Metaphysical Models of Man in Economics

JACk BIRNER

Department of Sociology and Social Research Università di Trento/University College Maastricht

Email jack.birner@unitn.it Web: https://www5.unitn.it/People/en/Web/Persona/PER0003666#INFO

Bio-sketch: Jack Birner's fields of research are in economics (in particular the theory of money); the history of economic thought; cognitive science; and the philosophy of social science. Birner is the author of *The Cambridge Controversies in Capital Theory: A Study in the Logic of Theory Development* (Routledge 2001).

Abstract: The metaphysical models of man that economic theories presuppose often contain indications for constructing a more complete map of causal relationships that take into account both individual and structural or collective causes. This is il- lustrated in a discussion of the theories of five important economists.

Keywords: Metaphysical research programmes, causal completeness, heuristic power.

I. INTRODUCTION

One of the distinctions the philosophy of science used to make is that between context of discovery and context of justification. That was very helpful and it still is. In the phi- losophy of the social sciences another difference used to be widely accepted, that between methodological and on- tological individualism. In the heigh-day of the debates on methodological individualism, following John Watkins' pub- lications on the topic (for instance Watkins 1952 and 1957), that distinction seemed useful, too. At the philosophical level, ontological individualism is a nominalist approach to the social realm, which is conceived of as consisting of indi- vidual agents. According to this view, social institutions do not have a separate existence from these individuals. This does not imply, however, that the latter cannot exert any causal influence. How to model individual and collective or structural causality is one of the central topics in discussions on methodological individualism. For methodological ho- lism this problem, if it is recognised as such at all, is at the most secondary. Collective entities are seen as exerting di- rect causal influence on other social wholes and individuals. This alternative and opposed explanatory strategy to meth- odological individualism is rooted in a particular metaphys- ics or ontology which has been called essentialism by Karl Popper (see Di Iorio 2015). Popper in *The Open Society and*

Its Enemies and *The Poverty of Historicism* and Friedrich von Hayek in *The Road to Serfdom* and *The Counter-Revolution of Science* elaborate the link between these explanatory theo- ries and collectivistic social and political philosophies.

In the twentieth century the influence of logical positivism had created an intellectual climate in which, even after the Second World War, metaphysics was almost taboo for phi- losophers of science. This is unfortunate because metaphys- ics is often a source of explanatory inspiration. This has been argued forcefully by Popper. He talks about metaphysical research programmes, by which he means sets of ideas that do not constitute falsifiable and hence scientific theories yet may have great heuristic power (Popper 1974). One of the examples Popper gives is the theory of evolution.[1] Now, en- couraged, so to speak, by this particular positive use of meta- physics, I make the following proposal. Instead of opposing methodological individualism with methodological holism and rejecting the latter because of its links with ontologi- cal holism, it is more fruitful to investigate whether or not a particular explanation in the social realm is causally com- plete. Collective phenomena are the intended or unintended consequences of the interactions between individuals, so in order to explain them we need laws of individual behaviour. But this is not enough. In order to be able to interact with one another, individuals need a structure of interaction, which is part of the set of social institutions. Explanations of

collective phenomena that fail to pay attention to this struc- ture are causally incomplete, as is the opposite strategy of ex- plaining collective phenomena without paying attention to the behaviour of individuals (see also Di Iorio, 2016). I have recently addressed this matter elsewhere (Birner 2015).

What I will try to illustrate here is that the heuristic power of theories about individual human beings and their envi- ronment, no matter whether they are scientific or metaphys- ical, lies in the indications these theories provide for a more complete causal map of collective phenomena. I will discuss some metaphysical theories underlying different economic theories all of which respect the principles of methodologi- cal individualism. These different metaphysics are theories of human behaviour or “models of man” (the title of a book by Herbert Simon) that are implicitly or explicitly presup- posed by some different economic theories. They boost their heuristic power. I will discuss five economists whose theories are sufficiently similar to justify a comparison and sufficiently different so as to raise a number of interesting questions about economics. Three of them, Friedrich von Hayek, Herbert Simon and Gary Becker, have been awarded the Nobel prize for economics. The other two, Adam Smith and William Stanley Jevons, would certainly have been No- bel laureates if the Central Bank of Sweden had taken the initiative for that prize two centuries earlier.[2]

II

Economics and philosophy

As is almost always the case with discussions of economic theories, philosophical questions are

not far away. They com- prise both methodology, i.e., the questions about the meth- ods of doing economics and the place of economics amongst the other social sciences, and metaphysics, which in this case concerns the question of what sort of human being is pre- supposed by various economic theories. Metaphysics is the set of unfalsifiable theories about what there is (ontology) and what there should be (ethics). I will not say much about ethics[3] but will limit myself to a brief discussion of "factual" metaphysics in economics.

Ever since William Stanley Jevons, Carl Menger and Léon Walras, the three authors who are generally considered to be the independent discoverers of the maximisation of individ- ual utility as the driving force in economic affairs, econom- ics is generally considered to be the science of choice, and of rational choice in particular. The radical character of choice, the idea that human beings are condemned to choose, is

what main stream modern economics shares with the phi- losophy of existentialism of Jean-Paul Sartre. Of course, Sartre does not sustain that human beings always choose *rationally*, but he emphasises that they cannot evade the ne- cessity of choice: even the act of not choosing is the result of a choice. Human beings are always entirely responsible for whatever they do. The ultimate choice an individual can make is to stop choosing, i.e., commit suicide.[4] The idea that human beings choose rationally is taken to its extreme con- sequences by Gary Becker, the last of the authors that I dis- cuss. Becker says, for instance, in terms that are reminiscent of Sartre, that "most (if not all) deaths are to some extent sui- cides...." (Becker 1976, p. 10). That is because an individual could always have chosen to abstain from smoking, drinking alcohol or otherwise dangerous behaviour or to devote all of his resources to the care for his health.

But before discussing the radical idea that all human ac- tion involves rational choice,[5] held by one of the School of Chicago's most prominent representatives, I will review a number of other metaphysical models of man in economics. We begin with Adam Smith.

Adam Smith: man between self-interest and sympathy — economics as the science of wealth accumulation

Before 1870, economics ("political economy") was basically macroeconomics and it studied the productive and mon- etary mechanisms involved in economic growth.[6] Adam Smith would have been very surprised at the idea of eco- nomics as the science of choice, even though he strongly believed in the beneficial consequences of human freedom. What he concentrates on instead in his economics is the di- vision of labour. The division of labour allows a society to reach a degree of specialisation that enables it to produce goods and services much more efficiently than a (hypotheti- cal) primitive society where everybody provides for all of his own needs. The division of labour, the pursuit of self interest and exchange on national and international markets are the factors that explain the accumulation of wealth.

Economists generally consider Adam Smith to be the founder of their discipline, for which they refer to *The Wealth of Nations* (*WoN*). They are fond of quoting the fol- lowing passage that it has become famous: "It is not from the benevolence of the butcher, the brewer of the that we expect our dinner, but from their regard to their own inter- est" (Smith 1776, p. 13). The pursuit

of self interest, conclude most economists, is the core of Smith's theory of human ac-

tion. Had they started reading a couple of lines earlier, they would have found the following:

In civilised society he [man] is at all times in need of the cooperation and assistance of great multitudes, while his life is scarce sufficient to gain the friendship of a few persons...[M]an has almost constant occasion for the help of his brethren, and it is vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and show them that it is in their advantage to do for him what he requires of them...(Smith 1776, pp. 12-3).

