

## 4 From imperialism to inspiration: a survey of economics and psychology

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### Introduction

Modern economics and psychology are both sciences of human behaviour. Although they have a common theme, their relationship still swings between pure co-existence and selective interaction. Starting from the analysis of human behaviour on markets, modern economics has developed a behavioural model which disregards psychological factors almost completely. The 'homo oeconomicus' takes decisions in a rational and emotionless manner. He or she compares the expected costs and utilities of the different alternatives at hand, and finally selects the one that benefits him or her the most. Decisions are assumed to have a high degree of rationality (cognitive limitations resulting in systematically suboptimal decisions are disregarded); they are based on unlimited willpower (self-control problems and emotions do not play a role); and actions are solely guided by self-interest (the homo oeconomicus does not have pro-social preferences, i.e. the utility of other individuals does not enter into his decision calculus). Homo oeconomicus, however, reacts to changes in his possibility space in a systematic and therefore predictable way: when the relative price (or the opportunity cost) of a good or an activity increases, the demand for the respective good will fall, and the respective activity will be carried out less ('law of demand'). This economic approach to human behaviour has been successfully applied to areas outside of the economy. Often termed 'economic imperialism', the economic approach has produced fruitful insights in such areas as politics ('Public Choice'), law ('Law and Economics'), history ('New Economic History'), the arts ('Cultural Economics'), or family ('Economics of the Family').

Economics has not always been so distant from psychology, however, as the concept of the homo oeconomicus suggests. In the beginnings of economics, economists like Smith, Bentham, Edgeworth, Marshall and many others were aware of, and even analysed, the psychological foundations of preferences and beliefs, and acknowledged them as important determinants of human behaviour. Psychological considerations in economics were lost when neoclassical economics started its triumphant progress within the field of economics throughout the twentieth century. In the second section of this chapter, we

briefly describe this historical process. Then we give a detailed account of the concept of homo oeconomicus, show the strengths of this approach in explaining (market) behaviour, and argue that the approach offers important insights for psychology and other social sciences.

In the decades since 1980, the neoclassical assumptions underlying the concept of homo oeconomicus have been increasingly criticised. In many cases, empirical studies have produced results conflicting with economic predictions. This has led to the development of a 'Behavioural Economics', which has successfully adapted the economic approach by incorporating psychological aspects into the model of human behaviour. At the same time, the usefulness of the traditional economic model for understanding the workings of the economy has been reconsidered, and its implications for practical economic policy have been revised. We demonstrate this new relationship between psychology and economics for three major areas. Section three is concerned with the limitations of the traditional economic approach resulting from the *bounded rationality* of individuals. Numerous *anomalies* have been identified, indicating that behaviour can systematically deviate from a fully rational model of decision making. We discuss the often divergent ways by which these anomalies have been incorporated into economic theory. Section four deals with the limitations of the economic approach resulting from *bounded self-interest*. Individuals have been found to behave in a non-selfish way in many situations, which has implications for economic theory in three respects. First, experimental economics has shown that pro-social preferences play a major role in human behaviour: individuals often follow *social norms*, like fairness or reciprocity. Second, the economic approach does not take sufficiently into account that individuals do many things out of *intrinsic motivation*, or because it corresponds to their self-image (*identity*). Third, non-selfish behaviour is crucial when *market failure* occurs and certain public goods are not, or only insufficiently, produced. Many areas of public and economic life are characterised by social dilemma situations, and non-selfish behaviour is a necessary precondition to overcome them (given that they cannot be regulated by the state). Section five treats the limitations of the economic approach resulting from its *bounded utility concept*. Neoclassical economics has constructed a utility concept completely deprived of any hedonic content. Utility can only be observed and assessed indirectly by looking at the revealed behaviour of individuals. In contrast, psychology treats utility as directly observable: utility can be assessed using measures of reported subjective well-being (or *happiness*), which are regularly assessed in surveys. By using happiness as an alternative measure of welfare, and studying its economic and institutional determinants, new insights about the impact of economic and political choices on human welfare can be gained.

### Imperialistic economics drives out psychology

Economics is considered to be 'the Queen of the Social Sciences' by its proponents and to be 'an Imperialistic Science' by its critics. Both characterisations of economics are due to the development toward a fully rational model of economic decision-making, which represents the core of the generally accepted and rigorous neoclassical economics. The analytical strengths of the neoclassical assumptions have made it possible to apply the economic approach not only to questions traditionally within the scope of economics (market behaviour), but also to many non-market situations traditionally studied in psychology. Both aspects of this imperialistic programme are illustrated in this section. After an outline of the historical development of economic theory, the economic approach to human behaviour is presented in detail. We discuss its strengths and successes, and its importance for psychology and other social sciences.

