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ECONOMICS, EXPERIMENTS AND PSYCHOLOGY

WITH THE ANNOUNCEMENT that the 2002 Nobel Prize in economics had been awarded to Daniel Kahneman of Princeton University and Vernon Smith of George Mason University, the Nobel committee has finally acknowledged the force of one of the most important forces in economics: psychology.

Economics has long been criticised for losing touch with reality. The key to much of our modern theory is an abstract "rational economic man", an unfeeling but hyper-rational creature, who cares only about himself. Indeed, the 1990s saw the term "economic rationalist" often used pejoratively to describe the "unfeeling technocrats" who were perceived to dominate university economics departments and Canberra's halls of power. From Michael Pusey to Bob Ellis, critics have tended to equate economic rationalism with economic analysis.

ECONOMICS

But not all economics is rational.

A new breed of behavioural economists, led by Professor Kahneman, has sought to bring insights from psychology in touch with economics. The method is simple, but radical. Rather than observe people in markets and find ways to rationalise their behaviour, these social scientists insist on close and careful observation.

Originally trained as a psychologist (and indeed the first psychologist to win the Nobel Prize in economics), Professor Kahneman set about testing various aspects of the rational paradigm. In a series of experiments, he has systematically examined how people make decisions when facing uncertainty. Much of this research was conducted with Amos Tversky of Stanford University, who almost certainly would have shared this prize if Nobels were awarded posthumously.

Kahneman's findings were at odds with much of rational economics. For instance, he found that people tend to give possible losses twice as much as weight as gains. This can then lead people to be sensitive to how a particular decision is framed. In a famous experiment, doctors were found to be more likely to recommend a particular treatment to combat a hypothetical disease outbreak if it is described in terms of survival rates (gains) rather than mortality rates (losses).

People also make probability assessments that violate the basic laws of probability. For instance, a hypothetical "Linda" was described as a bright and outspoken philosophy major interested in social issues. Experimental subjects assessed it more likely that she was *both* a feminist and a bank teller, than that she was simply a bank teller.

Kahneman argues that instead of actually making complex probability assessments, we tend to use very simple rules of thumb. These heuristics are usually fairly accurate, but sometimes lead us to make mistakes.

Just as game theory did in the 1970s, behavioural economics is revolutionising economics today. Researchers following in Kahneman and Tversky's footsteps are drawing on psychology to integrate notions of fairness, reciprocity, self-control, emotions and identity into economics.

Vernon Smith's contribution is no less important. A major barrier to the acceptance of Kahneman's ideas had been reluctance among economists to accept any forms of experimental evidence, arguing that while subjects tested in the lab may act irrationally, when it comes to real market transactions involving high stakes, we are far less likely to err. This methodological barrier hindered the flow of ideas between the laboratory-based psychology and market-based economic analysis.

Smith has made laboratory experiments respectable within economics, and designed fundamental methods to enhance their plausibility. Rather than simply postulate that one type of market works better than another, Smith has insisted on trialling both under controlled conditions. For instance, economic theory had long suggested that most types of auctions would yield the same final price. Yet in his laboratory experiments, a standard "open-cry auction", with bids announced in

increasing order, consistently yielded a higher result than "Dutch auctions", in which the auctioneer starts with a high price, and keeps lowering it until a bidder is found.

Not surprisingly, this work is of intense interest to policy-makers, and Smith was consulted in the design of Australian energy markets. When the value of the prize is high, even small differences in design in these markets can have important economic impacts.

AMONG ECONOMISTS in the USA, behavioural economics has been more widely recognised at the "saltwater departments" (those in the coastal universities of Harvard, MIT and Berkeley) than the "freshwater departments" (those on the Great Lakes, such as the Universities of Chicago and Minnesota). One critique from the freshwater departments has been that the behaviouralists have been slow to show that their psychology-based theories have important implications in the real world.

Yet the research is beginning to emerge. A recent paper by James Choi, David Laibson, Brigitte Madrian and Andrew Metrick has shown that framing has important implications for saving patterns. In a study of three major corporations, they found that when employees were given the *option* of enrolling in a savings plan at the time of joining the company, around three in ten did so. But when employees were given the choice of *opting out* of the savings plan, the enrolment rate rose to eight in ten. The most dramatic rise in savings came among employees who earned least—suggesting that simple changes can have dramatic effects on raising the saving rate of the poorest.

Laibson has also been at the forefront of designing a model of intertemporal choice known as "hyperbolic discounting", which is rapidly finding its way into other areas of economics. The insight behind hyperbolic discounting is straightforward—when faced with a choice between $10 in thirty days, and $11 in thirty-one days, almost everyone takes the $11. But when the choice is between $10 today and $11 tomorrow, some people will take the $10. The trade-off between today and tomorrow is surprisingly steep, and at odds with the conventional models in economics that suggest the two alternatives are essentially the same—although posed at different points in time—and as such, similar choices should be made.

One of the first studies to make use of hyperbolic discounting, by Stefano Della Vigna and Ulrike Malmendier, young assistant professors at Berkeley and Stanford respectively, has shown that gym-goers who purchase monthly or annual memberships tend to attend so infrequently that they end up paying more per visit than the casual rate. On average, gym-goers in their study were $700 worse off than if they had gone on a pay-per-use basis. Della Vigna and Malmendier conclude that this reflects the fact that many gym users are overconfident at the outset about their ability to sustain an exercise routine, but when faced with the actual decision, are unwilling to suffer the short-term pain.

Finally, work by Jonathan Gruber and Sendhil Mullainathan (both at MIT) shows that taxes can make us happier in the long run; the focus of their study was the cigarette tax. If smokers are hyperbolic discounters, they will actually be happier if society imposes limits on their ability to make bad decisions in the short run. Unlike "rational addiction" models, the hyperbolic model suggests that smokers value self-control devices, of which taxes may be one. Indeed, when the authors test this hypothesis against data from Canada and the United States, their evidence shows that levels of self-reported happiness are higher among smokers in states and provinces with higher cigarette taxes.

Until now, experimental economics and behavioural economics have been closely linked, but their very success may be leading to divergent paths. As economists have started to understand that the strong rationality assumptions underlying their theoretical models may be violated, they have shown an increasing penchant for testing their ideas in the laboratory. Equally, behavioural economists are starting to leave the laboratory, and look to explain a variety of problems in the world around us. Issues of saving behaviour, gym attendance and smoking taxes are likely only the beginning. Thanks to the 2002 Nobel laureates, the scope of this research is likely to only expand.

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*Footnotes are available from the **Quadrant** office.*