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The Trust Awareness Paradigm

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Abstract

This paper introduces the 'Actual Reasoning' paradigm, a socio-cognitive approach designed to elucidate the concealed yet efficient reasoning processes inherent in both professional and everyday human activities. The concept of reasoning presents a multifaceted paradox. Despite extensive studies in various disciplines such as social sciences, logic, philosophy, psychology, and artificial intelligence, these theories and findings often remain compartmentalized. When queried about their reasoning processes, many experts commonly respond with, "No reasoning, I just decide." Additionally, psycho-sociological studies frequently rely on tests or games that lack robust connections to real-life situations. Moreover, these tests often emphasize cognitive biases rather than accurate deductions. Many human factors experiments focus on stimulus/response tasks, neglecting the inclusion of reasoning features. Lastly, prevalent in human-machine design is the notion that information should be as straightforward as possible, implying that reasoning is a counterproductive activity.

In contrast, everyday human interactions, particularly within professional collaborations, harbor numerous efficient and potent reasoning modules. Adopting a 'social-lab' perspective and employing a grounded-theory methodology, the Actual-Reasoning model addresses the aforementioned issues. This model, built upon classical logic meta-frameworks, has been applied to analyze various materials, including professional dialogues (e.g., Apollo mission transcriptions, CVR recordings), instructions, and everyday conversations. Consequently, reasoning emerges as a continual, inexorable, and often unconscious process of endogenous knowledge production, enriching all forms of human and human-machine cooperation. Formal logico-algebraic development of the Actual-Reasoning model is currently under investigation.

Keywords: abduction, cognition, deduction, induction, metacognition