

WHAT IS THE NATURE OF SWARM PSEUDO- INTELLIGENCE?

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From the perspective of the Homological Theory of Creative Processes (HTCP) [1], the contradictory nature of the Swarm Intelligence (SI) [2] concept has been critically examined. As a result of a systemic analysis of the nature of this phenomenon, it is proposed to consider it as Pseudo-Intelligence of the Swarm (SPI). SI is interpreted as the coordinated collective behavior of sufficiently primitive subjects in biological and virtual reality. The very concept of intelligence implies "the ability to learn, understand, and make judgments or have opinions that are based on reason" [3]. The ability to think and establish clear cause-and-effect relationships is provided by the presence of a highly developed brain, which is absent in the subjects of the swarm system. Hence, the contradiction of the analyzed term follows. The relevance of clarifying the nature of the coordinated behavior of primitive subjects that form a systemic integration without an external control center is determined by a wide range of practical applications of mathematical models of SI. The source of the swarm chain is the simple rules of primitive subjects demonstrating the property of rationality inherent in intelligence. The central thesis of HTCP is the homology of the creativity of Nature and the mind: evolution is understood as a creative process of co-evolutionary optimization of biocenoses with a variable cost of survival fiction [4], and the creativity of an individual as a mental model of evolution creativity with a cost function of verification by experience. From a mathematical point of view, we have homologous processes of creative optimization at the biological (unconscious) and mental (conscious) levels of the organization. That is why the cognitive error of attributing intellectual activity to unconscious optimization is made. Consequently, swarm behavior, which is the result of the natural selection of useful instincts, should be interpreted as Swarm Pseudo-Intelligence, despite the external sign of intelligence.

References (translated):

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