

# CURRENT SCIENCE

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EDITORIAL

## Cognitive Psychology: Impulsive Decision Making and Choice Blindness

Psychology is a discipline that lies outside the borders of the traditional sciences. As the area of 'cognitive science' gathers strength, the borders that separate psychology and the sciences are beginning to become porous and permeable. Indeed, over the past half a century or more the blurring of boundaries, between the 'hard' physical and natural sciences on the one hand and the 'softer' social sciences on the other, has been most evident in economics, which has rapidly succumbed to the advance of mathematics, statistics and, at times, physics (or more accurately, physicists). It has become possible to hold mathematical modellers responsible for the woes of investment banks and other financial institutions in a turbulent economy. Even biology, with ideas dating back to Darwin, finds a place in the discourse of economics, which shares a very large border with the sciences. A subdiscipline, behavioural economics, is an area where psychology and cognitive science begin to intrude. Researchers who attempt to understand the processes of decision making need to cross and recross the borders between various disciplines with great facility. The common labels, 'scientist' or 'social scientist' do not seem to easily describe researchers, who patrol no-man's land, which acts as a buffer zone between the hard and soft sciences. Decision making is a subject that interests many people; after all every individual makes decisions, minor or important, almost every day. Some turn out to be correct; many are often wrong. Individuals vary widely in their abilities to take decisions quickly. In governance, the ability to postpone decision making has often proved valuable in India. Unresolved issues, sometimes, evaporate slowly; 'benign neglect' as a policy can occasionally be a powerful instrument. While decisiveness is a quality that is often sought in leaders, the processes by which decisions are reached vary widely. Consultation and consensus commonly guide decision making in organizations, especially in public institutions. Committee formation is a favoured and time tested strategy; collective decisions seem so much safer when contentious issues are involved, especially in an age where the words transparency and accountability dominate public discourse.

Years of dealing with large numbers of highly educated individuals, both as an academic and as an administrator, have left me with a healthy respect for any research that

appears to be directed at an understanding of human behaviour. Decision making by the management in academic institutions, operating in a non-hierarchical manner in an unconstrained environment, is never easy, since choices have to be made between widely differing courses of action, suggested by academics with very strong opinions. A simplistic view of decision making would suggest that all options are carefully considered, pros and cons evaluated and a rational judgement reached. Most often this is not really what happens. There is a great deal of conflicting opinion, with coherent signals buried under a high level of noise, even while pressure mounts for a quick decision to be made. In such situations decision makers act on gut feelings, trusting intuition to be the best guide. Are impulsive and intuitive decisions more often right than wrong? Or is it the other way around? As one who favours intuitive judgements, a course often preferred by those with little detailed knowledge of the issues involved, I was struck by the first line of an abstract of a commentary in *Nature* which proclaimed 'Acting on a gut feeling can sometimes lead to poor decisions'. This somewhat disheartening statement was followed by a very intriguing assertion: 'But it will usually support the common good, according to a study showing that human intuition favours cooperative, rather than selfish behaviour' (Gächter, S., *Nature*, 2012, **489**, 375). My curiosity was further aroused when I noticed that the author was affiliated to an academic unit that was interestingly named as the 'Centre for Decision Research and Experimental Economics'. The commentary engagingly titled, 'A cooperative instinct' highlights a paper, 'Spontaneous giving and calculated greed' appearing in the same issue (Rand, D. G. *et al.*, *Nature*, 2012, **489**, 427). The authors ask a question that must have engaged the attention of observers of human behaviour for a very long time: Why do human beings cooperate even when behaviour which benefits others requires that a personal cost must be incurred? The central issue of concern to Rand *et al.* is the 'cognitive basis of cooperative decision making in humans'. The problem addressed, simply put, is whether humans are intuitively self centred and cooperation is a result of rational reflection or whether cooperative behaviour is an instinctive response, with thought and analysis favouring selfish actions. Their conclusions, reached using 'economic games' suggest that 'intuition

supports cooperation in social dilemmas, and that reflections can undermine these cooperative impulses'. The study by Rand *et al.* raises interesting questions which the authors highlight: Is it possible to think of the 'design of institutions that promote cooperation'? Is cooperation 'innate and genetically hard wired, rather than the product of cultural transmission'? They draw attention to earlier studies that demonstrate 'spontaneous helping behaviour in children' (Warneken, F. and Tomasello, M., *Science*, 2006, **311**, 1301).

