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Empiricism returns

Behavioural economics is almost certainly the most fun and influential field in economics today, setting out to explore human behaviour in all its scope and strangeness. Be it the cooperative behaviour amongst the Indonesian whale-hunters of Lamalera village or the reluctance of university students to avoid painful electrocution when presented with costless alternatives, behavioural economists seek to understand the forces that govern the decisions we make.¹ In this field lie the keys to making this world a better and more compassionate place.

The 2008 financial crash

On 15 September 2008, the fourth largest investment bank in the United States filed for the largest bankruptcy in history. For many commentators, this marked the point at which the most severe financial crash the world had experienced since 1929 became unavoidable. In the years immediately following the collapse of Lehman Brothers, some 30 million people worldwide lost their jobs due to the crash, many being consigned to long-term joblessness; poverty and inequality rates in developed countries rose to levels unprecedented in recent history, with poverty rates rising above 15 per cent in both the United States and Europe; and rates of mental illness, suicide and abuse all increased markedly. The countries hardest hit lost a decade of economic growth, but the true human costs of the crash – the devastation experienced by countless individuals and families – will never be fully understood (Okter-Robe & Podpiera 2013).

The terrible economic events of 2008–13 have led to something of a revolution within the economics discipline, for many validating the dissatisfaction

amongst economics students that had been growing throughout the preceding decade. Back in June 2000, a group of university students in Paris circulated a petition calling for an increase in the realism of their economics curriculum, which they believed was too narrow, abstract and detached from the real world. The following year, 27 PhD candidates at the University of Cambridge launched their own similar petition and other students gathered at Kansas City issued a letter calling on economics departments around the world to reform their courses. In March 2003, students at Harvard University joined the fray. The “Post-Autistic Economics” movement had been born.²

Then came Paul Krugman’s stinging criticism of the economics discipline, which suggested the reasons for this growing dissatisfaction were also the reasons for its inability to predict and prevent the financial crash. In his now infamous article in *The New York Times Magazine* on 2 September 2009, the Nobel Prize-winning economist asserted that “the central cause of the profession’s failure was the desire for an all-encompassing, intellectually elegant approach that also gave economists a chance to show off their mathematical prowess.” The problem, he argued, was that through being too narrowly focused on their abstract mathematics, economists had overlooked the factors that make economies vulnerable to crises: “the limitations of human rationality that often lead to bubbles and busts; to the problems of institutions that run amok; to the imperfections of markets – especially financial markets – that can cause the economy’s operating system to undergo sudden, unpredictable crashes; and to the dangers created when regulators don’t believe in regulation” (Krugman 2009). Krugman’s view was echoed in the presentations at the inaugural conference of the Institute for New Economic Thinking in Cambridge in April 2010, which were bolstered in November 2011 when a group of Harvard undergraduates staged a walkout from their introductory macroeconomics course in support of the Occupy movement and in protest at what the organisers saw as the inequality reinforcing bias of the subject.³

By the time the effects of the financial crash had subsided, the pressure for economics to change – for its curricula to be more broadly conceived, more factually grounded on empirical research and less mathematically abstract – had become well established and could not be ignored. Economics began to change, with behavioural economics taking a central role.

The disagreement between friends

The nature of this conflict between the economics mainstream and its discontents is certainly not new to the twenty-first century, being at its heart about how the world can be understood. In relatively recent history, this fundamental question of epistemology – of the nature of understanding – dates back to the start of the Enlightenment movement in the mid-eighteenth century, when philosophers grappling with this issue in salons across Europe aligned themselves into two camps. On one side were the rationalists, believing that understanding comes from rational thought and logic: from exercising the human mind, which the Enlightenment had recently liberated from the binds of religious assertion and superstition. On the other side were the empiricists, arguing that understanding can only arise from experience: from observing, measuring and inspecting the real world. The two camps had the same objective, but approached it from opposing directions: the rationalists starting with our minds and using the powers of thought to create explanations to be compared to reality; the empiricists starting with reality and gathering data to be organised into explanations.