This shows a very different picture of man from the one economists have distilled from *WoN*; human beings try to convince their fellows of the importance of cooperation and the most successful way of doing so is to show that it is in someone's interest to cooperate.

The term "civilised society" is a reference to the other book by Smith that has survived, *The Theory of Moral Sen- timents*. It was published seventeen years before *WoN*, and that is perhaps the reason why most economists ignore its existence. For Smith the two books are complementary: the one is incomplete without the other. And indeed, the very first sentence of *TMS* corrects the impression that an isolated reading of *WoN* may leave, viz., that man is only motivated by the pursuit of self-interest:

How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happi- ness necessary to him, though he derives nothing from it, except the pleasure of seeing it (Smith 1759, p. 47).

The link between the arguments of the two books is par- ticularly clear in Part II, Section II of *TMS*, with the title "Of Justice and Beneficence." In chapter 3 Smith writes:

Society may subsist among different men, as among different merchants, from a sense of its utility, without any mutual love or affection; and though no man in it should owe any obligation, or be bound by gratitude to any other, it may still be upheld by a mercenary ex- change of good offices according to an agreed valua- tion. Society, however, cannot subsist among those who are at all times ready to hurt and injure one an- other. ...Society may subsist, though not in the most

comfortable state, without beneficence; but the preva- lence of injustice must utterly destroy it" (Smith 1759, pp. 166-67).

"As among different merchants", "sense of utility", "without love or mutual affection", "mercenary exchange", all of these are references to the political economy of *WoN*. The pas- sage clearly indicates the complementarity of the two books: while the exclusive pursuit of self-interest does not necessar- ily lead to the dissolution of society, it is not enough to estab- lish and maintain a civilised society, one in which all or most men are guided by their sense of justice. For that to be the case it is necessary that man dispose over "sympathy", i.e., the capacity to see the world from someone else's point of view. In terms that have been used

much later by the philos- opher John Rawls, Smith invokes the "impartial spectator" as the ideal (and idealised) human being who represents the capacity of sympathy *par excellence*; it is a theoretical con- struct that represents the collective conscience (in the moral sense) of society. The dictates of this conscience attenuate the passions, only one of which is self-interest.

For Smith economics is part of moral philosophy, the sub- ject in which held a chair at the university of Glasgow. Moral philosophy comprehends natural theology, natural ethics, natural jurisprudence and policy. *The Theory of Moral Senti- ments* covers natural ethics, and policy is the science of the statesman, which includes political economy: *WoN* and *TMS* are part of a larger system of thought. The "natural" of the various subjects that are part of moral philosophy refer to the natural-law tradition of John Locke, to which Smith, too, belongs.

For modern readers, natural theology comes a bit as a sur- prise, but we ought not to forget that even at the end of the 18th century it was very risky for a Western thinker to create the impression that he did not believe in God. Smith's good friend David Hume paid a high price for this. Smith men- tions the Deity in several passages of *TMS*, but nothing of the book's argument is lost if these are omitted. Both Smith and Hume belong to an innovative tradition that prepared the way for a philosophy in which God was no longer the center of everything.[7]

And indeed, *WoN* has an internal dynamics of its own, one that caused economics to become an independent scien- tific discipline. Let us see what Smith says about the subject:

Political economy, considered as a branch of the sci- ence of a statesman or legislator, proposes two distinct objects: first, to provide a plentiful revenue or subsis-

tence for the people, or more properly to enable them to provide such a revenue or subsistence for them- selves; and secondly, to supply the state or common- wealth with a revenue sufficient for the public services. It proposes to enrich both the people and the sovereign (Smith 1776, Introduction to Book IV).

Forty years after the first edition of *WoN*, with the pub- lication of David Ricardo's *Principles of Political Economy and Taxation,* the transition from economics as part of moral philosophy to the status of an independent scientific discipline had been completed. As a member of parliament Ricardo tried to forge the factual arguments with which to justify his political convictions. By that time economics had become the analysis of the forces of production and distribu- tion as the scientific underpinning of economic policy. It ad- opted Newton's method as its scientific canon. This is most apparent in the work of another classical economist, Jean-Baptiste Say.

When the first impact of Newtonian natural philosophy was over, the time seemed ripe for a reflection on the distinc- tion between what today would be called the social sciences and natural science. This added another dimension to po- litical economy. John Stuart Mill took

over from the German tradition of thought the idea that social science differs from natural science in that the former deals with mental phe- nomena. Mill translated the German *Geisteswissenschaften*, the non-natural sciences, by *moral sciences*. Psychology, which had undergone some important developments in the last quarter of the 19th century, became a source of inspi- ration for economists.[8] These same economists, however, wanted to keep economics a scientific discipline that was in- dependent from psychology and other sciences of man.

Smith's model of man

So what is Smith's "model of man?" It is more complex than that of man as a rational utility maximiser that we find in modern economics textbooks. Man tries to improve his own position and that of his relatives and friends by seeking to benefit from exchanges in which he attempts to convince his partners in exchange that it is in their interest, too, to trade goods and services. In addition, human behaviour is guided by the sense of justice, i.e., the conviction that one should try to avoid harming one's fellow men. This sense of justice in its turn is based on man's capacity to put himself in the place of his fellows, a capacity that Smith calls sympathy, plus the pleasure that man derives from seeing his fellow-men happy.

Sympathy and justice are what elevates a crude and rude so- ciety that is exclusively based on the pursuit of self-interest to the status of a civil society.

William Stanley Jevons: man as a pleasure seeker— economics as the science of exchange

The attempt to turn economics into an independent science is particularly clear in the work of Jevons: "it is ... obvious that economics ... rest[s] upon the laws of human enjoy- ment; and ... if those laws are developed by no other sci- ence, they must be developed by economists." (Jevons 1871, p. 102). The work of Jevons and his fellow marginal revolu- tionaries constitutes a clean break with classical economists such as Smith and Ricardo: they base the whole of econom- ics on the theory of human choice. The best illustration of this revolutionary development is provided by a confronta- tion of the classical with the neoclassical theories of value. For the classical economists, value is an inherent quality of a good, the amount of which is determined by factors on the production side. The best-known example is Smith's (and others', such as Marx') labour theory of value: the value of a good is determined by the amount of labour that has gone into its production. Against this objective theory of value, so close to common sense, the neoclassical economists propose a rather counterintuitive subjective value theory: the value of a good is determined by the utility that human beings sub- jectively attribute to it. Man takes the central place that used to be occupied by the forces of production. Jevons himself understates the idea that value depends only on utility as a "somewhat novel opinion." (Jevons 1871, p. 77).

