

Fast Cognitive Reflection?

Examining the Time Course Assumption of Dual Process Theory

Bence Bago

Influential dual process models of human thinking posit that reasoners typically produce a fast, intuitive heuristic (i.e., Type-1) response which might subsequently be overridden and corrected by slower, deliberative processing (i.e., Type-2). In four experiments, we directly tested this time course assumption with the infamous bat-and-ball problem. We used a two response paradigm in which participants have to give an immediate answer and afterwards are allowed extra time before giving a final response. To knock-out Type 2 processing and make sure that the initial response was intuitive in nature, we used concurrent load and a strict response deadline on the first response. Our key finding is that we frequently observe correct responses as the first, immediate response. Response confidence and latency analyses indicate that these initial correct responses are given fast, with high confidence, and in the face of conflicting heuristic responses. Follow-up studies that tested people's response justifications further confirm that the initial correct responding is intuitive in nature. We sketch a revised dual process model in which the relative strength of different types of intuitions determines reasoning performance.