PART I

Introduction, theory and method

1 Introduction

ALAN LEWIS

I was very pleased to be asked to edit this volume for Cambridge University Press, not least because I have been in the economic psychology business for over twenty-five years. A quarter-century of publication of the *Journal of Economic Psychology* was notched up in 2005 (Kirchler and Holzl, 2006). It is a good time to take stock as well as look to the future.

Psychology has become one of the most popular degree subjects in industrialized countries and is continuing to spread its net. Pure and applied forms have become blurred as the relevance of the subject both theoretically and in everyday life has become apparent. With these developments, it was only a matter of time before psychologists turned their attention to economic behaviour.

Psychology has been described as a synthetic science and economics as analytic: psychology has aped the empirical approaches of the natural sciences while economics has much more in common with mathematics. The synthetic route requires observation of economic behaviour, the testing of hypotheses and the construction of generalizations based on those observations. Psychology's quest to understand mind and behaviour is now directed in this context to building an appreciation of the economic mind and economic behaviour.

The contributors to this volume reflect the breadth and depth of this undertaking, covering aspects of theory and method, consumer behaviour, the environment and, finally, biological perspectives. The contributors are distinguished scholars from the USA, France, Sweden, Norway, the UK, Austria, the Netherlands, Australia, New Zealand, Switzerland, Germany and Canada. The majority of authors have first degrees in psychology or economics but there are also contributors with backgrounds in finance, management science and mathematics: all, in their various ways, are committed to the study of psychology *and* economics.

The title *The Cambridge Handbook of Psychology and Economic Behaviour* was chosen with care. The title is an inclusive one where essays employ a range of methods: laboratory experiments, field experiments, questionnaire studies, observations, interviews; the list is a long one. In short, both qualitative and quantitative methods are deemed acceptable and no one single area of psychology is given precedence. This broader remit is in contrast to handbooks in behavioural economics (Camerer, Loewenstein and Rabin, 2004) and experimental economics (Kagel and Roth, 1995). Behavioural economics has been heavily influenced by a single area, namely cognitive psychology, and the

work of Daniel Kahneman and Amos Tversky among others. The award of the 2002 Nobel Prize in economics to the psychologist Daniel Kahneman (in the same year that the work of Vernon Smith on experimental economics was honoured) gave the field considerable legitimacy within the economics profession. Behavioural economics is almost entirely driven by an economics-led research programme, with some convenient findings from cognitive psychology tagged on: for example, Prospect Theory. Experimental economics employs even less psychology, except in the sense of using the experimental method, which has a long tradition in psychology, to explore economic behaviour. Both behavioural economics and experimental economics maintain as a central theme the model of rational economic man: for the majority of behavioural economists heuristic decision making is viewed as encompassing interesting and consistent exceptions to rationality; while in experimental economics 'subjects' almost always make repeated decisions in experimental settings where real money can be lost or won as a result. The introductory chapter of the *Handbook of Experimental Economics* (Roth, 1995) records that one of the pioneering experiments was conducted by the psychologist L. L. Thurstone but from then on psychology barely gets a mention.[1]

The developments in behavioural economics and experimental economics are both to be welcomed: the current *Handbook* is accessible to psychologists as well as economists, providing economists can continue this trend of expanding their economic imagination.

In the chapter that immediately follows, 'Theory and method in economics and psychology', Denis Hilton is in an optimistic mood, believing that economists are indeed becoming more interested in human thought and behaviour. There are still, however, serious methodological misunderstandings between the two disciplines which are traced in a historical analysis. Economics is depicted as being driven by prediction rather than explanation, and as having a view of the person as a learning organism swayed by reinforcement in the behaviourist tradition; that rational economic man may share some of the characteristics of a laboratory white rat. The main thrust of the chapter is that the current enthusiasm among some contemporary economists for 'objective' evidence of economic rationality in brain functioning (neuroeconomics) is a kind of reductionism which side-steps the psychological level of analysis: we need to illuminate the 'black box' between economic antecedents (stimuli) and economic responses. For Hilton, not all the intellectual traffic is one way, that

[1] I overstate the case. Roth (1995) says 'a question we frequently hear from some of our psychologist colleagues, and one we can reasonably ask ourselves, is "what accounts for economists' reluctance to abandon the rationality model, despite considerable contradictory evidence?"' (p. 76). Roth argues that approximations of human behaviour can live with counter-examples, even if there are a lot of them. The gap between the two disciplines may not be as wide as it first appears, as psychologists do not object to a broader interpretation of rationality: psychologists certainly do not see their subject as the study of irrationality. Roth finishes on a positive note, writing that experimental economics should 'avoid establishing rigid orthodoxies on questions of methodology' (p. 86).

is from psychology to economics, and he concludes that there are instances when a psychologist should be more like an economist.