Those considering the human, rather than the natural, world – the “Worldly Philosophers” – were faced with the very same question (Heilbroner 2000). This was perhaps most evident in the disagreement between David Ricardo and Thomas Malthus: two good friends who helped to establish economics as a discipline at the turn of the nineteenth century. Ricardo (1772–1823) was a wealthy stockbroker and landowner, who is perhaps best known for his opposition to the UK Corn Laws and his demonstration of the importance of free trade: one of his many contributions to economics (or political economy as it was known at the time) that remain essential components of courses today. Ricardo was a keen rationalist who maintained that economics and the human interactions they comprise are best understood through the construction of abstract mathematical models that lead to clear and coherent predictions. Malthus (1766–1834), a graduate from Jesus College at the University of Cambridge and a cleric in the Church of England, is best known for his *Essay on the Principle of Population*. Malthus disagreed with his good friend’s stance on what would come to be called economic methodology, instead asserting an empiricist position about the need to gather data from observations of the real world and using that to derive conclusions.

Ricardo won the debate, possibly because of his more influential position and his better-resourced supporters, which established the course the subject has navigated ever since. The fact that students today are introduced to indifference curve analysis (as shown below) in their first lectures can be traced back to the outcome of the Ricardo–Malthus methodological debate. An outcome that many later economists subsequently lamented, including Joseph Schumpeter, who coined the term “the Ricardian vice” to describe the rationalist economics approach, and John Maynard Keynes, who asserted the subject would have been better served had Malthus rather than Ricardo been its father.

The mainstream bit

Behavioural economics – and so this book – is primarily concerned with the economic decision-making of us as individuals: with the nature of our preferences, the cognitive processes we employ, the social nature of our interactions, and our susceptibility to manipulation. It is predominantly an alternative approach to mainstream microeconomics. It is helpful, then, to consider the content of most opening undergraduate microeconomics lectures before examining the alternative approach.

Consider a situation in which we are choosing what to buy with our limited finances. And for the purpose of simplicity, consider there are only two goods available, both of which are desirable. All we need do in this situation is to choose which combination – or *bundle* – of the two goods we buy. This situation is summarised in Figure 1.1. With the quantities of the two goods measured along the axes, any bundle can be represented as a point on the diagram, such as the bundles identified as A and B, comprising A_1 and A_2 and B_1 and B_2 amounts of the goods, respectively. Our fixed finances are represented by the *budget line*, which traces the bundles for which we have to spend every penny we have. The vertical and horizontal intercepts of the budget line are simply the quantities of goods 1 and 2 we can buy if we spend all we have on them, respectively, and its gradient is simply the ratio of the prices of the two goods.

Since the work of Francis Ysidro Edgeworth (1845–1926), our preferences have been represented by indifference curves, each of which traces a set of bundles between which we are indifferent. In other words, each indifference

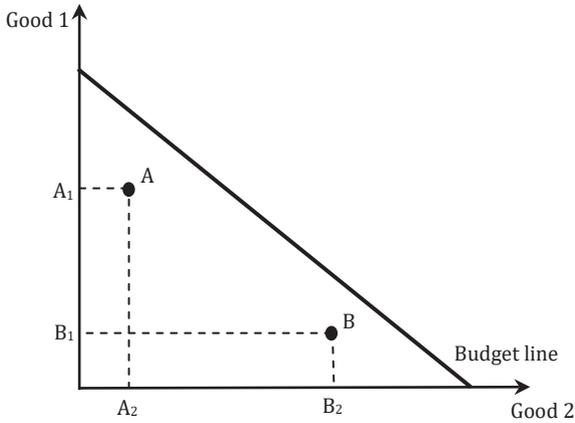


Figure 1.1 Our budget and the available bundles

curve traces a set of bundles that give us exactly the same amount of satisfaction, which economists call *utility*. Two such curves are shown in Figure 1.2. As both goods are desirable, we prefer to have more rather than less of both and so the bundles traced by IC_2 are preferred to those traced by IC_1 . Indifference curves are usually curved in the convex manner shown because we tend to prefer bundles that consist of moderate quantities of both goods to bundles that consist of a large quantity of one good and only a little of the other.

