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## Associative Memory-Based Reasoning

A Computational Model of Analogy-Making in a Decentralized Multi-Agent Cognitive Architecture



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Through analogy, novel situations and problems can be understood when it comes to familiar ones. Conversely, effective analogy-making requires the sources of an entire cognitive architecture. There is converging evidence that analogy-producing lies at the very core of individual cognition. This book describes a computational model of analogy-making known as AMBR (Associative Memory-Structured Reasoning). AMBR is founded on a hybrid symbolic-connectionist multiagent cognitive architecture called DUAL. Unlike the mainstream types of analogy-making, AMBR runs on the decentralized representational scheme for complications and circumstances. Macroscopic behavior in DUAL emerges from the interactions of basic processing agents in powerful coalitions. The powerful emergent processing of the decentralized representations is consistent with the context-sensitive and constructive nature of human memory space. Both DUAL and AMBR had been developed by Boicho N. thesis written under Prof. This publication is certainly a revised and extended edition of the author's Ph.D. Kokinov and his graduate learners at New Bulgarian University. Kokinov's guidance at NBU. It'll be of curiosity to cognitive modelers and cognitive researchers more generally.



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