The chapters in part II are all concerned with finance. In the first chapter, 'The economic psychology of the stock market' by Karl-Erik Wärneryd, the author draws on evidence from cognitive psychology and the study of the emotions to develop a model of expectation formation. The chapter makes it clear that not all investors are the same and that financial experts are in some cases as flawed as the rest of us. Next, De Bondt, in a comprehensive essay, 'Stock prices: insights from behavioral finance', shows how investor psychology can influence the dynamics of world equity markets. This author believes that behavioural finance can provide the groundwork for an alternative theory to the theory of rational and efficient markets. Webley and Nyhus in their contribution, 'Inter-temporal choice and self-control: saving and borrowing', empirically examine how people make choices over time. There appear to be many exceptions to the standard economic model of inter-temporal choice: for example, many people, even intelligent ones, are myopic and want good things now, not later. The merits of experimental studies of inter-temporal choice have already been appreciated by some influential economists; the authors argue that questionnaire studies of saving and borrowing behaviour and insights from social as well as cognitive psychology deserve attention.

In economics, choices are modelled as being made by individuals with little or no reference to the social context in which those choices are made.[2] Some cognitive psychologists take a similar view. Social psychologists see things rather differently, attesting that most (and perhaps all) choices are dependent on the social milieu. In Burgoyne and Kirchler's chapter, 'Financial decisions in the household', the social nature of choice and decision making is the central frame of reference not only where choices are made with respect to another person but also where choices are negotiated and in some cases disputed within the confines of close relationships and partnerships.

In the last chapter of part II, Danyelle Guyatt's 'Corporate social responsibility: the case of long-term and responsible investment', the social nature of economic choice is broadened further to take into account the welfare of society as a whole. Is the sole responsibility of business to make as much money as possible for stockholders, or are there wider concerns dependent in part on the values, preferences and moral commitments of participants? This contribution examines the choices that institutional investors face and how they might change in the future.

Part III on consumer behaviour in the private sector starts with two chapters which are closely related. In the first, 'Consumption and identity', Belk asks us to consider whether 'who we are' is becoming increasingly dependent

[2] In contrast, work in behavioural economics has consistently shown that in social dilemma games people gain non-pecuniary benefit from mutual cooperation and will punish unfair behaviour, i.e. social preferences frequently predominate (Fehr and Fischbacher, 2003).

on what we consume and display, creating a superficiality at the expense of a deeper appreciation of life and spirituality. In the second, the myth of a simple relationship between wealth and happiness is debunked by Ahuvia in his comprehensive review 'Wealth, consumption and happiness'. The chapter concludes that perhaps a culture less obsessed with economic growth could be a happier one.

Antonides' 'Comparing models of consumer behaviour' announces a change of key. In this contribution, the author dispassionately assesses the strengths and weaknesses of intuitive, heuristic and emotion-based models compared to rule-based, systematic and analytic models variously constructed by marketing experts, consumer psychologists and economists. He concludes that economic models do not do justice to the complexity of contemporary consumer environments.

The chapters in part IV are dedicated to the study of consumer behaviour in the public sector. In the introductory essay by Kemp, 'Lay perceptions of government economic activity', the author opines that psychology can help us unravel whether public policy really improves well-being and whether governments provide services that citizens want. In a more ambitious essay by Cullis and Jones, 'How big should government be?', *Homo economicus* is compared to their concept of *Homo realitus*. Both are seen as having implications for government 'intervention' in markets: if the assumptions underlying *Homo economicus* reign then there is little need for consumer protection or corrections for market failure; *Homo realitus* on the other hand needs the government to take on the role of 'corrective government'. The part ends with an extensive review of the empirical literature on the tax gap by Braithwaite and Wenzel, 'Integrating explanations of tax evasion and avoidance'. The question is posed, 'if the deterrence models favoured by economists are accurate, why is there so much voluntary compliance?' The authors develop a consumer–citizen perspective where individuals not only weigh up the costs and benefits of compliance in a narrow sense but also assess the benefits, justice and fairness of fiscal policy both for themselves and for society as a whole.