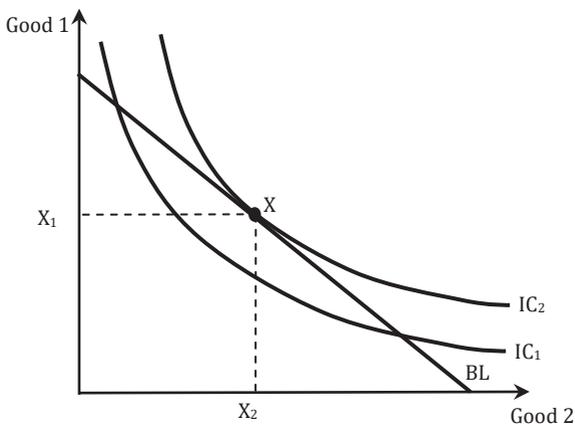


Figure 1.2 Our preferences and choice

Given our indifference curves and our budget line, we should buy the bundle on the highest indifference curve we can afford: bundle X in the diagram and so X_1 and X_2 quantities of goods 1 and 2, respectively.

John Hicks and Roy Allen presented this simple, abstract model of consumer choice in 1934 (Hicks & Allen 1934). That it continues to be a cornerstone of every introductory economics course is testament to both its usefulness and elegance, facilitating the analysis of changes in our budgets and in the prices of goods, and also of different forms of taxation. It is certainly not intended as a descriptive model of behaviour: no economist claims that we actually make consumption choices this way. Its intention is far less ambitious than that: it seeks only to represent our decision-making *as if* we are completely logical and to provide economists with a tool with which they can establish the logical effects of inevitable events.

Despite its strengths as a piece of rationalist work, it is grounded – at least implicitly – on a number of assumptions that behavioural economists have subsequently questioned:

- We employ *optimization*: that our goal when making decisions is to maximize our utility; that we seek the single option that affords us the most satisfaction possible.
- Our preferences are *complete*: that we are able to compare every possible option to one another and to rank them all according to the satisfaction they afford us.
- Our preferences are *stable*: that we maintain our ranking of options unless the nature of those options change.
- Our preferences are *reflexive*: that, when faced with two options that are absolutely identical, we are indifferent between them and so naturally assign them the same position in our ranking of options.
- Our preferences are *transitive*: that, if we prefer option A to option B, and we also prefer option B to option C, then we must logically prefer option A to option C.
- The *ownership of an item is unimportant*: that whether or not we initially possess an item does not affect our valuation of it nor our terms when it comes to trading it.
- We are *isolated* decision-makers: that we make choices based entirely on our own preferences, independently from any influence from other people; we solely seek to maximize our own utility.

Table 1.1 presents some of the work in behavioural economics that has contradicted these assumptions, all of which are examined later in the book.

Table 1.1 Violations of mainstream assumptions

Mainstream assumption	Behavioural contradiction
We employ optimization	<ul style="list-style-type: none"> • Bounded rationality and satisficing
Our preferences are complete	<ul style="list-style-type: none"> • Decision fatigue • Cognitive load
Our preferences are stable	<ul style="list-style-type: none"> • Hyperbolic discounting • The dual-self model
Our preferences are reflexive	<ul style="list-style-type: none"> • The Asian disease problem • Framing
Our preferences are transitive	<ul style="list-style-type: none"> • Priming
The ownership of an item is unimportant	<ul style="list-style-type: none"> • The endowment effect
We are isolated decision-makers	<ul style="list-style-type: none"> • Our other-regarding preferences • Herding and anti-herding

Behavioural economics

Behavioural economists set aside the Ricardian, rationalist approach to understanding our behaviour and adopt the Malthusian, empiricist approach instead. Starting with observations of our actual behaviour, from across the span of life, behavioural economists seek to identify universal characteristics of our behaviour and common factors that cause us to behave in different ways in different settings. Their intention is to understand and predict our behaviour without having to rely upon any untested assumptions, however logical they may be, nor the need to invoke the *as if* condition on which all rationalist work is ultimately grounded.