In his commentary, Simon Gächter draws attention to a recent book authored by Daniel Kahneman (*Thinking Fast and Slow*, 2011, Allan Lane) which, in his words, 'presents a wealth of evidence that much of human decision-making is governed by fast and automatic intuitions, rather than slow effortful thinking'. Kahneman, the 2002 Nobel Laureate in Economics, notes in his lecture following the award that he together with Amos Tversky (1937–1996), 'explored the psychology of intuitive beliefs and choices and examined their bounded rationality'. Kahneman's work 'distinguishes two generic modes of cognitive functions: an intuitive mode in which judgements and decisions are made automatically and rapidly, and a controlled mode which is deliberate and slower' (Nobel Lecture, December 2002). This analysis also suggested that while 'most behaviour is intuitive, skilled, unproblematic and successful', corrections to intuitive judgements sometimes have to be made. In such cases intuition 'will be acknowledged, but the intuitive impression will be the anchor for the judgement'. Everyone makes judgements in daily life. Administrators and editors make judgements, often on matters where their skill and expertise is limited. Juggling both roles, I realised how much one relies on instinct and intuition, rather than calm, deliberate and informed reflection. The paper by Rand *et al.* and Gächter's commentary suggest that impulsive responses may often be more generous than decisions reached after a great deal of thought. The 'economic games' approach used in this study allows participants to 'choose to either keep an allocation of resources for themselves or contribute all or a portion of their allocation to a collective pool, which is then distributed evenly among all players'. This is a commonly encountered situation in research institutions, like my own, where individually obtained resources may need to be shared for a common, public good. Time pressure in forcing quick decisions seems to promote cooperative behaviour, suggesting that in many difficult situations it might be wise to hasten decision making. It is comforting to think that the average individual is intuitively cooperative and generous, while the calculating pragmatists, who hopefully are a minority, are hard wired to be selfish. Reading about research at the confluence of economics, psychology and cognition can be instructive and even entertaining.

Human behaviour is greatly determined by the opinions that individuals form over time. Can opinions change

over time? Undoubtedly, they can and very often do, as people respond to inputs of information. Indeed, in science opinions on poorly understood issues change constantly as new evidence accumulates. It is also a fact that stubborn individuals often hold on to pet hypotheses even as the rug is being pulled from under their feet. Moral issues are more perplexing than the debates in science. A recent study titled, 'Lifting the veil of morality: Choice blindness and attitude reversals on a self transforming survey' describes a research strategy, which reveals that moral attitudes are both flexible and surprisingly easy to change (Hall, L., *PLoS One*, 2012, **7**, e45457). To a simple minded scientist like myself, the experimental design used by researchers in cognitive psychology seems devious and designed to expose fickle minds. Hall *et al.* have carried out a survey using a simple two page list of statements on issues that appear to require moral judgements. In a readable summary that appears online in *Nature News* (19 September 2012) Zoë Corbyn points out that the issues range 'from prostitution to the Israeli–Palestinian conflict'. In eliciting answers and discussing subsequent justifications for their responses, the participants were exposed to an intriguing sleight of hand by the researchers. Corbyn describes the trick: 'Each contained two sets of statements, one lightly glued on top of the other. Each survey was given on a clipboard, on the back of which researchers had added a patch of glue. When participants turned the first page over to complete the second, the top set of statements would stick to the glue, exposing the hidden set, but leaving the responses unchanged.' Hall *et al.* cleverly changed one word in two of the statements in the hidden set to provide a response precisely opposite to the original. Half or more of the participants were willing to accept and even argue in favour of opinions opposite to the one they had originally indicated, serving to confirm a phenomenon originally labelled as 'choice blindness', which appears to influence taste, smell and aesthetic choice. While the study reported by Hall *et al.* will stir debate on the reliability and efficacy of questionnaire based surveys, the complexity of decision making and opinion forming processes in the human brain are likely to confound researchers in cognitive psychology for the foreseeable future. As more 'hard' scientists drift into the area of cognition, with tools that directly measure physiological activity in the brain, the subject is likely to enter a phase of great flux, fuelling many future debates.

For administrators and politicians charged with the responsibilities of governance, it may be heartening to note that more than half the signatories to a petition expressing a view or demand, may indeed be able to support an exactly opposite view or demand. Flooded, as we are, with many contentious moral and social issues we may benefit by reflecting on impulsive decision making as a positive force and choice blindness as a means of understanding fickle public opinion.

P. Balaram