This radical change in perspective should not, however, obscure the continuity with classical economics that is con- stituted by economics' concern with collective phenomena; the study of individual man may have become the founda- tion of economics but its purpose is to explain the emergence of prices and the mechanisms of exchange. That makes it still necessary to

reconstruct the metaphysics that underlies, or is presupposed by, neoclassical economics. The marginal revolution marks a clean break with the explanation of value by classical economics. Yet, given the influence that Adam Smith still exerted a hundred years after the publication of *WoN*, Jevons could not avoid addressing the relationship be- tween economics and ethics. Following Jeremy Bentham, he writes that he sees no fundamental difference between the calculus of pleasure in economics and the pursuit of justice in ethics. There is at the most a hierarchical difference; eco- nomics studies man in his attempts to satisfy the more ba-

sic needs, ethics is concerned with needs of a higher order. What Jevons is really saying here, even though his message is implicit, is that he has unified the motivations of human behaviour distinguished by Adam Smith: pursuit of self-in- terest, which is the domain of economics, and the basic drive of the pursuit of justice and the faculty of sympathy, "which interest him in the fortune of others, and render their hap- piness necessary to him, though he derives nothing from it, except the pleasure of seeing it." (Smith 1759, p. 47, already quoted above).

One aspect of Jevons' economics which distinguishes it from its classical predecessors is that he presents it as a mathematical science. The reason, according to him, is that economics deals with quantities. Jevons was convinced that, in order to be a real science, economics should use the mathematical method, which had produced such outstand- ing progress in the natural sciences (as a first-class logician and philosopher of science Jevons knew what he was talking about). The difference lies in the actual *application* of math- ematics; the *ideal* of adopting the methods of the natural sci- ences is what we find in classical economics, too.

The third major distinguishing characteristic of Jevons' economic theory is that it takes as its main problem the maximisation of pleasure:

Pleasure and pain are undoubtedly the ultimate objects of the calculus of economics. To satisfy our wants to the utmost with the least effort—to produce the great- est amount of what is desirable at the expense of the least that is undesirable—in other words, *to maximise pleasure*, is the problem of economics (Jevons 1871, p. 101, italics in original).

This fundamental idea of man as a pleasure maximiser is ideally suited to the mathematical treatment of the calculus that is used physics.

In the third chapter, "Theory of Utility," we find every- thing that is still part of modern

textbooks of microeconom- ics. Apart from the model of man as a maximiser of utility, Jevons presents decreasing marginal utility as a general law: “the degree of utility varies with the quantity of commodity, and ultimately decreases as that quantity decreases.” (Jevons 1871, p. 111, italics deleted). The law, however, is not so general as not to allow of exceptions: “the more refined and intellectual our needs become, the less are they capable of satiety” (Jevons 1871, p. 112).

The theory of utility maximisation and the law of decreas- ing utility form the basis on which the theories of demand,

supply and exchange are constructed. Exchange takes place because individual preferences are not homogeneous and producers and consumers try to maximise their utility. My total pleasure increases if I can exchange a couple of units of a good that do not add much to my pleasure against a good that I like better and of which I have less, and hence has a greater marginal utility. The problem is finding an exchange partner who is in a contrary (or rather, complementary) position. That problem has been solved by the existence of markets, which allow us to engage in multilateral exchange operations involving many different goods.

Jevons shows that his theory of exchange is formally iden- tical with statical mechanics: an exchange equilibrium, i.e., a situation in which none of the parties concerned has an in- centive to continue trading goods because they have reached an exact balance between marginal costs and marginal ben- efits, can be described with the same formalism that is used in mechanics to characterise the static equilibrium of the lever. It presupposes the existence of friction-free physical processes, which has its counterpart in Jevons’ description of exchange as free of costs. In reality, exchange is not without costs, and Jevons enumerates a number of factors that enter on the cost side of the exchange equations. In modern times these costs have been rediscovered and elaborated into a the- ory of institutions by Robert Coase and Oliver Williamson under the name of transaction costs.[9]

So, following the example of the natural sciences, Jevons proposes a highly idealised economic theory. The “law of one price,” for instance, that is part of microeconomics still today, is an idealising law: “in the same open market, at any one moment, there cannot be two prices for the same kind of article.” (Jevons 1871, p. 137, italics deleted). Here we see at work an implicit “ceteris paribus” proviso, which is often considered typical of neoclassical economics. In the follow- ing sentence Jevons states: “Such differences as may practi- cally occur arise from extraneous circumstances, such as the defective credit of the purchasers, their imperfect knowledge of the market, and so on.” (Jevons 1871, p. 137). This passage indicates that Jevons bases his theory on a number of ide- alisations, of which the possession of perfect knowledge by the economic agents is perhaps the most important. Modern neoclassical economics has inherited this presupposition di- rectly from Jevons, without, however, always remembering that is an idealisation and not a realistic description of reali- ty. This is exactly the point where later authors such as Hayek and Simon part with the neoclassical tradition.

Jevons himself is very much aware of the distance between his idealising theory and descriptions of reality:

Of course, laws, which assume a continuity of varia- tion are inapplicable where continuous variation is impossible. Economists can never be free from difficul- ties unless they will distinguish between a theory and the *application of a theory*. Because, in retail trade, in English or Dutch auction, or other modes of traffic, we cannot at once observe the operation of the laws of supply and demand, it is not in the least to be supposed that those laws are false" (Jevons 1871, pp. 148-9, italics in original).

Man in his pleasure-maximising activities is also guided by the future. In fact, Jevons insists upon the importance of expectations, without, however, describing their role in de- tail. That is an aspect of economic theory that was elaborated by the economists of the Austrian School, whose founder, Carl Menger, was already mentioned and an important rep- resentative of which is the subject of the next section.

Jevons' model of man

But before describing Hayek's economics, let me summarise the metaphysics of man that underlies Jevons' economics. Man's behaviour is guided by his attempts to maximise his pleasure (or utility) with the least possible sacrifice. In other words, he follows those roads towards the satisfaction of his subjective needs that involves the highest possible positive difference between pleasure or utility and "negative plea- sure." This behaviour can be described, if we abstract from complicating factors in reality such as the absence of per- fect knowledge, by a theory that "may be described as the mechanics of utility and self-interest." (Jevons 1871, p. 90, italics deleted). It is important to notice that Jevons does not say that man actually calculates rationally all the posi- tive and negative utilities involved in each choice and each act of exchange; the rational character lies in the idealising theory describing this behaviour. In reality, human action, because it is also guided by expectations, is subject to the un- certainties of the future, and takes place in an environment with many "imperfections," the most important of which is the lack of complete knowledge.

Friedrich von Hayek: man as an irrational and fallible chooser—economics as the science of coordination

There is no doubt that Hayek (Nobel prize 1974) is a politi- cal economist in the sense of Ricardo. From very early in his career he embraces the principles of classical liberalism and

picks the economic problems that he studies in the light of that doctrine. By emphasising the role of perceptions, expec- tations, and subjective valuations, Hayek also qualifies as a moral scientist in the sense of Mill. He also devotes much of his work to the examination of the

methodological con- sequences and the differences with the natural sciences of this position. The result is an impressive list of publications on pure and applied economic analysis. Hayek tries to find a scientific explanation for moral rules and gives scientific arguments for political or moral positions. In this Hayek is exemplary: he tries to make as much progress as possible by scientific, or rather, critical means, in fields that have suf- fered from ideological immovable *parti pris* for too long, le- gal, political and social philosophy.

