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Simulating Activities: Relating Motives, Deliberation, and Attentive Coordination

Abstract

Activities are located behaviors, taking time, conceived as socially meaningful, and usually involving interaction with tools and the environment. In modeling human cognition as a form of problem solving (goal-directed search and operator sequencing), cognitive science researchers have not adequately studied "off-task" activities (e.g., waiting), non-intellectual motives (e.g., hunger), sustaining a goal state (e.g., playful interaction), and coupled perceptual-motor dynamics (e.g., following someone). These aspects of human behavior have been considered in bits and pieces in past research, identified as *scripts*, *human factors*, *behavior settings*, *ensemble*, *flow experience*, and *situated action*. More broadly, *activity theory* provides a comprehensive framework relating motives, goals, and operations. This paper ties these ideas together, using examples from work life in a Canadian High Arctic research station. The emphasis is on simulating human behavior as it naturally occurs, such that "working" is understood as an aspect of living. The result is a synthesis of previously unrelated analytic perspectives and a broader appreciation of the nature of human cognition. Simulating activities in this comprehensive way is useful for understanding work practice, promoting learning, and designing better tools, including human-robot systems.

Related Work

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