As an academic discipline, behavioural economics occupies the area of overlap between economics and psychology (see Figure 1.3). It does so in a very specific way, though, applying the findings and the typically more empiricist methodologies of psychology to questions and settings that have traditionally been in the remit of economics (Earl 2005). This sets it apart from the related discipline of *economic psychology*, which occupies the same

academic space but works in the opposite direction, applying the findings and the typically more rationalist methodologies of economics to questions and settings that have traditionally been the concern of psychologists. The related field of *neuroeconomics* also occupies the same academic space but applies the more technological methods of neuroscience – the biological study of the human brain and nervous system – to questions and settings that have traditionally been in the remit of economics (Camerer *et al.* 2005).

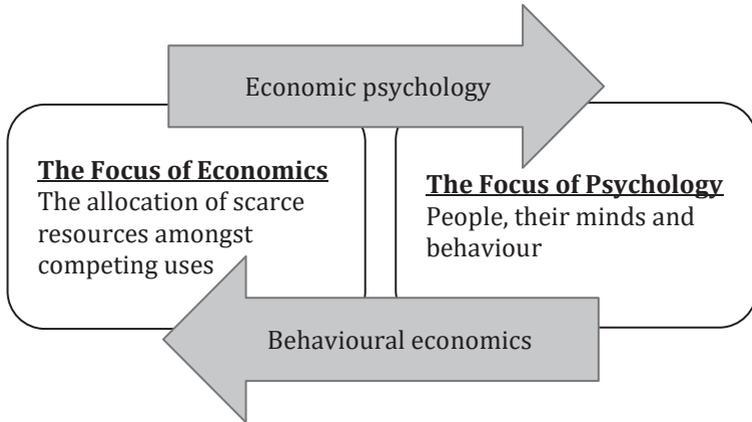


Figure 1.3 Behavioural economics and economic psychology

Methodology

Behavioural economists are primarily concerned with the collection of data through observations of our actual behaviour. There are two distinct approaches to this: *experimentation*, in which researchers collect primary data through the study of our behaviour in controlled situations, and *empirical study*, in which they take advantage of existing, often large-scale, datasets from real life situations (see Figure 1.4).

Regarding the first of these, there are four discernable types of experiments employed by behavioural economists:⁴

1. *Conventional laboratory experiments*. These consist of carefully designed artificial settings, in which the behaviour of participants (typically university students) is tightly controlled so the key effects

are easily observed. An example of this approach is the work on the *excessive choice effect*: the observation that we can be overwhelmed when faced with a large number of options and so prefer situations in which options are restricted (see Chapter 4). In the first of four experiments in one study, 48 undergraduates were asked to decide, in advance, whether they would like to choose a free soft drink from a set of six options or from a set of 24 options. 42 per cent of the participants opted for the smaller choice set: a simple experiment leading to a somewhat surprising and counter-intuitive result (Arunachalam *et al.* 2009).

2. *Artefactual field experiments*. These also consist of carefully designed and controlled artificial settings, but are conducted on non-student subjects. An investigation into how the productivity of children is affected by them first having to resist temptation is an example of such an experiment. Over 100 children of different ages at a summer camp in Padua were divided into two, roughly age-balanced, groups. Those in the temptation group were seated near a table on which there was a range of enjoyable snacks and drinks. These children were told they would soon play a game in which they could win tokens that could be traded for the treats and so they should not consume any in the meantime. The children in the control group were similarly told about the game but were not seated in close proximity to any temptation. After ten minutes, during which the two groups of children were left without any adult supervision and so during which those in the temptation group could easily sneak a treat or two, the children completed a simple origami-style task, having a further ten minutes to earn tokens for treats by folding as many sheets as possible in a stipulated manner. Children under nine years of age were found to be 21 per cent less productive when they had been subject to temptation, whereas exposure to temptation did not significantly affect those nine years or older (Buccioli *et al.* 2011). Age is clearly an important determinant of the effect of us having to resist temptation on our cognitive abilities in subsequent contexts.
3. *Framed field experiments*. These are conducted on non-student subjects but within more naturally occurring settings, either in terms of the goods, tasks or amounts of information involved. An example of such an experiment is a recent study into the effects on aid

