



# Psychology of economics

Liam Delaney and Martin Ryan outline the main schools of thought that investigate the interconnection of psychology and economic behaviour.

**E**conomics and psychology share similar origins in philosophy but they diverged markedly in the 20th century. Psychology followed the more experimental route of the biological sciences, while economics moved towards the mathematical formalisation of physics.

Nevertheless, there has always existed debate about the assumptions of economic models and, in particular, the rationality assumptions that govern much traditional microeconomic theory.

Daniel Kahneman and Amos Tversky are synonymous with this work. The former was awarded the Nobel Prize for Economics in 2002, while the latter died shortly beforehand. Their models showed several predictable biases in human judgment and reasoning that mitigated against the use of formal models that assumed rationality to predict people's actual behaviour. In the newer generation, Matthew Rabin, the Berkeley behavioural economist, was awarded the Bates Clarke medal, the equivalent of a Nobel Prize for economists aged under 40, for his pioneering work on psychological aspects of economic decision-making.

Look at most of the top US economics departments right now and you will see both their undergraduate and graduate students receiving detailed training in how the human mind works, what implications this has for economic models and how insights from economics can be applied in the real world. MIT, Harvard, Chicago and Princeton have been particularly active. What a few years ago was peripheral and kept alive by individual talents is now rapidly becoming the status quo in the top echelons of the discipline.

One literature that is particularly alive at the moment is behavioural finance – the development of behavioural interventions to modify

financial behaviour has been a fruitful product of this effort. This is set in a context of ageing populations throughout the world and the perceived need among many for the savings rate to be increased. One of the core ideas in this literature is that people's overall welfare can be improved through appropriate insurance and savings behaviour but that people often will not take these actions. Reasons include procrastination, lack of information, inability to understand the financial instrument and inappropriate timing of the delivery of costs and benefits of the instrument (inappropriate in the sense that they do not tailor to people's actual preferences).

Several solutions have been proposed in the literature. The most famous to date is the "Save More Tomorrow" initiative outlined by Thaler and Benartzi in the *Journal of Political Economy* (2004). The idea behind this scheme is that people discount the future in a hyperbolic fashion. To use plain English, we tend to be rather present-orientated when it comes to immediate trade-offs. For example, I will demand more satisfaction today at the expense of tomorrow such as taking €5 today rather than waiting for €6 tomorrow. However, when it comes to equivalent trade-offs far away in the future, we seem to be more indifferent so that €5 in 10 years versus €6 in 10 years and one day is seen as less of a trade-off.

The idea that Thaler and Benartzi had was to capture this feature of human decision-making that, in essence, causes people not to save and

turn it in to a pro-saving motivation. To do this, they offered people a scheme whereby they save a proportion of their future earnings. The idea is that people will not "feel the pain" so

much if the saving is taken out of future salary and also if the saving does not result in any decline in living standards even over the short term. The results below taken from the original article are striking.

"Our key findings, from the first implementation, which has been in place for four annual raises, are as follows: (1) a high proportion (78%) of those offered the plan joined; (2) the vast majority of those enrolled in the SMarT plan (80%) remained in it through the fourth pay raise' and (3) the average saving rates for SMarT programme participants increased from 3.5% to 13.6% over the course of 40 months. The results suggest that behavioural economics can be used to design effective prescriptive programmes for important economic decisions."

While the initial 3.5% is a higher savings rate than the average US rate and thus these companies can be thought of as somewhat of a select sample, these results must be seen as remarkable and need to be at least somewhat to the forefront of Irish thinking in these key areas. Thaler's work on the power of behavioural economic ideas and their potential use in simplifying financial programmes has recently been debated in Congress and there is a general level of interest across government and industry in the potential implications of these findings.

There have been several further examinations of the use of behavioural economic ideas in boosting savings rates, including experiments on the potential power of simplification of financial instruments in boosting savings rates. Experiments with 401(k) retirement packages (in Ireland the rough equivalent would be defined-contribution schemes) in the US suggest that changes in the manner in

which the instruments are delivered and framed can change behaviour toward saving for an equivalent discounted value. For example, a recent Wharton school paper reported on "Quick Enrolment" which is designed to reduce the complexity of the retirement savings decision. Despite essentially being a simplification of the 401(k) scheme rather than a major change in its monetary value, participation in this programme tripled 401(k) participation rates among new employees at one company.

The literature is also pointing to the strong independent effects of automatic enrolment on savings behaviour. In their 2001 paper, Bridgit Madrian of the University of Chicago and Dennis Shea from the United Health Group find that participation is substantially higher under automatic enrolment and that a substantial proportion of people retain the default amount even though this default amount varied among participants in the scheme. They argue that this arises from inertia and is also perhaps due to the fact that employees interpret the default options as investment advice. The former result certainly points to a potential alternative to mandatory pensions, one that John McHale, the Canadian-based economist, has argued for in the past.

A vigorous research paradigm is running alongside this work trying to figure out in detail what mechanisms people use to weigh up future consequences. The main effort has gone in to investigating the "hyperbolic discounting" idea discussed above. A recent paper has shown that small children tend to discount the future in this fashion. Other papers have even shown this for animals. Another paper, in the hallowed journal *Science*, has shown that different brain areas are responsible for making decisions at different time horizons. Indeed, much of the large emerging literature integrating neuroscience and economics has focused explicitly on these issues. There is some technical debate about what exactly these observed trade-offs are proving,

However, the research and practical implications have not been lost in the fog.

UCD's Geary Institute and Maynooth's psychology department are currently conducting research that combines economics, psychology and neuroscience to examine how people make complex decisions about their future in different areas of their life such as health, finance, relationships and so on. We hope to provide a rigorous account of the biology of how people make decisions in ways that will eventually inform diverse areas such as health insurance, pension planning, drink-driving, smoking and savings policy.

We are also trying to adapt some of these key ideas to examine their potential use in other areas that involve future-orientated behaviour in conditions of complexity. Does the complexity of tax-filing have extra negative effects on effort and innovation on top of the financial disincentive? Are potential college applicants from non-traditional backgrounds turned off because of the fear of dealing with bureaucracy? Behavioural aspects of innovation and entrepreneurship also offer potential gateways to understanding how human potential in key areas can be unlocked by appropriately framed policy instruments tailored to how people actually think. This is certainly something on which people involved in such areas should keep an eye. ■

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## Many studies look at the use of behavioural economic ideas in boosting savings rates

