

CHAPTER VI

GENERAL CHARACTERISTICS OF JEVONS' TYPE OF THEORY

Treatment of Value

In the preface to The Theory of Political Economy Jevons wrote:-

"In this work I have attempted to treat Economy as a Calculus of Pleasure and Pain The Theory of Economy thus treated presents a close analogy to the science of Statical Mechanics, and the Laws of Exchange are found to resemble the Laws of Equilibrium of a lever The nature of Wealth and Value is explained by the consideration of indefinitely small amounts of pleasure and pain, just as the Theory of Statics is made to rest upon the equality of indefinitely small amounts of energy."¹

Apparently, a very outstanding, differentiating characteristic of Jevons' type of economic theory that contrasted with classical political economy is the

¹ W.S. Jevons, The Theory of Political Economy, 5th. ed., p. vi-vii.

different treatment of value. Jevons' main purpose was to substitute for Mill's Theory of Value the doctrine that "value depends entirely upon utility."² This would imply that Jevons entered upon an analysis of demand as a factor in determining exchange values, whereas Mill and the other classical writers had put their emphasis upon the analysis of cost.

Jevons, however, failed to explain thoroughly the function of cost variations in value determination. This oversight may well have been intentional.

In analyzing demand Jevons had undoubtedly introduced the psychological factor as his starting point. "An examination of the nature and intensity of man's wants," he maintained, "shows that this connection between them gives to Political Economy its scientific basis."³ This does not necessarily mean that he identified himself with any particular system of psychology, but merely because he wanted to develop a subjective theory of value and exchange.

His method of approach was, therefore, one

² W.S. Jevons, Ibid., p.1.

³ W.S. Jevons, Ibid., p.42.

of "psychological individualism." He pointed out that economic action is based upon estimates of utility, or ideas of satisfaction to be gained. "In the simple acts of barter the whole thing is a question of direct estimation of utility It is with the direct personal estimates of utility that the economist starts."⁴

It may be of interest to note that Jevons went back to Jeremy Bentham in his choice of a psychological foundation, not because the latter himself had contributed much to economics, but because he had formulated with considerable precision the notions about human nature.

Scheme of Work

Jevons' scheme of work is another differentiating characteristic of his type of economic theory. He did not deal with as complete a system as Mill, partly because he was not interested in the same problems and partly because of his narrower conception of political economy.

Adam Smith in The Wealth of Nations covered a very wide range of subjects, ranging from Value and Distribution to Public Finance, etc. Ricardo narrowed

⁴ W.S. Jevons, The Principles of Economics, p.16.

the discussion and considered Distribution as the most important problem in political economy, though he also dealt with Money and Taxation elaborately. When we come to John Stuart Mill, we again have a far more elaborate scheme of treatment than any other classical economist. Mill had successively dealt with the production of wealth, a topic on which Smith had laid much emphasis but which Ricardo neglected; with exchange, the subject in which both Smith and Ricardo were interested and with which they dealt rather fully as under the general theory of value; with distribution, the probable future of the working classes, and the revenue of the state, etc.

Jevons, however, did not consider such a very wide range of subjects as the classical economists. The central feature of his work is on exchange, while the question of distribution is also discussed at length. Discussion on public revenues and expenditures is only incidental, while the famous problem of population is definitely left out of his work. For Jevons, the great problem of the increase of population as compared with the increase of food supply is a matter of no concern to the economist. The theory of production, public revenues and expenditures, the theory of consumption, and a wide range of other subjects,

were in his eyes not only legitimate but very important matters for the economist to consider. He believed, however, that this science as a whole would be developed more rapidly if we practised the principle of division of labour. That is primarily why he contracted his field of study by restricting himself to a fundamental range of problems.

Static Problems

Jevons undertook to work out the problems of exchange and distribution relating to a "static state" so as to render possible a purely scientific analysis, based upon the hypothetico-deductive method in investigation and reasoning, and in exposition and solution, upon a mathematical method. When so worked out it would give a set of economic theories, the validity of which could not be challenged, but they would be theories which would not explain economic phenomena actually encountered in a society which is changing in all ways - in population, accumulation of capital, techniques of production and political institutions, etc.

To reach the whole truth about economic phenomena, however, these fundamental static investigations relating to the "static state" have to be supplemented with another series of dynamic studies, as, for instance

those which the historical economists had been doing. Confining himself to static problems, Jevons was able to develop what is known as the abstract or pure economic theory. This is another characteristic of his work.