Even though he accepts rational choice theory, or the pure logic of choice, as he calls it, Hayek is very critical of neo- classical economics. Hayek rejects the standard neoclassical analysis of markets as being static and tautological. Static, because it provides a classification of various types of mar- ket that are defined in terms of static conditions, such as the number of sellers or purchasers and the shape of the de- mand and supply curves. And tautological, because it makes a number of assumptions that deprive its models of empiri- cal content. As far as the latter aspect is concerned, Hayek singles out the assumptions of perfect competition and perfect information. The neoclassical assumption of perfect competition describes a situation in which goods and sell- ers or producers are completely homogeneous and the price is given. This characterises the *absence* of any competition. The assumption of perfect information is one of the condi- tions for of market equilibrium. Here Hayek's criticism is that equilibrium is *defined* as the state in which all buyers and sellers have perfect information.

The concept of equilibrium is central to Hayek's alterna- tive explanation of the way in which markets work. The ba- sic unit of analysis is the planning individual. The idea of a plan logically presupposes time. Hayek defines equilibrium as the correspondence between the expectations on which the individual bases his plans and the informational input which serves as feedback. When planning his behaviour, the individual applies the pure logic of choice to his own prefer- ences and his perception of the future. An economic system is composed of a multitude of such perceiving, planning and utility maximising individuals who interact and communi- cate with one another.[10] The system is in equilibrium if the plans of all individuals are compatible with one another. Markets are the social institutions that allow individuals to exchange goods and services using prices as their guidelines.

The interaction on markets takes place via a communication structure that transmits price information efficiently and rapidly because the fields of perception of the individuals are partially overlapping. Competition is a crucial element in the spreading of information; it

consists of a process in which individuals actively seek to discover new and so far untried opportunities. Hayek emphasises the role of learn- ing and knowledge by saying that the division of knowledge and its coordination are more fundamental than the division of labour. Indeed, markets have arisen, and have survived, in an evolutionary process because they responded to the need for coordinating dispersed knowledge. They are the so- cial institutions which create the high degree of availability of knowledge to everyone that is characteristic of developed economies. Their functioning relies on an efficient commu- nication structure. The inclusion of the structure of com- munication in the analytical framework is very unusual in economics, particularly at the time when Hayek wrote.[11]

As I have observed, Hayek's criticism of traditional equi- librium theory is that it is circular: "Correct foresight is ... not, as it has sometimes been understood, a precondition which must exist in order that equilibrium may be arrived at. It is rather the defining characteristic of a state of equi- librium" (Hayek 1937, p. 42).[12] This may be reformulated as follows. The assumption of correct foresight implies that individuals have full access to all available knowledge about the future. In other words, there are no gaps or other imper- fections in the intertemporal communication structure. For their current exchange relationships the assumption of per- fect information implies a similar perfection of the present communication structure. Neither is the case in reality. So, the perfect information assumption relegates the standard neoclassical analysis at the most to the status of a limiting case, or idealising model. On the other hand, markets and competition are considered to be crucial in creating an ef- ficient structure of communication. Neoclassical analysis has little or nothing to say about this. Hayek does: "The whole acts as one market, not because any of its members survey the whole field, but because their limited individual fields of vision sufficiently overlap so that through many inter- mediaries the relevant information is communicated to all" (Hayek 1945a, p. 86).

When he wrote this, Hayek was already moving from eco- nomics to a more general theory and philosophy of society. For understanding his development from a technical econo- mist to a philosopher of society and for gaining insight in the underlying metaphysics of human action, "Individual- ism: True and False" (*ITF*) (Hayek 1945) is an important ar-

ticle. In *ITF* Hayek works out the consequences of the theory of society of the philosophers of the Scottish Enlightenment, such as Smith and Hume, its individualist methodology:

This argument [of the Scottish philosophers] is direct- ed against the properly collectivist theories of society which pretend to be able directly to comprehend social wholes like society, etc., as entities *sui generis* which exist independently of the individuals which compose them (Hayek 1945, p. 6).

This is different from the *so-called* individualism of the Cartesian school, which is usually referred to as rationalism. This is why Hayek calls the true individualism of the Scottish Enlightenment anti-rationalism.

The antirationalistic approach, which regards man not as a highly rational and intelligent but as a very irratio- nal and fallible being, whose individual errors are cor- rected only in the course

of a social process, and which aims to make the best of a very imperfect material, is probably the most characteristic feature of English in- dividualism (Hayek 1945, pp. 8-9).[13]

This insight is due to Bernard Mandeville. The main dif- ferences between the pseudo-individualism of the rational- istic or engineering tradition on the one hand and the true individualism of the Scots are that "true individualism is the only theory which can claim to make the formation of spon- taneous social products intelligible" and "believes ... that, if left free, men will often achieve more than individual human reason could design or foresee (Hayek 1945, pp. 10-11). This has consequences for political philosophy:

The great concern of the great individualist writers was indeed to find a set of institutions by which man could be induced, by his own choice and from the motives which determined his ordinary conduct, to contrib- ute as much as possible to the need of all others (...) (Hayek 1945, pp. 12-13).

Hayek emphasises the anti-rationalistic character of this philosophy, which is:

a view which in general rates rather low the place which reason plays in human affairs, which contends that man has achieved what he has in spite of the fact that he is only partly guided by reason, and that his

individual reason is very limited and imperfect... One might even say that the former is the product of an acute consciousness of the limitations of the individual mind which induces an attitude of humility toward the impersonal and anonymous social process by which individuals help to create things greater than they know (...). (Hayek 1945, p. 8).

The great discovery of the classical economists is that:

many of the institutions on which human achieve- ments rest have arisen and are functioning without a designing and directing mind (...) and that the spon- taneous collaboration of free men often creates things which are greater than their individual minds can ever fully comprehend (Hayek 1945, p. 7).

Hayek's model of man

So what is the model of man, the metaphysics of human ac- tion,[14] that is presupposed by Hayek? In his economics man is a planner, i.e., he takes into account expected future events and circumstances. He tries to achieve an internal equilib- rium within his plan, which means that he applies the cal- culus of utility maximisation, or the pure logic of choice, to distribute

the present and expected future means at his dis- posal in such a way that he has no incentive to alter his plan. The informational input of the pure logic of choice consists of man's knowledge of his own preferences and of the per- ceived current external circumstances and the expected fu- ture ones. An important part of the external circumstances consists of the plans and actions by other individuals. Since these change continuously, human beings have to continu- ously adapt their plans.

As each and every individual can only perceive his imme- diate environment, each plan is based on partial, incomplete information: individual man is irrational in the sense of not disposing over all relevant knowledge and information. Ra- tionality "with a capital R" (Hayek 1945, p. 8) only exists at the system level, provided the spontaneous coordinating forces of the market are left to do their work—assisted by an adequate legal, political and more generally institutional framework. The basic problem that is solved by each socio- political system is how all these individual bits and pieces of knowledge are coordinated, and the system that succeeds best in doing so is to be preferred to all others. For Hayek this is the liberal market society, in which each individual has the maximal freedom to use his capacities as he sees

fit. This is also to the benefit of all others. The process that stimulates the discovery of new knowledge is that of com- petition.[15]

The idea of irrational individuals whose behaviour never- theless leads to regularities at the level of the economy has recently been confirmed by experimental economics (Cp. Smith 1994, p. 118 and Terna 2000).