distribution and cooperation of there being a group representative among the recipients. The researchers studied the behaviour of over 120 inhabitants of six rural villages in Nicaragua, where substantial amounts of aid had been distributed through participatory projects in the preceding years. Their experiment involved groups of eight participants each interacting over ten rounds. Each round consisted of two stages. In stage one, each participant in a group simultaneously and privately decided how much of his or her aid endowment to contribute to the group, knowing the group's collective cooperation determined the aid it attracted: greater cooperation meaning greater aid. In the second stage, the aid the group attracted was distributed among the group members. In the first five rounds, each member received the same share of the attracted aid. In the final five rounds, the participant who made the greatest contribution to the group's collective resources decided the distribution, becoming the group's representative. The results show the average contributions declined during the first five rounds but then increased during the final five: participants free-rode when the aid was equally distributed, deterring everyone from contributing; whereas when a representative distributed the aid, either the fear of punishment or the competition to become the representative drove participants to increase their contributions (D'Exelle & van der Berg 2014).

4. *Natural field experiments.* These consist of non-student subjects making very normal decisions in entirely natural situations and being completely unaware of being in a study. An example of such an experiment is an investigation into how charitable donations are affected by the advertised amount of money that has already been acquired for the cause and by the inclusion of a refund clause. The experimenters solicited donors in precisely the manner used by real charities, focusing on donors who had all recently given money to charitable causes, and invited them to make contributions to the \$3,000 required for a university's environmental policy centre to purchase a much-needed computer. The study demonstrated that increasing the advertised amount already acquired from \$300 to \$2,010 led to a six-fold increase in donations, whilst including the refund rule – all contributions being returned if the \$3,000 was not achieved – increased contributions by 20 per cent (List & Lucking-Reiley 2002).

The empirical study approach, on the other hand, involves the statistical analysis of data regarding real life behaviour in order to identify significant relationships between the decisions made in a given situation and possible explanatory variables. The household data from the German Socio-Economic Panel (GSOEP) has been analysed, for example, in an investigation of the relationship between workers' feelings of unfairness about the tax system and their rates of absenteeism from work. Respondents to the 2005 GSOEP questionnaire were asked how they perceived the tax burden of managers at the upper end of the income distribution. Excluding those who responded with "don't know", there were 4,565 respondents, of whom 72 per cent thought managers were taxed too lightly. Those who felt this way took an average of 8.78 days off work compared to the average of 5.87 days taken by those who felt managers were appropriately or excessively taxed. Once other possible explanatory factors are taken into account and controlled for, the analysis shows that a belief that the tax system is unfair – treating the highest earners too leniently – leads to a 20 per cent higher rate of absenteeism from work (Cornelissen *et al.* 2013). Perceptions about fairness lead to significant behavioural effects (see Chapter 5).

The objective of behavioural economists is to generate theories about our behaviour: stories that explain and predict how we respond in given settings, either as individuals or as members of a group. Once relevant data has been collected – either through experimentation or the statistical analysis of existing datasets – and analysed, behavioural economists use their findings

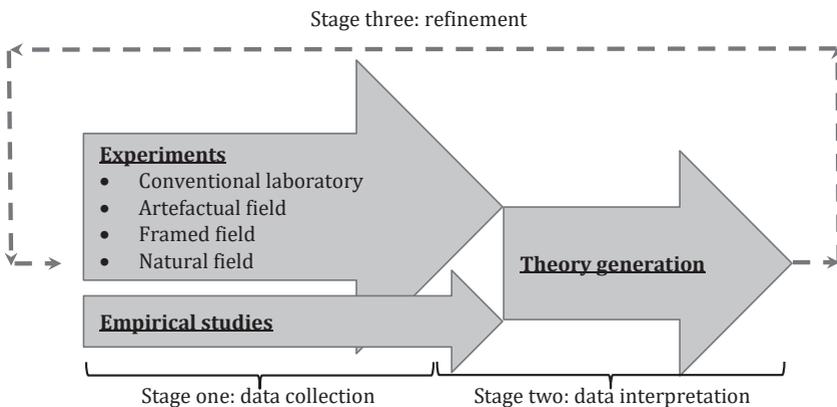


Figure 1.4 The methodology of behavioural economics

to build such theories (these are the subjects of Chapters 3–5). Once such theories are generated, they are refined through repeated testing in other settings. This is an iterative process in which understanding is developed according to Karl Popper’s theory of falsification: theories lead to hypotheses, which are then tested and either proved to be false, and so discarded, or refined.