Analysis

At this juncture, it may help us to appreciate Jevons' type of work if we examine a little further some of the fundamental concepts underlying his whole Theory of Political Economy. I shall not elaborate on the actual contents of these concepts, but merely bring out the significant and characteristic points.

a) Theory of Pleasure of Pain

Bentham said that pleasure and pain had seven dimensions which must be taken into account by people working the social sciences: intensity, duration, futurity, certainty, purity, and extent. Jevons, however, limited himself to the circumstances of intensity and duration, and considered the other dimensions as either irrelevant to the solution of economic problems or beyond quantification.

Whereas Bentham found it necessary to have a scheme for measuring pleasures and pains for the kind of social science that he was trying to develop, Jevons

on the other hand, did not employ any units for measuring the intensity of pleasures, because he said we could not measure these quantities. But the obvious question is: how can we use pleasure and pain to explain what people are doing if we cannot measure them? Jevons seems to suggest that we do not measure the pleasure as a force which is going to push a person in a certain direction, but having observed that a person goes in a certain direction we infer the amount of his pleasures he has obtained. In other words, we measure pleasure and pain indirectly, by its influence upon our actions. If we have already acted, then we can measure the different pleasures by adopting different lines of action, but there is only one particular line of action which gives us the greatest pleasure among all other possible lines of action.

Evidently, Jevons' conception of a unit of measure for pleasures and pains is directly borrowed from Bentham's felicific calculus, which attempts to explain why men do certain things according to that pleasure-pain scheme. Because of this Jevons' type of theory has been much criticised because it is based explicitly upon a hedonistic foundation provided by Bentham.

Moreover, Jevons had described this theory as

"the mechanics of utility and self-interest,"⁵ and argued that a true economic theory could only be attained by going back to the great springs of human action - which arise in the course of our attempt to satisfy our material wants.⁶

Professor Lionel Robbins remarked that the link which psychological hedonism in Jevons' theory had not merely been ignored but even deliberately repudiated.⁷ In modern economics, he argued, there is no theory of pleasure and pain, for we are concerned simply with the logic of choice.

Professor Higgins, who also took up this point, thought otherwise. Jevons' unqualified hedonism, he argued, appears to be a dangerous foundation for a science, but on closer examination it reveals that Jevons placed the very broadest of interpretations upon the hedonistic principle.⁸ For, Jevons explained, "Call any

⁵ W.S. Jevons, The Theory of Political Economy, 5th. ed., p.21.

⁶ W.S. Jevons, Ibid, Appendix III, p.304

⁷ L. Robbins, op. cit., p.6

⁸ B.H. Higgins, "W.S. Jevons - A Centenary Estimate in The Manchester School, Vol. VI. No.2, 1935, p.104.

motive which attracts us to a certain course of conduct, pleasure; and call any motive which deters us from that conduct, pain; and it becomes impossible to deny that all actions are governed by pleasure and pain."⁹

b) Final Degree of Utility

It may be noticed that Jevons had simplified the application of Bentham's felicific calculus drastically, and by doing so, he had developed Bentham's scheme of analysis in one very important direction, that is, the addition of the idea of utility¹⁰ to the idea of accounting for behaviour in terms of pleasure and pain. This important addition that Jevons makes to the whole analysis is not total utility and final

⁹ W.S. Jevons, The Theory of Political Economy, 5th. ed., p. 26.

¹⁰ Jevons accepted Bentham's definition of utility. "By utility is meant that property in any object, whereby it tends to produce benefit, advantage, pleasure, good, or happiness (all this in the present case comes to the same thing), or what comes again to the same thing to prevent the happening of mischief, pain, evil, or unhappiness, to the party whose interest is considered: if the party be the community in general, then the happiness of the community: if a particular individual then the happiness of the individual." (An Introduction to the Principles of Morals and Legislation, Pars. III, V, XIII, Chap. I.)

utility, but the final degree of utility.¹¹

For Jevons, the "final degree of utility" is a mathematical ratio ($\frac{du}{dx}$), which is equal to the increase in the quantity of feeling which is obtained by the addition of final increment of a stock of goods, divided by the increase in the physical quantity of goods. This concept should be distinguished from the more recent concept of "marginal utility" which is just a quantity of feeling obtained from the use of last added increment to the stock, but not a ratio. These two concepts, while used for the same theoretical purpose are, from a strictly logical point of view, quite different things. This is a subtle but not unimportant difference.

c) Theory of Exchange

For Jevons, the central problem of economics, we may recall, is the problem of exchange value. His

¹¹ Both Leon Walras and Karl Menger, (Austrian economists) supported the same theory of value as Jevons, the chief point of difference being one of terminology. Walras often used the highly concentrated and therefore rather ambiguous term "rarity" (rarete) instead of Jevons' "final degree of utility." Menger, on the other hand, approached his subject by way of an elaborate analysis of the economic significance of goods and he established the doctrine of the different "orders" of goods, a very characteristic part of his theory. Menger's idea, however, is in substance the same as that of Jevons, though not formulated with the same amount of precision.

theory of exchange value rests upon the theory of utility, which in turn rests upon the theory of pleasure and pain.