Herbert Simon: man as a satisficer—economics as the science of bounded rationality

Of the five authors discussed in this chapter, the one who comes closest to realising Mill's ideal of economics as a mor- al science is Herbert Simon (Nobel prize 1978). Hayek, of course, took very seriously the idea that in explaining human behaviour what counts is not so much the way the world *is* objectively as the way individuals *think* it is: the data of the social sciences are the opinions of the agents.[16] For Hayek this is a methodological principle which he borrows from Carl Menger and which he used initially to construct his the- ory of the business cycle. That theory says, very briefly, that in a modern, credit-based economy variations in the amount of money can never be exactly in proportion to changes in the real exchange rates between goods. The consequence is that individuals, who base their decisions on what they can *perceive*, i.e., money prices allocate their resources not in accordance with real scarcities. Their savings and invest- ment plans are therefore mistaken, and this causes economic growth to proceed from booms to recessions. It is only in a recession that individuals find out the hard way that their plans cannot be realised. The fact that individuals base their decisions, apart from their perceptions, on the infallible pure logic of choice, does not change this.

Herbert Simon arrived at his decision making model in a very different way. After developing, during World War II, linear programming, which is designed to coordinate deci- sion within an organisation, he started studying the way in which organisations really behave. That was very different from the procedures recommended by linear programming. This aroused his curiosity

about the way in which humans solve problems in reality. He built on work by, among other pioneers, A.D. de Groot, who studied the reasoning pro- cesses employed by chess players.[17] The result was a book that almost half a century later is still the classical reference in problem solving theory: *Human Problem Solving*, co-au- thored with Alan Newell. That publication inspired an enor- mous amount of empirical research into how humans take decisions in reality. Simon himself made important contri-

butions to this empirical research. His two main results are the following. First, it is physically and mentally impossible for a real human being to execute all the calculations that are needed to arrive at an optimal decision: time is one of the scarce factors and therefore humans stop when they have reached a result that they are satisfied with. A "pure logic of choice" exists but it is not the decision rule that real people use. Second, they cannot take into consideration *all* the rel- evant factors. That is because there are too many of them, and, more fundamentally, what is or is not a relevant factor is not objectively given. It depends on people's ideas or "theo- ries" about the world. So, in order to understand individual decision processes we have to know how people form their "theories".

What Simon proposes is a more general model of man than we can find in his predecessors. Man is not so much a decision maker as a problem solver. That this is a more gen- eral model can easily been seen when we answer the ques- tion: what problem does he solve? Adam Smith's answer is: the problem of convincing one's fellow man that it is in his best interest to cooperate, and this problem can be solved because we humans have the faculty of sympathy. Jevons' (and Becker's, as we shall see) answer is: the problem how to achieve the most pleasure with the least sacrifice. Hayek's answer is: how to realise one's plan. For Simon, taking eco- nomic decisions is just one example of problem solving, one that concerns the achievement of the best possible allocation of one's resources.

It is precisely this "best possible" that is the object of Si- mon's research. Instead of the unrealistic idea of main stream neoclassical economists that the best possible is equivalent to the most, Simon knows from empirical research that this is almost never the case. First of all, for him, the typical in- dividual is irrational in Hayek's sense that he can never take into consideration all the knowledge needed to arrive at a "globally" or absolutely optimal decision. What constitutes the necessary knowledge and information depends on the individual with his particular mental make-up, in his par- ticular situation, and with his particular history. In order

to solve a problem, people have to create a model of the prob- lem situation. Simon calls this process *framing*. The way in which a problem is framed or mentally represented has a de- cisive influence on how it is solved and on what consequenc- es the solution has for behaviour. A well-known example is that of a lottery. Mathematically speaking, if the chance of winning 1000 euros with a lottery ticket that costs 1 euro is 20 % this is equivalent to a chance of losing of 80%. Exten- sive empirical research has demonstrated that if you describe

the lottery in terms of the chance of winning, people buy more lottery tickets than when you describe it in the mathe- matically equivalent terms of an 80% probability of losing.18 In case this example looks a bit frivolous, let me mention another. If your doctor reads in an article in a professional journal that the chance of curing a particular tumor with treatment A is 30% and in a different article that treatment B has a 60% chance of failure, he will prescribe cure A. This may cost you your life, since B has a 10% higher probabil- ity of curing you. Instead, the decision model of neoclassi- cal economists presupposes that individuals react neutrally to formally equivalent alternative descriptions of a decision situation; after all, they are supposed to be perfectly ratio- nal—which as a matter of fact they are not.

This perfect rationality also comprises the idea that an in- dividual will go through all the necessary calculations before arriving at the optimal alternative. This is the second aspect in which Simon's model of human behaviour differs from both Hayek's and neoclassical economics. *All* calculations, even if they are made on a limited subset of all information, are quite a lot. So many, indeed, that by the time we have arrived at the solution we are either dead or the data (includ- ing our preferences) have changed. Or—equally lethally—if we arrive at two equivalent solutions, we, like Buridan's ass, do not know what to do.

In order to put Simon's criticism into perspective, let me briefly discuss an article by Spiro Latsis. In his "Situational determinism in economics of 1972 Latsis argues against the neoclassical decision model that *if* all relevant factors are given and *if* individuals choose perfectly rationally, they have no freedom of choice: there is only one correct outcome. Whereas this criticism is valid as far as it goes, Simon's (and partly Hayek's) criticism goes further. Simon (like Hayek) ar- gues that all relevant factors are not given but are selected. Now a neoclassical economist could reply (as does Becker, as we will see) that the selection process itself is not costless and that therefore the rational choice model can be used to describe that, too. But even if this were true, then Simon's second criticism would apply: this would only aggravate the decision process, since the individual would have to make even more calculations—for which he has neither the mental capacity nor the time.

Types of rationality

A way to understand how Simon's theory differs from neo- classical economics is provided by his own distinction of dif-

ferent types rationality. The first distinction is that between global and bounded rationality.

Global rationality, the rationality of neoclassical eco- nomics, assumes that the decision maker has a com- prehensive, consistent utility function, knows all the alternatives that are available for choice, can compute the expected value of utility associated with each alter- native, and chooses the alternative that maximises ex- pected utility. Bounded rationality, a rationality that is consistent with our knowledge of actual human choice behavior, assumes that the decision maker must search for alternatives, has egregiously incomplete and inac- curate knowledge about the consequences of actions, and chooses actions that are satisfactory (attain targets while satisfying constraints) (Simon 1997, p. 17).

The second distinction is between substantive and proce- dural rationality.

The former is concerned only with finding what ac- tion maximises utility in the given situation, hence is concerned with analyzing the situation but not the de- cision maker. It is a theory of decision environments (and utility functions), but not of decision makers. Procedural rationality is concerned with *how* the deci- sion maker generates alternatives of action and com- pares them. It necessarily rests on a theory of human cognition (ibid.).

How the two pairs are related is explained next:

Global rationality is substantive—it responds to the ac- tual, objective characteristics of the decision situation [cp. Latsis' single-exit model]. But is only feasible if the situation is sufficiently simple so that human decision makers can apprehend the objective solution. In the more complicated situations (most situations of practi- cal interest) human bounded rationality requires that we understand the decision procedures if we are to un- derstand behavior. A theory of bounded rationality is necessarily a theory of procedural rationality (Simon 1997, p. 19).