Where we go from here

It is an exciting time to embark on the study of behavioural economics. The field is expanding rapidly, with university economics departments across the world increasingly employing behavioural specialists and offering popular undergraduate behavioural modules; with new academic journals being launched to cope with – and compete with one another in – the publication of the increasingly voluminous research output; and with it even being incorporated into secondary school curricula, most notably in the new A level (16–18) specifications in the UK. The field is also becoming increasingly influential, changing the nature of modern economics as an academic discipline but also shaping the policies of governments around the globe (see Chapter 6).

Developments in behavioural economics can be categorised into the “4Ps” (Figure 1.5), which form the structure of the remainder of this book:

- *Preferences*: the common objectives that drive our behaviour (Chapter 3).
- *Processes*: the nature and effects of the actual mental procedures we commonly employ when making decisions (Chapter 4).
- *Participation*: the two-way relationship between our behaviour as individuals and the societies in which we live, the social pressures that influence us and the influence we have on our wider social groups (Chapter 5).
- *Persuasion*: the ways in which others manipulate our behaviour, for both good and ill (Chapter 6).

First of all, though, a brief evolutionary history of the field is presented in Chapter 2. The final chapter then offers an overall assessment of the field, of its successes but also its weaknesses, and a discussion of its future.

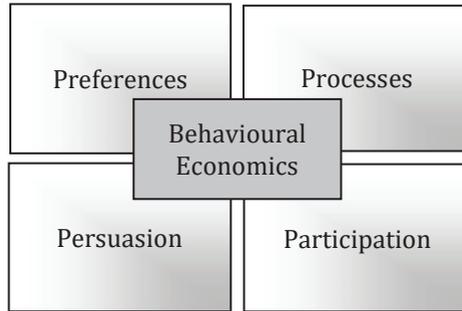


Figure 1.5 The four “Ps”

SUMMARY

- Publicly expressed dissatisfaction with the abstract and mathematical methodology of mainstream economics had been mounting for some years before the 2008 financial crash. The crash served to make this dissatisfaction impossible to ignore.
 - The rationalist/empiricist debate has always been at the heart of academic pursuit and in modern economics was fought in the eighteenth century by David Ricardo and Thomas Malthus.
 - The rationalist approach to scientific study has been the approach adopted by mainstream economics, leading to the development of the assumptions of rational decision-making.
 - Behavioural economics brings the empirical approach back to the fore in economics.
 - Four types of experiments are used in behavioural economics – conventional laboratory, artefactual field, framed field and natural field – along with empirical analysis.
 - Developments in behavioural economics can be categorised into those about our preferences, cognitive processes, participatory natures and the ways we can be persuaded.
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Notes

1. These examples are explored in Chapters 5 and 3, respectively.
2. See “A Brief History of the Post-Autistic Economics Movement”: <http://www.paecon.net/HistoryPAE.htm> (accessed April 2017).

3. For views of the walkout, see *The Harvard Crimson*, 2 November 2011, “Students walk out of Ec 10 in solidarity with Occupy”: <http://www.thecrimson.com/article/2011/11/2/mankiw-walkout-economics-10/> and also *The New York Times* blog of Gregory Mankiw, “Know what you’re protesting”, http://www.nytimes.com/2011/12/04/business/know-what-youre-protesting-economic-view.html?_r=0 (accessed April 2017).
4. The taxonomy here is taken from Harrison & List (2004). They also suggest three additional types of experiment: *social* (involving the intentional manipulation of government policy), *natural* (the study of uncontrolled, naturally-occurring events) and *thought* (the use of problems to be mentally solved). Rubinstein (2007) also proposes *online* experiments, which involve the observation of participants’ decisions as they respond to controlled scenarios uploaded to the Internet. For further discussion about the experimental methods used in behavioural economics, also see Charness *et al.* (2013).