#### *The loss of psychology in economics*

Within today's mainstream economics, the relationship between economics and psychology can best be described as imperialistic on the part of economics. In the course of developing neoclassical economic theory, the psychological content (which still existed in the work of economic precursors) was totally squeezed out. Many classical economists (those living in the eighteenth and nineteenth centuries) carefully considered psychological reasoning when debating preferences and beliefs. Developments in economic science after 1930 have led to a loss of psychological content (Lewin 1996). This can best be shown with the concept of utility. Using the concept of utility as an illustration is also useful because the assumption that individuals maximise expected utility is at the core of neoclassical theory.

The Utilitarians, such as Bentham (1789 [1948]), had very broad views on utility and were convinced that utility could be measured. Their extensive reflections on human utility started from the view that human experiences had a hedonic quality. Bentham, for example, distinguished no less than fourteen different components of utility. His 'pleasures' and 'pains' contained many hedonic experiences resulting from tangible, but also intangible goods, such as 'pleasure of sense, wealth, skill, amity, a good name, power, piety, benevolence, malevolence, memory, imagination, expectation, relief and the pleasures dependent on association' (Bentham 1789 [1996], S. 34–35). Edgeworth (1881) even wanted to measure utility using a 'hedonometer', assuming that utility had a cardinal quality.

The 1930s witnessed a revolutionary change in the concept of utility. Robbins (1932) questioned the existence of a cardinally measurable utility function based on subjective experiences, and therewith declared a direct assessment of utility to be impossible. An ordinal concept of utility gained ground. It requires that utility only be indirectly inferred from actual choices made. Utility is

only reflected in the 'revealed behaviour' of individuals. One can also speak of 'decision utility' in the sense of an ordinal preference index indicating whether good A is preferred over good B, whether the opposite holds, or whether individuals are indifferent. Utility thus just becomes a number without any further substantive meaning whatsoever, and it only serves to explain the choices made by individuals between various goods. After World War II, these views have become enshrined in myriads of theoretical treatises and textbooks as the mainstream 'New Welfare Economics'. The switch from the idea of measurable cardinal utility to a preference index of ordinal utility – graphically represented by the consumer indifference curves – was successful in economics for two good reasons. First, states of minds, such as how much satisfaction or pleasure a good yields, are indeed inherently difficult to measure. Economists endeavouring a scientific approach to their discipline are therefore still deeply sceptical about being able to measure utility. Second, cardinal utility is not necessary for economic theory. As Hicks (1934) and Allen (1934) have shown, demand theory can be entirely grounded in ordinal utility in the form of a preference index. Samuelson (1938) then formulated the general behavioural foundations of the still widely accepted standard theory. It attributes utility solely to actual choices. Revealed behaviour is the only way to find out about individuals' utility. This also means that no empirical knowledge of persons' emotional states or opinions about their utility is needed to explain the choices individuals make between goods in markets.

For utility to be properly reflected in actual choices, individuals have to meet some important requirements when making their decisions: they have to be well (or even perfectly) informed about the alternatives; they have to build correct expectations about the consequences of their choices; and they have to pursue their wishes – and only their own wishes – in a logically consistent way. These assumptions are at the core of neoclassical economics and reflected in other theoretical cornerstones of economics: the theory of expected utility maximisation (based on the von Neumann/Morgenstern axioms, see, for example, Schoemaker 1982; Machina 1987), the theory of rational expectations (Muth 1961; Lucas and Prescott 1971), and game theory (e.g. Gibbons 1992). These theories have been cleared of any psychological content in a similar way to that illustrated for the concept of utility. The 'homo oeconomicus', which is at the centre of the next subsection, is built around these behavioural assumptions of rational and selfish behaviour.

#### *The economic approach to human behaviour (homo oeconomicus)*

The homo oeconomicus stands for a behavioural model which is grounded in the analysis of human behaviour on markets. Understood as a general social science paradigm, however, it is in principle applicable to all areas of human

behaviour (see Becker 1976, 1996; Becker and Murphy 2000; Frey 1999). Human action can be analysed with the help of five principles.

*Individuals act* What happens on the social level is explained by the behaviour of persons (methodological individualism). This does not mean at all that human beings are considered isolated; rather, their behaviour can only be understood as the result of interactions with their surroundings, other people and institutions.

This approach differs fundamentally from theories in which collectivities act on their own, as is assumed, for example, in the organic conception of the state. No further distinctions are made below the level of the individual. This distinguishes the economic approach from several variants of psychology where split personalities are studied, and also from sociobiology where there genes are a level below the individual person.

To take the individualistic stand also means that a person's evaluations and normative views are accepted. Statements such as 'something is socially desirable' are taken to be meaningless because 'society' is not a behavioural unit which could proffer an evaluation. What counts is how people in society evaluate the various possibilities open to them.

*Incentives determine behaviour* People do not act randomly but react systematically and predictably to incentives. Incentives signal which possibilities for action are more advantageous or more disadvantageous. Individuals compare the advantages and disadvantages of the actions available to them in an implicit and sometimes explicit way. They thereby also form expectations about the future. Homo economicus needs not to be fully informed, but he will seek and find solutions, learn and invent, and extend his limited knowledge if found worthwhile.