Simon's model of man

So what is Simon's model of man or metaphysics of human action that underlies his economics? Man is always involved

in problem solving,[19] which means that he actively (even though mostly unconsciously) imposes order—his order— on complex reality. This framing process provides him with the elements for solving the problem, whether it be an emo- tional or an economic one. Typically, the number of alter- natives, even though they have been drastically reduced in the framing process, is great and a complete analysis of the problem is beyond the mental (and physical—lack of time) reach of man. He therefore stops once he has reached a so- lution that he finds acceptable or satisfactory. An implica- tion of this model—one that has not been made explicit by Simon—is that this leaves human beings the opportunity to pursue many objectives—solve many problems—even at the same time. This also leaves him with the possibility of choice, one that according to Latsis the neoclassical model excludes. In order to describe the behaviour in solving that problem, Simon's model applies at a higher level, apparently leading to an infinite

regress of choice problems (and levels). This is consistent with Sartre's idea that man is condemned to choose.

Gary Becker: human behaviour as led by costs and benefits—economics as the science of optimising behavior

The work of Gary Becker (Nobel prize 1992) is a consistent elaboration and generalisation of Jevons' idea that man con- sistently tries to reach the highest level of utility with the least expense of disutility. In principle, there is no domain of human behaviour that cannot fruitfully be explained as a consequence of a cost-benefit analysis: the choice of mar- riage partners, the number of children a couple decides to have, racial and sexual discrimination, altruism, crime and punishment, etc. Like Jevons, he often refers to Bentham, who had applied his "calculus of pleasure and pain" or hedo- nistic calculus to all social phenomena.

Jeremy Bentham's philosophy is based on the greatest hap- piness principle, universal egoism and the artificial identifi- cation of one's interests with those of others. Together with Hume's associationist psychology, these principles supported an all-encompassing system of thought, which also includes ethics (that which does not maximise the greatest happiness is morally wrong). Bentham used his system to propose a rational approach to all social phenomena. For instance, he proposed, in his *Panopticon*, a system of prison reform that would reduce the cost of prisons to society while the pun- ishment of criminals was proportional to the seriousness of the crime and to the cost of withholding a potentially useful member of society from the social production process. Just

one example to illustrate the sort of conclusions Bentham ar- rived at. He explained the ineffectiveness of capital punish- ment to reduce the crime rate as follows. Most criminals at the time came from the poorer classes of society, many of whose members had no reasonable prospect of earning an honest living. If a poor person has the choice between steal- ing and starving, the prospect that, if caught and convicted, he will be hanged has no great deterrent power; by not steal- ing he would have died anyway. Theft, moreover, has the ad- vantage of leaving a certain probability of not getting caught and surviving whereas remaining honest

without having a source of revenue signifies certain death. If, on the other hand, crimes are punished with reclusion in a prison where the criminal is taught skills that may help him to earn an honest living, he is less likely to become a burden to society after he has been released.

What Becker does, is to consistently elaborate Bentham's programme, using the techniques and concepts of modern neoclassical economics. The central concept in his analysis is that of opportunity cost. The opportunity cost of an action consist of the all the benefits that I have to forego if I under- take that action. For instance, if I decide to go skiing this af- ternoon, I cannot read the book that I have recently bought, go walk the dog, sit in a bar and chat with friends, etc. A rational decision on which of these actions to undertake is based on the calculation of the relative costs and benefits of all alternatives. While this may seem feasible in case these alternatives have a market price, the example shows that this is often not the case. That is why Becker introduces the *house- hold production function*. A household (which may consist of one or more individuals) derives its utility of all the "goods" that it may produce with the help of market goods and ser- vices and its own time, using the "technology" available (which comprises both the household's own specific skills and the technology that may be found or purchased outside the household). The limits, or budget constraints, on the maximum amount that can be produced are the maximum available time and the household's income. Applying the usual microeconomic utility-maximising calculus, this leads to the decision rule that, in order to maximise utility, the ra- tio of any two commodities should equal the ratio of their marginal costs. The term "shadow prices" refers to the fact that the cost of producing one additional unit (the marginal cost) of a good involves not only prices of market goods but also of the household's time, which is a non-market good, and its productivity.

Becker started his career as a sociologist and began to analyse problems that were traditionally dealt with by so-

ciologists with the instruments of economics. He thus dis- covered that "the economic approach is uniquely powerful because it can integrate a wide range of human behaviour" (Becker 1976, p. 5). What is this economic approach?

[E]veryone recognises that the economic approach as- sumes maximising behaviour more explicitly and ex- tensively than other approaches do.... Moreover, the economic approach assumes the existence of markets that with varying degrees of efficiency coordinate the actions of different participants ... so that their behav- iour becomes mutually consistent. Since economists generally have had little to contribute, especially in recent times, to the understanding of how preferenc- es are formed, preferences are assumed not to change substantially over time, nor to be very different be- tween wealthy and poor persons in different societies and cultures. Prices and other market instruments al- locate the scarce resources within a society and thereby constrain the desires of participants and coordinate their actions. In the economic approach, these market instruments perform most, if not all, of the functions assigned to "structure" in sociological theories (Becker 1976, p. 5).

Since these are the characteristic features of standard neoclassical economics, what is it that surprised so many commentators of Becker's work initially? It is the fact that he seeks a deeper

level at which preferences are stable, that he takes as the fundamental unit of analysis the household, which are considered not to be passive consumers but active productive units:

The preferences that are assumed to be stable do not refer to market goods and services, like oranges, au- tomobiles, or medical care, but to underlying objects of choice that are produced by each household using market goods and services, their own time, and other inputs. These preferences are defined over fundamen- tal aspects of life, such as health, prestige, sensual plea- sure, benevolence, or envy (ibid.).

Becker explicitly excludes the assumption of complete information from his set of basic assumptions; the optimal amount of information is an *explanandum* instead of part of the *explanans*. How much information a household will seek is the outcome of its assessments of the expected costs and benefits involved.

Opportunity costs were already mentioned above. Their centrality in Becker's economics is made particularly clear in the following passage, where they assumes the status of a methodological principle:[20]

When an apparently profitable opportunity to a firm, a worker, or household is not exploited, the economic approach does not take refuge in assertions about ir- rationality, contentment with wealth already required, or convenient ad hoc shifts in values (i.e., preferences). Rather it postulates the existence of costs, monetary of psychic, of taking advantage of these opportunities that eliminate their profitability—costs that may not easily be "seen" by "outsiders" (Becker 1976, p. 7).

Becker also makes it clear that his economic approach does not assume that all decisions are made consciously.

Over the years, Becker has applied his economic approach to problems that range from fertility, education and the use of time to crime, marriage and social interactions. Now what sort of results does it produce? I will give just one ex- ample, taken from Becker's earliest publication in this field: the analysis of racial and other discrimination. Blacks and whites in the USA are considered to be two "countries" who trade with one another. Each group has two factors of pro- duction, labour and capital, in different proportions. This makes the problem of discrimination susceptible to an ap- plication of the standard neoclassical theory of international trade. An important theorem of that theory is that, in case two countries have different comparative advantages, they can both improve their wealth by trading the commodities they produce. That means that barriers to trade are to the disadvantage of both

trading partners. So, if whites discrimi- nate against blacks (for instance on the labour market), not only do they harm the position of blacks, they also prevent themselves to fully benefit from their comparative advan- tages. If, as Becker observes, blacks retaliate by discriminat- ing against whites, they only make their own situation worse, as this further reduces the opportunities to increase their wealth using their comparative advantages.

