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PRESS RELEASE

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Academics offer new insights into source of human irrationality

Opinion article asks for reappraisal of current wisdom on the systems of our minds which give rise to errors in decision making

A new academic investigation has called for a reappraisal of popular theories on the source of human irrationality.

An opinion article co-authored by academics at Birkbeck, University London suggests a role reversal of current wisdom on the brain systems that come into play when we carry out reasoning tasks i.e. any time we attempt to solve problems or make decisions.

The article, titled *On the Source of Human Irrationality* is published today (Tuesday 19 April) in *Trends in Cognitive Sciences*.

The academics explain that on the standard explanation publicised in Nobel prize-winner Daniel Kahneman's book, *Thinking, fast and slow*, human irrationality arises from two brain systems that swing into action when carrying out these mental tasks:

- **System 1:** An unconscious system, older in evolutionary terms, which works heuristically i.e. based on rules of thumb and educated guesses. This system often leads us into error, and needs correcting by System 2.
- **System 2:** A conscious system which evolved in humans alongside the development of language and working memory (i.e. the part of short-term memory which is concerned with immediate conscious perceptual and linguistic processing). This system is slower and more analytical than System 1, and therefore more capable of rational decision making.

The newly published article suggests the time has come to reconsider the distinction between these two systems, in light of more recent empirical and theoretical developments, which suggest that:

- **System 1** is capable of producing rational reasoning and decision making, meaning it is a lot more rational than it first seemed
- **System 2** may actually be a source of error due to limitations of working memory, and our limited ability to consciously access the highly rational – though unconscious – System 1
- And further, while **System 2** may cause errors, it also allows people to communicate their reasoning with others – thereby providing a social context that facilitates error correction

The academics behind the meta-study suggest this fresh perspective on the source of human irrationality offers new avenues for exploring it.

Professor Mike Oaksford, head of Birkbeck's Department of Psychological Sciences, and corresponding author of the paper, said: "What we point to in this review is a reversal of current wisdom on the two systems of human reasoning. What we highlight is that error does not emerge predominantly from System 1, as previously thought, but instead from the later-evolved System 2.

"This reversal of roles suggests important areas of theoretical integration, and of new ways to study human reasoning empirically."

"This reversal highlights the importance of going with our gut intuitions on certain types of problem—those where we have some relevant experience—and suggests that errors emerge in conscious over thinking of decisions. It also suggests that productive argument between individuals in the social domain can correct our individual reasoning in part by supplementing our limited experience."

The study, *On the Source of Human Irrationality*, has been published today in *Trends in Cognitive Sciences*, a peer-reviewed reviews journal published by Cell Press

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