*Incentives are structured by preferences and constraints which are strictly distinguished* Changes in human behaviour are attributed (as far as possible) to observable and measurable changes of the opportunity set determined by the constraints. The most important constraints individuals face are: (1) disposable income (including wealth and the possibility of getting credit); (2) the relative prices for goods and services (in case goods are traded on markets), or in a more general sense, the implicit prices of the different choice alternatives (opportunity costs); and (3) the time required for consuming and acting. The first two conditions define a person's disposable real income, which is important for economic analysis. The more general point is, however, that people's possibilities for action are always constrained, and therefore there is a constant necessity to trade off between different alternatives. Moreover, constraints need not solely be monetary or of time, but can also consist of

physical or psychological limitations. This potentially opens the economic approach to the incorporation of psychological effects, as will be shown in sections three to five.

*Individuals pursue their own interests and generally behave in a selfish way* This assumption about preferences seems at first sight to represent a negative evaluation of man: an egoist is not likeable. This is, however, a misunderstanding. Selfish behaviour means that it cannot be assumed that every person acts magnanimously towards others – this would certainly be unrealistic. Nor does it mean that every person always endeavours to harm others. Selfish behaviour takes a middle position. Most people are neither saints nor devils. Selfish behaviour can be relied on, especially when human interaction takes place on anonymous markets. In the economic realm, it can generally be expected that people act to their own advantage. Whether this assumption also holds for situations with smaller social distance is discussed in section 4.

On the basis of these five principles of the economic model of human behaviour, it is possible to derive a central law for economics – the generalised *law of demand*. Suitably applied, it allows us to theoretically and empirically explain how people act.

The law of demand states: if the price (or cost) of a good or activity rises in comparison to other goods or activities (i.e. if the relative price rises), the particular good is demanded less and the particular activity is pursued less.

This central law is based on the principle of *marginal substitution*. A relative price rise does not provoke a total or abrupt change in behaviour but rather a more or less strong adjustment to changing scarcities. The law only applies provided other influences stay constant (this is the *ceteris paribus* assumption). The influence of other factors on demand (especially of changes in income) must be taken into account separately.

An important property of the law of demand is that the direction of the expected change in behaviour is well determined. The relatively more expensive activity is undertaken to a lesser extent, and the relatively *more expensive* good is purchased and consumed *less*, and vice versa. This property does not normally obtain for other influences on demand. In particular, no general theoretical hypotheses exist about whether higher income raises or lowers demand. The demand for larger cars may increase with rising income, the demand for ordinary foodstuffs may decrease. Theoretically, however, the direction of the influence of a higher income is uncertain; it can only be determined by empirical observation.

*The importance of the economic approach for psychology (and other social sciences)*

For psychology (and other social sciences), the significance of the economic approach to human behaviour lies mainly in its coherence and universal validity

and that this approach offers clear predictions for behaviour. Psychology, in contrast, does not have a general model of behaviour, but consists of a large number of partial theories and special effects, which are more or less isolated from each other. The differences become clear when the economic approach is compared to models of behaviour in social psychology, which are also based on the hypotheses that individuals behave in such a way as to maximise their own utility (for example, Ajzen 1988; Fishbein and Ajzen 1975). According to these latter models, social attitudes are the central determinants of behaviour. Attitudes are defined as a propensity to judge an object as positive or negative. It is taken as being self-evident that a tendency towards positive judgement is followed by corresponding behaviour; that, for example, citizens vote for politicians whom they value, and that they buy goods they think are good. Economists do not say that behaviour can be predicted on the basis of preferences, a concept that is related to attitudes in psychology. Some economists (in particular Stigler and Becker 1977) have even argued that changes in human behaviour can and should only be explained by changes in constraints. The reason is that it is difficult to empirically capture and separate changes in preferences from the change in behaviour that is to be explained. In contrast, changes in constraints are observable and mostly exogenous. In particular, changes in the prices of goods and services, which are central for economic analysis, are easy to observe and quantify. They are, moreover, independent from preference changes of single individuals, and therefore empirically distinguishable from the latter.

This methodological strategy is not confined to market behaviour. The economic approach treats 'prices' very extensively: the concept includes not only monetary prices (such as the price of goods) or monetary burdens (such as taxes), but all costs which arise when undertaking an action (opportunity costs). Changes in prices or opportunity costs can be identified also in non-market settings when constraints are broadly understood as all forms of *institutions* shaping and coordinating human behaviour (North 1990).

There are many examples of the successful application of this modern view of economics, in particular in areas of human life that are traditionally linked with psychology. Important examples are the family: marriage, children, divorce, suicide (Becker 1971, 1981), including the determinants of abortion (Medoff 1988); drug addiction (Winston 1980; Becker and Murphy 1988); religious practices (Ehrenberg 1977; Iannacone 1991, 1998); criminal behaviour (Becker 1968; Cameron 1988; Freeman 1999); and social segregation and norms (Becker and Murphy 2000). Introductory surveys to this literature are given, for example, in Becker (1976), Frey (1999) and Lazear (2000).