In all its simplicity this analysis is both revealing and use- ful. Becker assumes that discrimination is not the result of social circumstances but a preference of individuals. What he is actually saying is: if you want to discriminate, that is your choice. But are you prepared to pay the price for it? He does not give a moral judgment on discrimination; he just shows what economic implications it has. By putting a price tag on discrimination, he makes an important contribution

to what has always been considered a purely moral argu- ment to which the answers were given in purely moralistic or ideological terms. Introducing the economic approach into the moral domain helps to make moral discussions better informed and more rational. For instance, if we take the preference for non-integration (or discrimination) of different ethnic groups as given, by using Becker's analyti- cal apparatus we may try to define the optimal amount of discrimination. Before the reader jumps to the moralistic conclusion that this is an unacceptable "economisation" of a social or moral problem, let me draw the parallel with what we may call the social problem. The social problem is how a great number of individuals may peacefully live together. This involves reaching an intricate set of compromises with one's fellow men: I like to cook meat on my barbecue but my neighbour does not like the smoke this causes. On the other hand, he takes great pleasure in the tall fruit trees on the border with my garden, while I regret that they take away the sun from my lawn. Conceptually, this problem could be made more tractable by applying an economic analysis; con- versely, if both my neighbour and me are satisfied with the existing arrangements, we may conclude that we have both reached an equilibrium between the costs and benefits of our neighbourhood.[21]

So what we see here is that, apart from the question of the explanatory value of the economic approach, it has the great benefit to provide the instruments with which to make po- litical and moral discussions more rational.

Becker's model of man

Even though Becker emphasises the fertility of the techni- cal apparatus of economics in shedding light on all human behaviour, (which is why he prefers to speak of the economic *approach*), his economics presupposes a clearly defined the- ory of human action. He summarises it as follows: "all hu- man behaviour can be viewed as involving participants who maximise their utility from a stable set of preferences and accumulate an optimal amount of information and other in- puts from a variety of markets" (Becker 1976, p. 14). As he has pointed out, this does not mean that they always do so consciously nor that all human behaviour is fully reducible to utility maximisation. For instance, the formation of pref- erences falls outside the scope of economics and economists should consult psychologist in order to know more about it. Becker also makes it explicit that other non-economic vari- ables influence

human behaviour—but always through their action on preferences and production possibilities.

So what results from the economics of Becker is a model of man as a social being—usually part of a household—with a stable and autonomous set of preferences who is actively involved in producing goods and services that maximise his well-being. The fact that his behaviour can be explained and predicted with the utility-maximising model does not neces- sarily imply that he consciously calculates all the expected costs and benefits—in the most general sense—of his be- haviour. Standing at the crossroads between markets, where costs are made visible and quantified by prices, and spheres of action where costs are less visible, not clearly quantified but nevertheless present (the opportunity costs to which only shadow prices can be imputed), man tries to find his way in life in such a way that his choices reflect an equilib- rium between the intensity and hierarchy of his preferences and the sacrifices that he is willing to make in order to satisfy his wants. Conversely, Becker's model of man can be read as framework that interprets human action as the outcome of conscious or unconscious choices but never as the result of irrational decisions. In the final analysis, Becker's idea of the human condition is identical to Sartre's: man is always en- gaged in choice and is fully responsible for the consequences of his actions.

III. CONCLUSION

The five authors whom I have discussed use five different models of man. Adam Smith has a theory that considers hu- man action as driven both by the pursuit of interest and by the innate desire for justice. For Jevons, man is motivated by the desire to attain the most pleasure with the least pos- sible sacrifices, which he tries to attain, in ideal conditions, by balancing the two rationally. Hayek sees man as a very irrational in the sense of under-informed planner for the future who bases his decisions on the way he perceives the world subjectively but who nevertheless follows the same decision model as Jevons'. For Simon, man is both irratio- nal in Hayek's sense and in the sense of almost never being capable of carrying out all calculations needed to arrive at a rational decision. Becker turns against this, trying to rein- stall the rational-choice model not only in economics but in the other social sciences as well. In all this, one should take account of the main problems these authors were trying to solve in their economics. Smith looked for an answer to the question what causes economic growth, Jevons wanted to unify all of economics by founding it on the theory of indi- vidual pleasure maximisation, Hayek wanted to explain—as did Smith in *The Theory of Moral Sentiments*—

why the ap-

parently anarchical pursuit of individual purposes by many millions of human beings does not result in utter chaos, Si- mon looked for a realistic explanation of human choice, and Becker wanted to extend the rational choice model to all hu- man phenomena.

What these metaphysics of human action have in com- mon is that man, by his behaviour—no matter how it is modelled—constructs himself and his environment, the lat- ter mostly as an unintended consequence of his individual actions (an idea that we find in Adam Smith and later in Hayek). This is similar to one of the main elements of Sartre's existentialism. The concept of radical choice of that philoso- phy can be found most consistently in Becker's economics, where everything, nothing excluded, is subject to rational choice. In that sense Chicago-School economics is the most existentialist of all five individualistic metaphysics. Another idea of Sartre's is that man "projects" himself, by which he means that we all, by choosing, construct our lives. Man as a planner is the basis of Hayek's economics, and it is worked out in his later social thought into the idea of path-depen- dency. Re-translated into philosophical terms this means that each of us, by making the choices that we have, create an individual, unique and unalterable personal history that is an ineluctable part of the set of influences on our current and future behaviour. This indicates a limit to Sartre's con- cept of radical choice: we cannot choose to undo our his- tory (although we may choose to ignore it or falsify it).[22] The economist who differs most from existentialism is Simon, for whom the psychological make-up of man limits the pos- sibilities of choice. Between Jevons and Sartre there seem to be few if any possibilities of comparison (although one could say that Jevons limits the choice set to those thing that bring us pleasure, or that he substitutes the pursuit of pleasure as the ultimate motive for human behaviour for Sartre's choice).

As we have seen, this story of economics is also the story of the relationship between economics and the other sci- ences of man. Adam Smith was one of the first to "liberate" economics systematically from its general philosophical framework, laying the foundations for economics as a sci- entific discipline in its own right. Jevons is one of the three authors who completed the marginal revolution, which consisted in founding economics on a theory of subjective choice. Contrary to what might be expected, though, he did not look for these foundations in psychology[23] but empha- sised that economics was the only discipline that could deal with hedonistic behaviour.