Part V comprises five chapters devoted to environmental issues, with the first being Jackson's contribution on 'Sustainable consumption and lifestyle change'. The themes of consumer behaviour and the role of government are revisited as the author feels we are entering a new era: an era where policy makers will attempt to influence our everyday consumption, threatening 'freedom of choice'. The chapter underlines how sustainable consumption has deep-seated psychological dimensions, making the passage of lifestyle change a rough one. The following chapter focuses this discussion on household consumption in Stern's 'Environmentally significant behavior in the home'. This essay is centred on 'private sphere' behaviour conducted largely behind closed doors. Stern believes there are blind spots in the approaches taken by psychologists and economists in this field and that interdisciplinary work must be the priority for the future.

The motor car is very important to us and not just in an instrumental sense, as Gärling and Loukopoulos point out in their chapter on 'Economic and psychological determinants of car ownership and use'. The chapter assesses which policy interventions are likely to work. Continuing this theme of environmental policy making, Frey and Stutzer's chapter, 'Environmental morale and motivation', makes the important point that heavy-handed intervention can result in a reduction in the implicit motivation and goodwill of citizens. Environmental morale and motivation must be sustained if cooperation problems in this realm are to be overcome.

The last chapter in part V is Spash's 'Contingent valuation as a research method: environmental values and human behaviour'. The author shows that the contingent valuation method is a flawed one, that the search for the holy grail of a perfect survey instrument is pointless, but that insights from psychology can help in the interpretation of results where behavioural motives are taken into account.

The final part (part VI) comprises biological perspectives. Psychology as a discipline is hard to define, yet many are relatively happy with a description of psychology as the study of 'mind, brain and behaviour'. Psychologists have been involved in, among other things, locating the seats of emotion in the brain, the interpretation of language and the production of speech and the varying functions of the two hemispheres. In recent years economists and psychologists have become interested in which parts of the brain are responsible for economic decision making, and comprehensive reviews of neuroeconomics already exist (Camerer, Loewenstein and Prelec, 2005). The chapter by Lohrenz and Montague, 'Neuroeconomics: what neuroscience can learn from economics', achieves something different, as it assumes that evolutionary efficiency is an inherently economic mechanism and is built into the brain. These building blocks are examined using functional magnetic resonating imaging (fMRI), paying special attention to the processing of rewards and social exchange.

The evolutionary theme is also pursued in the penultimate chapter, 'Evolutionary economics and psychology', where Witt explores, in particular, the influence of innate learning mechanisms on behavioural adaptations during the course of economic transformations. While Witt is concerned with economic transformations in recorded history, the final chapter, 'Evolutionary psychology and economic psychology', goes back much further, as for Lea our economic minds to some extent reflect Stone Age selection pressures. In this context, fast and frugal heuristics, for example, can be viewed as an adaptive toolbox rather than as exceptions to rationality and, perhaps controversially, much of our economic behaviour relies on processes that we share with other animals.

I commend this collection to you and take the opportunity to thank all of the contributors for their efforts in improving communications between the two disciplines of psychology and economics.

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2 Theory and method in economics and psychology

DENIS HILTON

2.1 Introduction

Economics is increasingly looking to psychology and neuroscience in order to revise its assumptions about how people process information and make choices. New subdisciplines of economics have sprung up, such as behavioural economics, psychological economics, cognitive economics and neuroeconomics, which draw extensively on findings in psychology and neuroscience. In addition, the new field of experimental economics enables economists to test theories about human choice behaviour directly in controlled conditions. Economists are increasingly abandoning the assumption that people are fully rational in their choices, and are becoming increasingly interested in constructing models which incorporate realistic assumptions about human thought and behaviour.

This chapter will take a psychologist's point of view on these developments. Despite the fact that economists and psychologists are often addressing the same fundamental question – why humans make the choices they do – there is often puzzlement about the other side's theory and methodology. These kinds of misunderstanding may reflect lack of knowledge not only of the background and aims of the other's discipline, but also of the historical context of the social sciences.

I will try to explain the aims and methods of economics in a way that will make their theoretical orientations seem more understandable to psychologists. I will first try to chart the various ways that economists are seeking to use psychology in their work. I will then suggest that economics – even of the new psychological kind – is still strongly rooted in a metatheoretical perspective that many psychologists would recognize as behaviourist. I will accordingly

I would like to acknowledge the unstinting hospitality of the economics department at the University of Toulouse, which has given me remarkable opportunities to talk with economists, and to listen to them discussing their work amongst themselves. This was greatly facilitated by a research fellowship from the French CNRS between 2001 and 2003. In particular I would like to thank Laure Cabantous, Bruno Frey, Rom Harré, Robin Hogarth, John McClure, Steven Sloman and Bernard Walliser for helpful comments on previous drafts, and Bruno Biais, Guido Friebel, Bruno Jullien, Sébastien Pouget, Paul Seabright, Marcela Tarazona and Jean Tirole for many helpful and instructive discussions concerning economics and psychology.