The economic approach is moreover important for psychology and other social sciences because it takes a completely different view of the possibilities of influencing human behaviour. The aim of scientific research should not only be to make sound positive analyses, it should also be to offer advice

on possible welfare improvements. Economics is able to derive well-defined policy implications from the general law of demand. The starting point for inducing behavioural changes are the incentives. Prices for unwanted activities should be raised in order to lower demand for such activities, and vice versa. In environmental economics, for example, it is stipulated that a price should be put on the use of the environment by introducing pollution taxes. Empirical observation shows that such policies are often effective. In contrast, psychology generally focuses on people's preferences when behaviour should be changed. Influencing people's preferences, however, is normally much more difficult than applying the price mechanism, and the direction of behavioural change often remains unpredictable. For these reasons, it is in many instances easier to achieve changes in behaviour by relying on the incentive instruments proposed by economic theory than by trying to change people's attitudes and values.

#### *The return of psychology*

The application of the economic approach to other areas of life has also made the weaknesses of homo oeconomicus more obvious. There are signs that the easy gains in insight achieved when the paradigm was applied to new areas are diminishing (Hirshleifer 1985; Frey 2001). The diminishing marginal returns of the 'imperialist programmes' of economics suggest that the time has come for a change in direction: in the future, the main emphasis should not lie in exporting economics but rather in *importing* aspects and insights from other social sciences, like psychology. What is needed is an effort to overcome the model of 'homunculus oeconomicus', who is at all times in full control of his or her emotions, who does not have any cognitive limitations, who is not embedded in a personal network, who is only extrinsically motivated and whose individual preferences are not distinguished from his or her individual happiness. There is already a considerable amount of literature pointing the way this future development may go, and there are a great number of ideas from psychology which have been fruitfully introduced into economics (for other surveys see Earl 1990; Rabin 1998; 2002 or Mullainathan and Thaler 2000). Today's behavioural economics not only builds on the work of precursors like Simon (1978), Katona (1975), Leibenstein (1976), and Scitovsky (1976), but also on German speaking economists like Schmölders (1962) and Jöhr (1972). Later, authors like Akerlof (1984), Kahneman and Tversky (1984), Frank (1985, 1988), and Thaler (1992) contributed important insights. In the next three sections, we shall discuss several areas in which social psychology has proved to enlighten economics.

#### **Limits of homo oeconomicus: bounded rationality**

Homo oeconomicus is based on the theory of expected utility maximisation, which builds on logically consistent and rational propositions on how humans

make decisions (the von Neumann/Morgenstern axioms). These propositions are generally seen as reasonable, and therefore it was taken as plausible for quite some time that individuals behave according to them. Over the last two decades, however, a large literature has accumulated that shows both experimentally and theoretically that the theory of expected utility maximisation can explain only a limited part of observed behaviour. This is so because individuals face *cognitive and emotional constraints*, which are discussed in this section three.

#### *Behavioural anomalies*

Evidence on behavioural anomalies was published early on in economics journals. The Allais paradox (1953) and the anomalies found by Ellsberg (1961) regarding individuals' treatment of small probabilities were well-known and fundamental, but were not taken seriously. It needed further experiments by psychologists (see Tversky and Kahneman 1974; Kahneman and Tversky, 1979; Kahneman et al. 1982; Arkes and Hammond 1986; Dawes 1988) and by economists (see Schoemaker 1982; Hogarth and Reder 1987; Thaler 1992) for behavioural anomalies to be recognised. These experiments revealed overwhelming evidence that humans, as well as animals (McDonald et al. 1991), do not act rationally in the sense of following the von Neumann/Morgenstern axioms. Violations of expected utility maximisation were found to be not random but systematic. Important anomalies for economics include (for more complete accounts see Starmer 2000; Rabin 1998; Frey and Eichenberger 2001): sunk costs (people tend to take forgone costs into account in their decisions, although they should only evaluate future costs and utilities); opportunity cost effect (out-of-pocket monetary costs are given greater weight in the decision calculus than opportunity costs of the same size); endowment effect (goods in a person's endowment are valued more highly than those not held in the endowment); and preference reversal (when choosing between two lotteries, individuals once choose the first and once choose the second lottery when the decision context is logically completely identical, but framed differently). Moreover, anomalies well known in social psychology like availability bias, anchoring, certainty effect, reference point effect and especially framing can be relevant for economic contexts. All these anomalies show that expected utility maximisation theory does not fully describe individual behaviour under risk and uncertainty. What the consequences are for economic theory is thus an important question.

Orthodox economists often advance the argument that anomalies might be relevant at the individual level, but that they are not important for aggregate markets. The more complete and efficient a market is, so goes the standard counter-argument, the more 'irrational' agents are driven from the market, and the less anomalies are observed. Individuals prone to anomalies lose money, which allows rational agents to take over wealth and dominate the overall market. Even if a substantial number of individuals are prone to anomalies,

market forces provide strong monetary incentives for rational decisions. For market outcomes to be efficient, moreover, it is sufficient if only some 'marginal' agents act rationally and exploit arbitrage possibilities. Empirical tests of the hypothesis that markets are efficient are therefore a crucial means for evaluating the relevance of psychological factors for economic theory. In recent years, many such studies have been conducted for *financial markets*, because they come the closest to the ideal of a perfect market. Two studies are summarised as an example (based on Mullainathan and Thaler 2000; see Shleifer 2000 for a more detailed account of this literature).