The reaction to these and other attempts to give econom- ics a prominent place in the landscape of the sciences of man

came from France, where Durkheim started his research programme to create sociology as an autonomous discipline. He was criticised by Hayek, who, in the elaboration of his economics into a general science of man and society main- tained that the right kind of economics, the one based on the individualistic tradition of the Scottish moral philosophers, was the one and only discipline capable of dealing with the explanation of coordination and social stability (Birner & Ege 1999). Whereas Hayek—somewhat inconsistently[24]— defends the monopoly of economics in explaining collec- tive phenomena and advocates a strict separation between psychology and economics, Simon's programme is a cordial invitation to both disciplines to contribute to economics:

[w]ith bounded rationality we need both a sociology and a psychology of the decision maker to predict be- havior—a sociology to tell us what information is likely to be available in memory at the time of decision and what needs and wants are likely to be prominent, and a psychology to tell us how the decision will be repre- sented and how elaborate are the calculations that the decision maker can and will carry out in order to make a choice (Simon 1997, p. 18).

Again, we see that the methodological question of the rela- tionship between the social sciences and the methodological *and* ontological questions of the status of man are intimately related to one another.

Finally, Becker not only revived the hard-core individu- alistic rational-choice theory that is the corner stone of neoclassical economics, he also applied it to all human and social phenomena. This "imperialism of economics", as it has been called (i.e., Radnitzky & Bernholz 1987), now has to vie with the more reductionist "psychologistic" approach by Si- mon and others.

Which metaphysical research programme, if any,[25] will "win" is hard to say. But let me conclude on a very hypotheti- cal note, one that illustrates the possible use of the metaphys- ics of individuals for the social sciences. Let us just assume that a systematic comparison has been organised between the Chicago approach and bounded-rationality economics. Let us suppose, moreover, that according to generally ac- cepted criteria[26] the confrontation has ended in a draw. In this (admittedly very hypothetical) case, an examination of the ontology that is implied by the two research programmes would be called for. I suggest that, in case the empirical re- sults are the same, we should prefer the programme with the

more realistic, richer and more suggestive and fruitful model of man or metaphysical theory of human action.

How difficult such a choice may be is illustrated by the fact that laboratory experiments and computer simulations have demonstrated that, in order to reach predictions about the functioning of markets one does not need to have the "rich" models of man as an intelligent, fully informed and perfectly rational chooser. The same regularities at the collective level (supply and demand, the convergence to one price etc.) that are arrived at by the "rich" models of, for example, Jevons and Becker, can be produced utilising very stupid and irra- tional individuals modelled on the computer or created in the laboratory.[27] Just on the strength of this little piece of evidence, should we prefer the "excess content" of Chicago economics as

ontologically more satisfying? That might be too rash a decision. Hayek, who emphasises individual man's irrationality, draws very important conclusions from this for the social and political system. It must be one in which no individual has the opportunity to impose his irrational preferences on all the others. But that is what Becker thinks a free market will do anyway. So, which theory should we prefer? A discussion of this problem would require another, much longer treatment, for which this is neither the place nor the time.

NOTES

1 Which he considered a metaphysical research pro- gramme until he judged it to be a falsifiable and hence scientific theory.

2 The truth conditions of counterfactuals are problematic and that is no different for this particular one.

3 There is much confusion, particularly in welfare eco- nomics, about ethical questions. I will limit myself to one brief comment. Many authors (such as Mark Blaug) sustain that the concept of Pareto optimality is an ethi- cal concept. They confuse the definition of a Pareto-op- timal situation (no-one can be made better off without someone else being made worse off) with the question whether or not such a situation is desirable. A careful analysis shows that many supposedly ethical judgments in economics are conditional statements of the form: *if* you want to achieve X, *then* do Y. These judgments are often enthymematic, i.e., the if-part is suppressed. This, added to the fact that the consequent is often formulat- ed as "you should do Y" has contributed to the confu- sion.

worth's *Mathematical Psychics*, published in 1881.

. 9 The basic idea is that markets and firms are alternative solutions to the problem of how to reduce transaction costs.

. 10 Hayek defends a non-atomistic individualism. Cp. Hayek 1949.

. 11 Hayek is the first economist to do so after Marshall. Cp. Hayek 1937.

. 12 Cp. also Hayek 1937: 46: "The statement that, if people know everything, they are in equilibrium is true simply because that is how we define equilibrium."

. 13 This is very similar to Popper's approach to social sci- ence. Watkins has coined the fortunate term "negative utilitarianism" for this.

. 14 In this context, "human action" may lead the reader to think of the book with that title that was published by one of Hayek's masters, Ludwig von Mises. While adopting many of Mises' economic ideas, Hayek was critical of the tautological character Mises claimed for economic theory. As against Mises, Hayek defended the empirical character of economics in his "Economics and Knowledge" of 1937.

23 The idea that economics should be given an autono- mous position was very much alive in the 1870s. Carl Menger, for instance, stressed the importance of subjec- tive perceptions in choice much more than his fellow marginal revolutionaries. Yet he, too, did not advocate a reduction of economics to psychology. This indepen- dence of economics from psychology was later elaborat- ed by Hayek. Cp. his *The Counter Revolution of Science*. This work was inspired by his own earlier research in the theory of mind and the psychology of perception, so that we may conclude that "he knew what he was talking about."

24 As I argue, for instance, in Birner 1996 and 1998. Hayek's insistence on the important of local knowledge and the position of the individual in the communica- tion and interaction structure of society leads naturally to the demand to describe that structure, as is done in network sociology.

25 It is of course possible that they turn out to be comple- mentary.

26 The idea that these exist makes my case even more hy- pothetical, as anyone who has followed the debates in the philosophy of science of the last 30 years will con-

. 4 Sartre wrote well before the truth about places like Guantanamo, where prisoners are kept from ending their lives, became known.

. 5 And of the primacy of economic solutions to social and political problems. In the 1980s, more than one govern- ment in South America called students of Friedman, the "Chicago boys", to help put a stop to rampant inflation and general social instability.

. 6 It is often thought that macroeconomics was created in 1936, when John Maynard Keynes published his *Gener- al Theory of Employment, Interest and Money*. That idea is mistaken.

. 7 For a brilliant discussion of the revolutionary character of the idea of a universe without God and of the intel- lectual changes in the 17th century leading up to it, see Israel 2001.

18 Lottery organisers—many of them governments—have known this all along. They always and only advertise how many people have won how much money. They never tell you how many have lost how much.

19 That is exactly what Karl Popper says, too. Cp. Popper 1972: 244.

20 He himself speaks of a postulate that completes or closes his system in a way analogous to the principle of conser- vation of energy in physics.

21 This conclusion may seem tautological. Becker speaks of the "almost tautological" character of the closure prin- ciple of introducing costs (Becker 1976, p. 7). Hayek had addressed the question whether economic explanations are tautological in his 1937 in reaction to Ludwig von Mises. I will let this interesting problem rest.

22 In an attempt to reduce cognitive dissonance, for exam- 8 As witnessed, for example, by Francis Ysidro Edge- ple.

15 Later, Hayek elaborates this idea of competition into an evolutionary theory of society. Cp. Birner 2001. firm.

. 16 Cp. his "The Facts of the Social Sciences" in Hayek 1949.

. 17 De Groot 1946. One of its results was that chess masters do not consider all the possible moves out of the enor- mous but finite number of possible moves. They con- sider only a subset of these, and select and evaluate that subset much faster than less advanced players.

27 Becker himself observes that the downward sloping de- mand curve can be derived without resorting to rational choice; the budget constraint is sufficient. Cp. Becker 1962.

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METAPHYSICAL MODELS OF MAN IN ECONOMICS