Jevons gives a clear account of the conditions necessary for a competitive market, summarising them in his Law of Indifference. But the introduction of the concept of 'Trading Bodies' in the working of the market mechanism seems to confuse his theory of exchange. For, while he defines a market as consisting of 'two or more persons' dealing in two or more commodities, without discussing how differently the market mechanism will work if there are only two parties and two commodities, or very many more, his concept of the 'Trading Bodies' seems to be intended to make one model cover both two-party and two-commodity barter, and a competitive market in a monetary economy. Consequently, neither case is formulated with precision.

Jevons writes:

"The keystone of the whole Theory of Exchange and of the principal problems of Economics, lies in this proposition - The ratio of exchange of any two commodities will be the reciprocal of the ratio of the final degrees of utility of the quantities of commodity available for consumption after the exchange is completed."¹²

This, in essence, is Jevons' proposed solution of the problem of exchange.

Defining exchange as the substitution of a greater utility for a smaller, Jevons states clearly and correctly the conditions necessary for exchange to take place. Jevons states that for exchange to take place, the relative marginal significance of the commodity received must exceed that of the commodity given up in the case of each party to the exchange. For instance, if U_1 be the utility of A's book to A, U_2 be the utility of A's book to B, V_1 be the utility of B's book to A, and V_2 the utility of B's book to B, then, concludes Jevons, "the conditions of exchange are simply $V_1 > U_1$ and $U_2 > V_2$." ¹³

Attacking labour and cost of production theories of value Jevons concludes that labour once spent is gone and lost forever, and thus has no influence on the future value of any article. However, he continues, though labour is never the cause of value, it is in a large proportion of cases the determining circumstances. This is the case because value depends solely on the final degree of utility, which varies as

we consume more or less of the commodity, but to get more or less of the commodity, we spend more or less labour in obtaining a supply. In other words, labour affects supply, and supply affects the degree of utility, which governs value, or the ratio of exchange. This idea is briefly and brilliantly summed up as follows:

"Cost of production determines supply;

Supply determines final degree of utility;

Final degree of utility determines value."¹⁴

Later economists, however, have found various difficulties with this chain of reasoning. Marshall, for instance, has criticised that this is just a more elaborate analysis of the process by which cost of production determines value, as Ricardo and Mill had contended. Professor Higgins, too, thought that there appeared to be something slightly naive in this chain of causation, because cost of production alone could not determine supply.¹⁵

Jevonsian Method of Measuring Utility

The Jevonsian method of measuring utility seems

¹⁴ W.S. Jevons, op. cit., p. 165.

¹⁵ B.H. Higgins, op. cit., p. 106.

to be based on the belief that we can rank not only utilities but also differences in utilities. It seems to suggest that it is possible to say not only that we prefer a particular X to a particular Y and the Y to a Z, but also that our preference of the X over the Y is less than that of the Y over Z. If this method of measurement of utility is acceptable, then it implies that we can attach numerical values to utilities without any further appeal to intuition. To quote Dr. Ozga's example, "if the individual finds his preference for the motor car over the bicycle greater than that of the bicycle over nothing (the motor car, the bicycle and nothing being in addition to what he has got in the zero position), (then) this means that if utility of nothing is zero and utility of motor car is unity, utility of the bicycle must be something between zero and 0.5. There must be, however, a good which is exactly in the middle between the motor car and nothing, the individual's preference of this good over nothing being exactly the same as his preference of the motor car over it. Utility of this good is 0.5.¹⁶ We may proceed further in this way, so that we can make the limits

¹⁶ S.A. Ozga, "Measurable utility and probability - A simplified rendering, in The Economic Journal, Vol. 66, 1956, p. 421.
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on either side of the bicycle move closer and closer, and determine the latter's utility with as much accuracy as we like.

It is obvious in this example that the Jevonsian method does not require any intuitive measurement of either utilities or the differences in them. We just need to rank the differences, the ability to say that we prefer one good to some other more, exactly as much or less than we prefer the latter to yet another good, and so on, until we determine the ultimate utility of a good.

Dr. Ozga feels that this kind of measurement is not a scientific one, at least not in the modern sense of the word. This is because "ranking of differences in utility requires the ability to project oneself in two different situations, one before having got the bicycle and one after having got it; and as in fact nobody can be in two situations at the same time, the ranking cannot be verified by experiment or observation."¹⁷