The study by De Bondt and Thaler (1985) is explicitly motivated by the psychological finding that people overreact to new information and underweight more distant information when taking decisions. Given that investors on stock markets behave accordingly, it can be expected that stocks which have performed well over a period of time will be overvalued. Individuals who overreact to good news drive the prices of these stocks too high. Similarly, stocks which had performed badly for some time should be undervalued. From this, DeBondt and Thaler derive the hypothesis that past 'winners' should have lower future returns than the average market, while past 'losers' should outperform the market. Using data from the New York Stock Exchange, they are able to corroborate this hypothesis: the 35 stocks which had performed the worst over the past five years yielded above-average returns over the next five years, while the 35 biggest winners subsequently underperformed. Thus, bounded rationality (in the sense of limited cognitive information processing abilities) plays a role in investor decisions, and the anomaly is evident even at the aggregate market level.

Odean (1998) investigates whether investors are subject to loss aversion, i.e. whether they weight losses more heavily than gains. This is the case, for example, if investors are more reluctant to realise capital losses than to realise capital gains. Odean's empirical study finds exactly this behaviour: around 15 per cent of all gains are realised by investors, but only 10 per cent of all losses. This behaviour, however, comes at an economic cost and is surprising in so far that investors face strong monetary incentives to make rational decisions.

A host of other studies have identified anomalies in financial markets. A recent overview of the by-now substantial literature is given by Shleifer (2000); see also the more popular book by Shiller (2000).

#### *Self-control problems*

Individuals are also boundedly rational because they are often not able to stick to their long-term goals, but succumb to the temptation of immediate gratification. Human beings have limited will-power. An obvious example is smokers who want to quit in the interests of better long-term health, but repeatedly fail to refrain from the immediate pleasure of smoking a cigarette. Such 'self-control problems' are also relevant for economic contexts. Banks et al. (1998), for

example, show that people's consumption expenditures fall sharply when they retire and their incomes drop. This is against their long-term preferences, because most people would like to maintain their standard of living even after retirement. But individuals simply seem unable to save enough for retirement. One reason for this is that individuals' short-term and long-term preferences often conflict with each other: saving more money would be in their long-term interests, but the 'short-term selves' of people often choose the immediate gratification of spending the money. As this behaviour violates intertemporal utility maximisation, the phenomenon is also called 'time-inconsistent preferences' or 'hyperbolic discounting' (Laibson 1997; O'Donoghue and Rabin 1999; for a critical evaluation see Frederick et al. 2002). Self-control problems have been identified for a wide range of consumer decisions (Angeletos et al. 2001; Mullainathan and Gruber 2002). However, the existence of self-control problems does not mean that the rational choice approach has to be completely relinquished. One of the defining characteristics of human beings is that they are able to recognise their weaknesses and to overcome them (at least partly). A much-discussed way to circumvent anomalies, or to reduce the cost incurred when falling prey to them, is to establish rules of self-commitment. Probably more importantly, individuals resort to social institutions in order to get help when struggling to overcome their weaknesses (Frey and Eichenberger 2001). For example, individuals who know that they are unable to resist the temptation of consuming more and faster than they wish, have an incentive to support political actions forcing them to plan more for their future, e.g., by introducing an obligatory old age pension scheme run by the state.

### Emotions

Apart from cognitive limitations, human decisions can also be constrained by emotions. This seems clear: everybody is aware of situations where strong emotions have precluded a rational decision. In recent years, the role of emotions in human decision making has been studied mainly by psychologists (for a survey see Loewenstein and Lerner 2001). The mostly experimental studies have identified numerous effects of emotions on behaviour. Nevertheless, the relevance of emotions for a general model of (market) behaviour is not very clear (Elster 1998). First, there are hardly any empirical studies which try to isolate emotional effects in economically relevant contexts. The investigations of self-control problems illustrated in the previous subsection come closest. Second, in many situations it is difficult to distinguish 'good' and 'bad' influences of emotions. The view that all emotions are irrational is not supported by current research (Loewenstein and Lerner 2001, p. 38). Whereas emotions may lead to suboptimal decisions in some situations, the absence or deliberate oppression of emotions can substantially harm the *ability* of individuals to make a decision at all (Damasio 1994). Third, further investigation is needed to establish the

extent to which emotions change market outcomes. If positive and negative emotions are distributed randomly across market participants, for example, the (potential) behavioural effects tend to average out in the aggregate.

