Philosophy Of Economics

A Positive Science?

The Definition of Economics Robbins (1932) defines "economics" as follows:

> Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses. (16)

Robbins prefers this definition to the traditional definition of economics as "the study of the causes of material welfare" (4).[1] He notes that, although the latter definition conforms to certain uses of everyday discourse, it fails to "exhibit either the scope or the significance of the most central generalisations of all" (5).

Robbins invites the reader to consider generalizations concerning wages. On the one hand, wages do not depend only on how they contribute to *material* welfare:

> Now it is perfectly true that some wages are the price of work which may be described as conducive to material welfare—the wages of a sewage collector, for instance. But it is equally true that some wages, the wages of the members of an orchestra, for instance, are paid for work which has not the remotest bearing on material welfare. Yet the one set of services, equally with the other, commands a price and enters into the circle of exchange. (5-6)

At the same time, wages are spent to buy not only material but also immaterial goods:

> The wage-earner may buy bread with his earnings. But he may buy a seat at the theatre. A theory of wages which ignored all those sums which were paid for "immaterial" services or spent on "immaterial" ends would be intolerable. The circle of exchange would be hopelessly ruptured. (6)

So, a theory of wages which does not account for immaterial goods is descriptively and explanatorily inadequate.

But even granting that "economic" has to do with material welfare only, and "non-economic" with non-material welfare, there would still remain a distinctively *economic problem*, namely that of *choosing* between these ends. This, in turn, should count as a sufficient reason to abandon the traditional definition. Consider the case of a single individual dividing his time between the production of real income and the enjoyment of leisure. In what exactly does the economic aspect of the situation consist?

> The answer is to be found in the formulation of the exact conditions which make such division necessary. They are four. In the first place, isolated man wants both real income and leisure. Secondly, he has not enough of either fully to satisfy his want of each. Thirdly, he can spend his time in augmenting his real income or he can spend it in taking more leisure. Fourthly, it may be presumed that, save in most exceptional cases, his want for the different constituents of real income and leisure will be different. Therefore he has to choose. He has to economize. The disposition of his time and his resources has a relationship to his system of wants. It has an economic aspect. (12)

Notice that all four conditions are necessary. For instance, multiple ends together with unlimited resources do not lead to any allocation problem, and thus to any economic behaviour. Also, the means must not only be scarce but also admit of alternative uses so that, again, a choice is called for. Furthermore, the ends must be of different importance, otherwise no choice is possible.

> But when time and the means for achieving ends are limited *and* capable of alternative application, *and* the ends are capable of being distinguished in order of importance, then behaviour necessarily assumes the form of choice. Every act which involves time and scarce

[1] Mill provides an influential example. He defines "political economy" (a locution that, in the nineteenth century, was used to refer indistinctly to what now are distinct subjects, such as micro- and macro-economics), as "[t]he science which traces the laws of such of the phenomena of society as arise from the combined operations of mankind for the production of wealth, in so far as those phenomena are not modified by the pursuit of any other object" (1836, 43).

> means for the achievement of one end involves the relinquishment of their use for the achievement of another. It has an economic aspect. (14)

In Robbins' definition, economics is the study of *an aspect of human behaviour*, namely means-end rationality, more precisely the rational choice between ends (whatever they are) and scarce means with alternative uses.[2] With this definition, *rational choice theory*—and its particular notion of 'rationality'—is put at the foundation of economic science.

The Method of Economics Robbins takes the theory of value as sufficiently well-established and considers what makes its generalizations true. He observes that they rest on neither history, which is a shaky basis of prediction, nor experiments, since the wide scope of the generalizations is not reducible to the narrow conditions of controlled experiments. Rather, such generalizations depend on rigorous deduction from assumptions concerning the economic aspect of human conduct:

> the foundation of the theory of value is the assumption that the different things that the individual wants to do have a different importance to him, and can be arranged therefore in a certain order. (...) From this elementary fact of experience we can derive the idea of the substitutability of different goods, of the demand for one good in terms of another, of an equilibrium distribution of goods between different uses, of equilibrium of exchange and of the formation of prices. (75)

Of course, if one is to draw reliable conclusions about specific facts, other assumptions are needed (on whether or not one's choices are influenced by those of others[3], on whether the market is monopolistic or competitive, on whether or not agents have complete knowledge[4], etc.) Still, the most basic assumption is key to the derivations.

For instance, if one is to infer the value of a good in the context of production, then one must consider how the cost of production affects the supply of the good. The main principle of explanation in this context is the so-called *law of diminishing returns*, which says that an increase in one factor of production results, other things being equal, in a marginal decrease in output.[5] This is because factors of production are imperfect substitutes of one another. Doubling one factor (e.g., labour) without doubling the others (e.g., land) does not result in doubling the product (e.g., corn). So, one can interpret the law as describing the choice among ends (amounts of product) given scarce means (total expenditure) with alternative uses (different factors of production).