address two major questions about theoretical frameworks and scientific explanation. The first is to do with the issue of levels of explanation, and whether and how psychological-level explanations can inform economic questions, and in turn whether and how neuroscience can inform economics. The second is to do with depth of explanation, which contrasts psychology's more realist approach to constructing and testing socio-cognitive theories in scientific explanations of behaviour to the more instrumental perspective of economics. I argue that this realist approach can lead not only to improved explanation of the facts, but to greater opportunities for modification of economic behaviour at both the individual and societal level.

This chapter therefore pays attention to differences in how theories are constructed and evaluated in the two disciplines. In my view, this perspective can shed light on the recent debate about methods in economics and psychology, which has focused on experimentation (e.g. Croson, 2005; Hertwig and Ortmann, 2001, 2003; Sugden, 2005b). I will suggest, for example, that much of the heat in this debate has been generated by differences in theoretical orientations (cognitivist and realist in the case of psychology, behaviourist and instrumentalist in the case of economics). While written from a psychologist's point of view, this chapter may still be useful to economists. Through throwing a different light on their assumptions and practices, it may help economists to reflect on their own professional identity and epistemological approach, in much the same way that spending a period abroad teaches us about our own national identities, through observing what raises foreigners' eyebrows.

2.2 Rational behaviourism in economics

At the beginning of the twentieth century economics and psychology (like philosophy and linguistics) were confronted with the success of the natural sciences. Both attempted to adopt the methods of the natural sciences through taking behaviourist approaches (measuring observables, such as behaviours rather than thoughts and feelings, in psychology, prices and market share rather than experienced value, etc., in economics). While psychology primarily adopted the experimental methods of the natural sciences, economists retained the eighteenth-century model of *Homo economicus* as motivated by rational self-interest, but adopted mathematical formalisms to render their theories more precise and 'scientific'. In addition, they adopted the revealed preference axiom which assumes that preferences will be revealed in objectively measurable phenomena such as prices and market share (Lewin, 1996).

Below I identify some behaviourist characteristics of economics. This can be done by measuring economics up against Lyons' (1977) checklist for

identifying behaviourist theories, namely: a rejection of internal states of the organism as scientific explanations of behaviour; a tendency to see no essential difference between the behaviour of humans and other animals; an emphasis on the importance of learning and reinforcement (positive and negative) in explaining behaviour; and a penchant for instrumentalist (i.e. predictive) rather than realist (i.e. explanatory) theories of behaviour.

2.2.1 Rational behaviourism

The 'revealed preference' assumption embodies what might be called a 'rational behaviourist' approach, as it combines the rational self-interest model of choice with a behaviourist approach to measurement. To know an agent's preferences, one does not have to ask her; one simply observes what choices she makes. In addition, there are some important symmetries between economists' models of the rational calculation of self-interest and psychologists' models of how stimulus–response (S–R) associations are formed: both assume that with experience, the organism (or agent) will learn the costs and benefits associated with actions that it (she) takes. Both approaches emphasize the importance of learning and incentives for understanding behaviour.

The rational self-interest model effectively makes the same predictions as Thorndike's (1911) Law of Effect that links reward to response – any response that leads to a reward is likely to be repeated. In the language of 'rational behaviourism' this can be expressed as the price effect in economics – an activity can be encouraged by raising the price. Neoclassical economics – like behaviourist psychology – assumes that human behaviour will be explained by situational costs and benefits (gain–loss matrices, reward–punishment schedules). Economics assumed that no curiosity need be expressed about the intervening cognitive processes that led from stimulus to response (it was assumed that gain–loss matrices would be calculated correctly by rational choice processes), while radical behaviourism in psychology argued that no attention should be paid to intervening cognitive processes, as they were unobservable.

Although it may seem paradoxical that the economists' model of *Homo economicus* drawn from the eighteenth-century Enlightenment should yield essentially the same method of analysing behaviour as the early twentieth-century psychologists' model of *Rattus norvegicus*, that is indeed what happened. Values and preferences of decision-makers are to be inferred from observing them make choices under varying conditions. Economists, like behaviourist psychologists, abhorred finding out people's values and preferences just by asking them disinterested questions. Indeed, a striking illustration of the convergence of economics and behaviourism comes from the use of revealed preference theory to infer demand curves for animal preferences (Kagel *et al.*, 1981).