### Limits of homo oeconomicus: bounded self-interest

The economic approach starts from the assumption that people are selfish. It has been repeatedly shown that in many situations, especially when individuals act in markets, this is a powerful approximation to actual behaviour (Smith 1962; Becker 1976). Over the last ten years, however, experimental economists and other social scientists have collected unambiguous evidence that individuals are often *boundedly selfish*. This finding is important for many economically relevant situations of exchange between individuals that do not correspond to the traditional view of a perfectly functioning market. In this section, three applications are discussed: (1) the role of pro-social preferences, like norms of fairness and reciprocity, in shaping human behaviour and market outcomes; (2) the role of intrinsic motivation and identity for economics; and (3) the role of non-selfish behaviour for overcoming social dilemmas (i.e. when markets fail).

#### *Pro-social preferences*

The assumption of rational self-interest has been tested intensively over the last few years, and the introduction of experimental techniques into economic science has played a major role in this regard. Economic experiments are different from experiments undertaken by other social scientists (like, for example, psychologists) mainly because individuals are paid to participate in the experiment. This makes it possible to derive game theoretic predictions about how a homo oeconomicus would act in a given experiment. The predictions can then be compared to actual behaviour.

A large number of experiments have now been conducted, showing that individuals often do not act like complete egoists (for surveys see Fehr und Gächter 2000; Fehr and Schmidt, 2003). The observed behaviour can only be explained by other-regarding, pro-social preferences: individuals follow social norms like fairness, reciprocity, or altruism. By fairness it is meant that people want to achieve an equitable distribution of resources between the parties involved in an exchange relationship. Reciprocity means that individuals reward kind actions of others by acting kindly as well, and punish unkind actions by responding in a hostile manner, even if this comes at a (monetary) cost. Both types of behaviour are not compatible with homo oeconomicus, as well as a third type of pro-social preference often observed which consists of unconditional, pure altruism (Andreoni 1989; Frey and Meier 2004).

The existence of pro-social preferences has hardly any consequences for aggregate outcomes on markets if exchanges are perfectly contractible. On *incomplete markets*, however, they can substantially alter market outcomes. An

impressive example is given by Bewley (1999) who conducted an extensive survey of American personnel managers during the recession of the early 1990s. Asked why firms did not cut their workers' pay (although that is what economics would expect firms to do in a recession, because of the difficult market situation, and because rising unemployment allows them to do so), personnel managers answered: pay cuts would be perceived as unfair, and workers would react negatively to them by lowering their work morale. This surprising result is based on the fact that labour contracts are incomplete: because not all aspects of a job can be contracted upon *ex ante*, workers are given some discretion. Obviously, when workers decide to use their discretion in the interests of the firm (high work morale) or not (low work morale), preferences for fairness seem to play a major role. High work morale can thus be maintained by not cutting pay. But these fairness considerations also come at an economic cost. Because they lead to downward wage rigidities (which have been observed for many industrialized countries), workers are laid off rather than average wages of the workforce lowered. This causes higher unemployment than would be observed on a perfectly functioning labour market. Pro-social preferences are also of some importance for consumer decisions. As has been shown in surveys for the US (Kahneman et al. 1986) and for Europe (Frey 1999, Chapter 10), consumers judge the prices set by companies mainly by their fairness.

#### *Intrinsic motivation and identity*

Economic analysis is based on the idea that individuals respond systematically to changes in relative prices. *Incentives* set from outside motivate people to act in a predictable way. This view disregards that there are other motivating forces, like intrinsic motivation or individuals' self-image (identity). They can systematically affect market outcomes or the effectiveness of incentive instruments, as will be shown in this subsection.

Psychologists generally distinguish between two kinds of motivation: *extrinsic* motivation, induced by manipulations of rewards or sanctions from the outside (the economist's relative prices), and *intrinsic* motivation, where people perform an activity for its own sake or because of reasons lying within their own person (DeCharms 1968; Deci 1971). Intrinsically motivated behaviour is relevant in many areas of economic and political life; examples are work morale, voluntary compliance with social norms, civic virtue, or tax morale. For economic theory, intrinsic motivation is of special importance because it cannot be simply treated as a constant. There is a systematic dynamic interaction between extrinsic and intrinsic motivation. Experimental research in psychology has shown that, under identifiable conditions, external interventions affect people's sense of self-determination, self-perception and their feeling of justice, which in turn influences intrinsic motivation (e.g. Deci and Ryan 1985). Among psychologists, much attention has been paid to the 'hidden costs of reward' (see Lepper and

Greene 1978), stating that introducing a reward into a situation where people already have a high interest in an activity results in a decrease in their intrinsic motivation (see Deci et al. 1999 for a survey). This finding has been introduced into economic theory as the 'crowding-out effect of intrinsic motivation' and has been applied to many economically relevant contexts (for surveys see Frey, 1997; Frey and Osterloh 2001; Frey and Jegen 2001). The damage done to intrinsic motivation by changing external instruments helps explain why pricing (monetary rewards) and regulating (the use of punishment) under identifiable conditions prove to have little or sometimes even counterproductive effects. For example, work incentives in the form of pay for performance can undermine work morale if they are perceived as controlling (in the sense that the workers' voluntary efforts are not acknowledged), and therefore often do not lead to increases in work effort. The crowding out effect suggests that economic incentives and the price mechanism more generally should only be used with caution if individuals have some intrinsic motivation to undertake an activity.

