

The approach, which we consider here is based on the concept of sign that originated in the semiotics [1,2] and that is used, in an informal way, in cognitive psychology [3]. The results of a number of researches in the field of neurophysiology [4,5] also indicate the possibility of existence of sign structures in a world model of the subject of activity. Moreover, in the paper [6] the transition from the neurophysiological level on the psychological one, i.e. appearing of consciousness is connected with formation of signs. In [7] neurophysiological mechanisms of some cognitive functions and their relations with formation of a world language model are considered. Paper [8] is devoted to the appearing of mechanisms of communication on the basis of semiotics approach. In [9] D. Roy offers a sign-based model of the world as a basis for an operational component of the robot manipulator.

In the present paper the concept of sign is defined accurately. The family of relationships and operations on the set of signs are considered. Within the formalism it was possible to describe a number types of world models and cognitive functions. One of them – the function of goal-setting (generation of a behavior goal) is described in the report as an example.

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