And when one is to predict the quantity supplied, as in the theory of profits, one must calculate which supply of the good maximizes the expected profit of the firm, that is, the difference between expected revenues and costs of production.[6] In other words, one must calculate which means (expenditures) achieve the end (profit) best.

In all cases, economic science proceeds by deducing conclusions from assumptions, whose truth is evident and indisputable.

> The propositions of economic theory, like all scientific theory, are obviously deductions from a series of postu-

[2] Means-end rationality was already important for Mill, for whom "[political economy] is concerned with [man] solely as a being who desires to possess wealth, and who is capable of judging of the comparative efficacy of means for obtaining that end" (1836, 41). And yet, Mill did not define economics in terms of it. For Mill (see fn. 1), economics is still tied to the study of a domain, viz. the production of wealth, rather than an aspect of human behaviour.

[3] In non-strategic situations, agents choose independently of each other. In strategic situations, instead, agents' choices directly influence one another. The former situations are modelled by rational choice theory, the latter by game theory.

[4] In case of full knowledge, utility theory is applied. In cases of imperfect knowledge, due to risk or uncertainty, *expected* utility theory is applied.

[5] This is not to say that the overall output will decrease, only that each additional increase in a single factor of production, when the other factors are held fixed, increases the output less and less.

[6] To calculate the quantity for which the revenue-cost difference is maximal, one must set the rate of change to nil, that is, such that profits can neither increase nor decrease.

> lates. And the chief of these postulates are all assumptions involving in some way simple and indisputable facts of experience relating to the way in which the scarcity of goods which is the subject-matter of our science actually shows itself in the world of reality. The main postulate of the theory of value is the fact that individuals can arrange their preferences in an order, and in fact do so. The main postulate of the theory of production is the fact that there are more than one factor of production. The main postulate of the theory of dynamics is the fact that we are not certain regarding future scarcities. These are not postulates the existence of whose counterpart in reality admits of extensive dispute once their nature is fully realised. We do not need controlled experiments to establish their validity: they are so much the stuff of our everyday experience that they have only to be stated to be recognised as obvious. (78-9)[7]

In a nutshell,

> economic analysis turns out to be (...) the elucidation of the implications of the necessity of choice in various assumed circumstances. In pure Mechanics we explore the implication of the existence of certain given properties of bodies. In pure Economics we examine the implication of the existence of scarce means with alternative uses. (83)

Economics deduces its conclusions from the assumption that agents choose what they most prefer—consumers maximize utility and firms maximize profits.

The economic notion of rationality is *non-hedonistic*, that is, not grounded in a theory of pleasures and pains. Whether the ordering of preferences is associated to pleasures and pains is immaterial to the deduction of choices.

> Why the human animal attaches particular values in this sense to particular things, is a question which we do not discuss. That is quite properly a question for psychologists or perhaps even physiologists. (86)

Moreover, the economic notion of rationality is *formal* rather than substantive.[8] That is, it concerns the choice of means-end relations, and not the choice of the ends themselves.

Robbins' interpretation of economic methodology raises important issues. Rational choice theory rests on a number of axioms.[9] When the axioms are satisfied, preferences can be represented by a utility function. However, there is evidence that individuals and firms do not always act in accordance to the axioms (cf. Reiss, 2013, ch. 2). When this is so, their behaviour does not "maximize" utility. How important is this observation if one is to predict and explain economic phenomena?[10]

To make but one example, among the facts that economics purports to explain is the existence of the market mechanism, which successfully coordinates the preferences of many consumers and suppliers so as to determine prices that promote market clearing. However, there are results showing that market clearing obtains even with weaker assumptions than utility maximization (Simon, 1996, 32). So, the axioms of rational choice theory might be *unnecessary*. The weaker assumptions are insufficient to prove that the market equilibria are "optimal", that is, that they could not be altered in a way that makes everyone better off. But there is no strong evidence that equilibria are, in fact, optimal (Simon, 1996, 33), which again casts doubt on the necessity of the axioms.

In view of such considerations, can one regard rational choice theory as the secure foundation of economics? Are its axioms are satisfied? And to what extent? Robbins' own view is that:

> [t]he purpose of these assumptions is not to foster the belief that the world of reality corresponds to the constructions in which they figure, but rather to enable us to study, in isolation, tendencies which, in the world of reality, operate only in conjunction with many oth-

[7] This attitude with respect to economic theory is not uncommon. Mill, for one, believed that the economic laws (the laws of the predominant causal factors) are known by introspection, *a priori* (cf. Mill, 1836, 48-9).

[8] For a criticism of this view, see Reiss (2013, 51-2).

[9] Typically: completeness, transitivity, continuity and independence (more on this in the coming weeks).

[10] One could defend the theory by saying that it is describes not the way people actually choose, but the way they *ought to* choose. In that case, however, economics becomes *normative* (more below), and thus—arguably—less relevant to predicting and explaining.

