Conference Abstract

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Dual-process and Cognitive Checking

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My paper has three main sections. In the first I argue that a greater understanding of the mechanisms underlying human reasoning is required to advance the debate about human rationality. In the second I argue that in order for dual-process theories to make a significant contribution to the rationality debate they must provide a more detailed and empirically testable account of the interaction between system 1 and system 2 processing. The third section outlines my own 'Complex Cognitive Checking Model' of that interaction.

Heuristics and biases research has revealed a surprising difference between possible reasoning competence and reasoning performance. This evidence has sparked the 'rationality debate' which focuses on defining rationality and assessing how rational we are. Much of this debate now turns on an interpretational issue of whether poor reasoning performance reflects special interference (due to particular task demands) with the operation of otherwise rational reasoning systems or genuinely systematic errors in human reasoning. I argue that a more detailed understanding of the mechanisms underlying human reasoning is an essential pre-requisite for advancing this debate.

Dual-process theories of reasoning are well placed to give an account of the mechanisms underlying the competence/ performance gap. However, they currently lack detail concerning how systems 1 and system 2 interact. I argue that much of the explanatory power and theoretically important implications of dual-process theories depends on how the account of this interaction is fleshed out. The crucial methodological point is that we need to develop empirically testable models of the interaction between system 1 and system 2 processing.

My paper proposes the 'Complex Cognitive Checking Model', which is loosely based on Jonathan Haidt's (2001) Social Intuitionist Model' of moral judgements. My model places both system 1 and 2 processes within the same 'cognitive stream'. That is to say the outputs of system 1 can become inputs into system 2. According to my model system 1 generates intuitive provisional judgements or solutions which can be checked by the conscious rule-or model based processing of system 2. However, due to the limited capacity of system 2 processing and real time constraints this checking procedure is often not engaged. Whether the checking procedure is engaged or not is determined by the principles of Relevance Theory. As a result of system 1 processes being the input for system 2 processes we often engage in 'Lazy Checking'. This is where system 2 processing searches for any potential justification of the intuitive judgement generated by system 1. If even weak justification for the intuitive judgement is found before any disconfirming evidence the intuitive judgment becomes the final judgement.

The 'Complex Cognitive Checking Model' has a number of advantages. It can explain the considerable evidence of post hoc justification in moral reasoning and why conscious reasoning tends to focus on justification. The model can account for the substantial evidence demonstrating that people search exclusively for evidence which supports their view, and often stop searching after finding even a single piece of supporting evidence. The checking stage provides a natural point for the application of the principles of Relevance Theory, which are otherwise in danger of floating freely throughout cognition. Finally, the model provides an explanation of how performance is improved, when it can be improved.