Identity (an individual's self-image) can also lead to decisions that conflict with rational self-interest. A strong identity can undermine the workings of economic incentives if people derive utility from behaving according to their self-image. Akerlof and Kranton (2000) show that this is relevant in many economic areas. For example, the still very unequal distribution of the sexes across different jobs is difficult to reconcile with economically rational decisions of men and women. It can be explained, however, if individuals derive utility from conforming with a (socially predetermined) gender identity. Identities are supposed to influence economic decisions in areas like consumption, savings, education, work relations, or donations, although there is not yet much rigorous empirical evidence on these topics.

#### *Market failure and social dilemmas*

Markets generally fail in the production of public goods: if no one can be excluded from the consumption of a good and therefore does not have to pay a price for it, these public goods are either not produced or only suboptimally produced in the market, although their existence would be desirable from a societal point of view. Because in these situations, individual and collective rationality diverge, they are also called social dilemmas. Social dilemmas exist in a considerable number of economic and political contexts: e.g. environmental protection, a functioning legal system, national defence, the formation of political interest groups, unionisation, teamwork in firms, and functioning cartels, all advance the welfare of the respective group or even of society as a whole. But everyone can profit from these public goods, even if he or she has not incurred costs to facilitate their production. Traditional economics offers two solutions: the structure of the problem can be changed by defining property rights, so that individually rational behaviour again leads to socially desirable

outcomes. This approach is often advanced, for example, in environmental economics with the claim that environmental certificates (pollution rights) should be introduced. Alternatively, public goods can be produced by the state (via tax financing), which is, for example, the case in national defence or the provision of a legal system.

These solution concepts disregard, however, that they possibly start from wrong premises. As has been shown in the subsection on 'pro-social preferences', individuals do not always act selfishly, but are often willing to cooperate. Social dilemmas thus can also be solved by providing an institutional environment that enables and encourages cooperation. This is especially important for social dilemma situations that are confined to relatively small groups of people, i.e. where government interventions do not make much sense and it is not possible to define property rights. Examples are common pool resources with respect to the environment and, for the economic realm, firm-specific pool resources (e.g. a firm's reputation, accumulated firm-specific knowledge, or core competences). Ostrom (1990, 2000) shows that common pool resources are governed efficiently when social sanctioning mechanisms can come into play through the possibility of self-organisation and self-regulation. Thus, non-selfish behaviour is often a valuable, if not necessary, precondition to overcome social dilemma situations and mitigate the consequences of market failure. The traditional economic approach systematically disregards such possibilities.

#### **Beyond a bounded utility concept: economics and happiness**

Over the past few years, economists have become increasingly interested in happiness or subjective well-being (surveys are given by Frey and Stutzer 2002a, 2002b). This area has long been the province of psychologists (see, for example, Kahneman et al. 1999). It has become clear, however, that the concept of happiness is able to offer new insights on issues which so far have been treated lightly or been totally neglected by neoclassical economics. First, happiness research helps to identify the determinants of individual well-being. Happiness can thus serve as an alternative measure for welfare. A considerable number of economists have become convinced that utility should be given content in terms of happiness, and that it can, and should, be measured. Subjective well-being is assessed in surveys on individuals' happiness or life satisfaction. It is a straightforward strategy to ask individuals directly about their well-being, and it corresponds to a good tradition in economics: as people are supposed to be the best judges of the overall quality of their own lives, one should rely on their individual judgements. Second, happiness research offers new possibilities for testing economic theories and discriminating between theoretical answers on empirical phenomena. Some of the results clearly contradict the standard assumptions of economics as used in most models, but others support the conventional economic views. By way of example, this inspiration of economic

research is discussed with respect to four different issues: (1) Does money (in the form of higher income) buy happiness? (2) Are people in poor countries happier than people in rich countries? (3) Do people get accustomed to higher income? (4) How does unemployment affect happiness?

- (1) 25 years ago, Easterlin (1974) asked the question whether higher income would lead to greater happiness (i.e. that, corresponding to the economic view, more money would result in more utility). Easterlin's research received some attention, but only towards the end of the 1990s did economists begin to conduct large-scale empirical analyses of the relationship between income and subjective well-being (see, for example, Di Tella et al. 2001). It is a stable result of all these studies that richer people are on average happier than poorer people. But the studies also show that income does not have much effect on happiness; other factors like health or having a job are equally or more important. Research has also addressed the question of causality: does a higher income lead to happiness, or do happier people simply earn more money? Using exogenous life events like winning the lottery, it can be established that causality indeed runs from more money to more happiness. Income, moreover, seems to have decreasing marginal utility: for low-income persons, an improvement in the income level raises happiness substantially, while for high-income persons, this is not the case. These results give support to traditional economic views, while others are contradictory. For example, one reason for the limited effect of income on happiness is that individuals evaluate their income not so much in absolute terms, but with respect to other people (relative income hypothesis). The importance of relative income can explain why, on average, richer people are happier in a country at a certain point in time, but why raising average incomes does not increase the average happiness of the population over time.
- (2) Sometimes it is questioned whether people living in richer countries are any happier than people living in poor countries. A number of studies have shown, however, that this is not the case (for example Diener et al. 1995, and Inglehart 1990). Corresponding to conventional economic views, welfare is positively connected with economic development. On average, persons living in countries with a higher GDP per capita are happier than those living in poor countries. The differences in income between the countries are measured by using exchange rates, as well as purchasing power parities, in order to control for the international differences in the cost of living. However, there again seems to be decreasing marginal utility of money. While in poor countries economic growth is able to raise happiness, GDP becomes less important for more developed countries. This suggests that additional factors are important to explain differences in reported subjective