> ers, and then, by contrast as much as by comparison, to turn back to apply the knowledge thus gained to the explanations of more complicated situations. (94-5)[11]

Alternative reactions go from denying the importance of the truth of the assumptions (this is Friedman's view; see WEEK 5), to formulating an alternative theory of rationality.[12] We'll return to the issue time and again in the rest of the course.

Positive vs Normative Economics In contemporary philosophy of economics, there is an important debate on whether the science of economics is, or should be, concerned with values and norms, or only with matters of fact (see, e.g., Gul and Pesendorfer 2008 and Hausman and McPherson 2008). It is helpful to distinguish between "positive economics", which aims to be descriptive, and is concerned with explaining/predicting phenomena from means-end relations (e.g., by utility maximization); and "normative economics", which is concerned with justifying policies (that is, ends) involving the preferences of several individuals, given positive knowledge of means-end relations.[13]

How are positive and normative issues related? One may distinguish two views: a view, according to which there is a mutual influence between positive and normative; and a view, according to which policies may be justified in a "purely positive" way (under the moral assumption that satisfying everybody's preference is morally good). The former view is relatively uncontroversial. By contrast, the latter is controversial. Robbins accepts the former but denies the latter.

Already Hume argued against the "naturalistic fallacy", viz. against the reducibility of "ought" (i.e., moral prescriptions) to "is" (i.e., descriptions of matters of fact) (cf. Wade Hands, 2012, 220). In a similar vein, Robbins argues for the distinction between normative and positive issues:

> Economics deals with ascertainable facts; ethics with valuations and obligations. The two fields of enquiry are not on the same plane of discourse. (148)[14]

Economics deals with means-end relations, not with justifying the ends themselves.

> We cannot say that the pursuit of given ends is uneconomical because the ends are uneconomical; we can only say it is uneconomical if the ends are pursued with an unnecessary expenditure of means. (145)

Robbins acknowledges that positive and normative issues are related in economics, in the sense that economics informs decisions, given preferences. At the same time, he holds that whereas means-end relations are objective and can be scientifically studied, once certain preferences are taken as given, preferences themselves are subjective—a matter of ethics, not of science.

> If we disagree about ends it is a case of thy blood or mine—or live and let live, according to the importance of the difference, or the relative strength of our opponents. But, if we disagree about means, then scientific analysis can often help us to resolve our differences. (150)

Economic science is "incapable of deciding as between the desirability of different ends" (152). Rather, its significance lies in that it "enables us to choose with full awareness of the implications of what we are choosing" (ibid.).

In particular, Robbins notices that certain attempts to justify policies that are based on positive economics make (illegitimate) use of the law of diminishing marginal utility.

> The Law of Diminishing Marginal Utility is held to provide a criterion of all forms of political and social activity affecting distribution. Anything conducive to greater equality, which does not adversely affect production, is said to be justified by this law; anything conducive to inequality, condemned. (Robbins, 1932, 136)

[11] Mäki's recent (1992) defence of economic laws as based on the isolation of tendencies is reminiscent of Robbins' view.

[12] Such as Simon's theory of 'bounded' rationality; see (Simon, 1996, chap. 2) and references therein.

[13] Normative economics is that branch of economics at the interface with political science that uses microeconomic techniques to assess the effects of policies on welfare—that is, on "individual well-being" (cf. Reiss, 2013, 214)—in order to provide justifications for such policies (for a brief introduction, see Hausman 1992, ch. 4).

[14] In contrast to normative economics, ethics is (also) concerned with *unconditional* reasons for the choice of the ends, and reasons not based on individual welfare.

Intuitively, policies that redistribute wealth are motivated as follows. Since utility diminishes marginally, the rich's increase in utility that results from an extra x of income is smaller than the poor's increase in utility that results from the same extra x of income. And since x is more useful to the poor than to the rich, it should be redistributed between them so that more of it goes to the poor.

The problem with this reasoning, for Robbins, is that it is fallacious, as it presupposes interpersonal comparisons of utility. However, "*[t]here is no means of comparing the magnitude of A's satisfaction as compared with B's*" (139-40):

> it is one thing to assume that scales can be drawn up showing the order in which an individual will prefer a series of alternatives, and to compare the arrangement of one such individual scale with another. It is quite a different thing to assume that behind such arrangements lie magnitudes which themselves can be compared. (138)

For instance, although it makes sense to say that I prefer strawberries to oranges and you prefer oranges to strawberries, it makes no sense to claim that I prefer strawberries to oranges more than you prefer oranges to strawberries, and that our overall utility increases more when my preference, and not yours, is satisfied. As a consequence, any policy aimed at increasing "social utility" by appeal to the law of diminishing marginal utility is *unjustified*.[15]

We'll return to the role of normative considerations in the development of general equilibrium theory in Week 11. In many other sessions, however, the leading question shall be: Is a positive science of economics possible at all?

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[15] Welfare economists typically accept this, but still believe one can reach positive conclusions as regards normative issues, without relying on interpersonal comparisons of utility, for instance by means of cost-benefit analysis.