well-being between countries. The evidence nevertheless indicates that the notion that people in poor countries are happier because they live under more 'natural' and less stressful conditions is a myth.

- (3) For many countries, however, a striking and curious result has been found: whereas per capita income has risen sharply over past decades, average happiness has stayed constant, or has even declined over the same period (e.g. Blanchflower and Oswald 2000). In the United States, for example, real per capita income has risen from US\$ 11 000 in 1946 to US\$ 27 000 in 1991, i.e. by a factor of 2.5, but average life satisfaction has fallen from 2.4 to 2.2 (on a three-point scale). Obviously, people adapt to raising incomes over time. This might have to do with the notion that relative income matters: if everyone gets richer, overall happiness is not affected. Alternatively, people might adjust their aspirations over time. Initially, higher income causes a rise in happiness, but then one gets used to the higher income level and happiness adjusts downwards (for psychological theories of adaptation see Helson 1964, or Frederick and Loewenstein 1999). This phenomenon suggests that happiness is importantly influenced by the difference between aspiration levels and the things already achieved (e.g. Inglehart 1990, chap. 7). It also explains why most people feel less happy in the present than they think they were in the past, but expect to become happier in the future (Easterlin 2001).
- (4) Most economists see unemployment as an unfortunate event to be avoided as much as possible. To become unemployed is considered to be burdensome and, above all, involuntary. But there are also economists who hold a quite different view. Following the 'new classical macroeconomics', unemployment is voluntary. People choose to go out of employment because they find the burden of work and the wages paid unattractive compared to being unemployed and getting unemployment benefits. Involuntary unemployment is a disequilibrium phenomenon and exists only in the short run until individuals and firms have adjusted. The issue of whether, and to what extent, the unemployed are dissatisfied is therefore unresolved. Happiness research on unemployment is able to offer important insights on this topic.

How particular people are affected when they become unemployed can be analysed with the help of individual micro-level data. The studies conducted have consistently documented a detrimental effect of unemployment on psychological well-being (see Darity and Goldsmith 1996 for a survey from the economic perspective). Based on their study for Britain, Clark and Oswald (1994) state that 'joblessness depresses well-being more than any other single characteristic (including important negative ones such as divorce and separation)' (p. 655). Using panel data for Germany, Winkelmann and Winkelmann (1998) show that the effect of

unemployment on happiness is in fact causal. It is not due to unobserved individual specific characteristics which might affect the likelihood of becoming unemployed and happiness simultaneously. In the same vein, all the studies control for losses in income or other indirect effects which might depress the happiness of the unemployed. Still, they find a large, negative 'pure' effect of being unemployed on happiness.

People may be unhappy about unemployment even if they are themselves not put out of work. They may feel bad about the unfortunate fate of those unemployed, and they may also feel there are repercussions on the economy and society as a whole. They may dislike the increase in unemployment contributions and taxes likely to happen in the future, they may fear that crime and social tension will increase, and they may even see the threat of violent protests and uprisings. A study of 12 European countries over the period 1975–91 (Di Tella et al. 2001) indeed finds that an increase in the general rate of unemployment reduces reported life satisfaction considerably.

#### Concluding remarks

The relationship between economics and psychology is characterised by a phase of economic imperialism and a phase of psychological inspiration. After World War II, the development towards the neoclassical standard model has squeezed almost all psychological content out of economics. The resulting economic model of human behaviour has been successfully applied to other areas outside the economy, some of them traditionally studied by psychology.

In recent years, economics has been inspired more and more by psychology. As behavioural anomalies were increasingly recognised, and more attention paid to the role of self-control problems and emotions in individual decision-making, a 'behavioural economics' gained ground. Today, it is on the way to being accepted even by mainstream economists. It is no longer taken for granted in economics that individuals always act as rational selfish maximisers. It is now seen as important that people have pro-social preferences, that extrinsic incentives may harm intrinsic motivation, that people act according to their identities, and that non-selfish behaviour is essential for overcoming social dilemma situations. It does not seem to be an irrational expectation to us that in the future, many other concepts and ideas will be fruitfully borrowed from psychology in order to make economics a more inspiring science.

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