

## Some Reflections on Keynes's "Choice of Units"

Dick Staveley\*

Keynes clearly indicates that part of his intention in writing *The General Theory of Employment, Interest and Money*<sup>1</sup> is to bring "present-day economic theory ... back to reality, whilst reducing to a minimum the necessary degree of adaptation" (146). The two concepts which he believes will achieve this aim are user cost and the marginal efficiency of capital. The former he introduces to "define the *income* of the entrepreneur" (53). The stated intention for user cost is that it "enables us ... to give a clearer definition than that usually adopted of the short-period supply price of a unit of a firm's saleable output" (67). The marginal efficiency of capital relates to the supply price of a capital asset (135). In the adaptation of present-day economics to reality it relates to long-period supply price (68). Keynes, in short, adopts the classical theory's perspective of the individual firm which seeks to maximise income or profit; the perspective, that is, of the representative firm.<sup>2</sup> (The distinction between micro-economics and macro-economics is not a Keynesian one.)<sup>3</sup>

To permit him to derive his 'unambiguous' definition of income (54) 'which comes very close to Marshall's' and 'corresponds to the *money* value of Professor Pigou's most recent definition of the National Dividend' (59; my emphasis), Keynes found it necessary only to choose 'two fundamental units of quantity, namely quantities of money-value and quantities of employment' (41). This choice of money-value enabled him to aggregate employment in a way in which output could not be numerically aggregated as output was not homogeneous (45). While to ordinary understanding labour is as clearly lacking in homogeneity as is output of various commodities, employment could be aggregated by applying money-value to the remuneration of an hour's employment of ordinary labour and calling the unit in which the quantity of labour is measured the labour-unit; and the money-wage of a labour-unit, the wage-unit (41). Keynes's definition of income as the decisive factor which entrepreneurs seek to maximise in offering various quantities of employment is given in money-values. It is not given in *real* terms.

There is a certain ambiguity in Keynes's understanding of this requirement for an economic science arising from the manner in which he believes he has satisfied while at the same time misunderstanding how the classical economists endeavoured to meet it. Hansen draws attention to the fact that the wage-unit is a monetary unit: "In all modern economies, in fact, the monetary unit is employed as the standard of measurement in the market place. But for purposes of *economic analysis* the monetary unit will not do. And the reason (well-recognized by the early founders of the science) is that economic analysis proceeds by setting up functional relations between variables."<sup>4</sup> Hansen proceeds to explain why the monetary unit cannot serve as a mathematical device in economic analysis even though he does not reveal the substance of the early founders' understanding of the actual relation between the monetary unit (or nominal value) and the real magnitude (or real value). Functional relations, Hansen observes, only have meaning for economic analysis when the variables are measured in real terms, not monetary units. The data, understandably, are "cast in money terms". It therefore becomes necessary to reduce the monetary magnitudes to real terms; in other words, to correct the nominal changes, i.e., reduce monetary magnitudes to *real* magnitudes (40).

When he indicates how the nominal or monetary changes are corrected to convert them to real magnitudes of value by presenting the modes adopted by two 'schools' of thought, Hansen implicitly adheres to the modern convention rather than to the analysis of the real property or substance of a commodity, including money, of the early founders. The two modes adopted are tantamount to assuming constant purchasing power of money. In his 'brief summary of the theory of employment' Keynes assumes "that the money wage and other factor costs are constant per unit of labour employed". By inference, as the money-wage is the basis for the wage-unit, the wage-unit and therefore the value or purchasing power of money must also be assumed constant. But he adds, "(T)his simplification ... is introduced solely to facilitate the exposition", "the essential character of the argument (being) precisely the same whether or not money-wages, etc., are liable to change" (27). In other words the value of money itself can change without affecting the essential character of the argument!

Hansen's statement of the modes adopted to convert money changes or values to real magnitudes reveals that the process is that used in constructing price, wage and other money indices of proportional changes. A base year is adopted and adjustments made for changes in subsequent time periods. It is a practice followed in constructing statistical tables of ratios and other information which can be numerically represented. In his Chapter 4, the purport of which Hansen overlooks, Keynes remarks on "incommensurable collections of miscellaneous objects" which he 'placed within the field of historical and statistical description', a purpose "for which perfect precision - such as our causal analysis requires ... is neither usual, nor necessary" (29-40). If the essential character of the argument is not harmed by changes in money-wages, etc., the modes recommended by Hansen for converting monetary magnitudes to real magnitudes are not needed to present it as Keynes expounded it. However, if incommensurable collections may be relegated to the field of statistical description, may not measurable collections facilitate economic analysis, if they provide "suitable material for the differential calculus" (40)? Keynes found Pigou's use of a similar method of representing monetary changes as changes in real or physical value a covert device (40); and in commenting on the "pitfalls of a pseudo-mathematical method" which makes everything "a function of a single variable" he again indicated how Pigou "assumed that the actual money-rate of wages divided by the price of wage-goods can be taken to measure the real rate demanded" (272, 275). In short, the single variable of which everything is a function is "real money" or money as a magnitude of real value. Because Keynes chose the wage-unit which is a money-unit in "an attempt to clear up certain perplexities ... which most impeded my progress in writing this book" he must have considered the unit free of the defects of which he accuses Pigou (37). That means that the unit (and the other concepts for which he uses it) must be quantitatively precise, free from vagueness and ambiguity; suitable for the differential calculus and incur none of the pitfalls of a pseudo-mathematical method (cf., 297-8). What Hansen considered would not do for the purpose of economic analysis, Keynes considered satisfactory. If Keynes erred in considering the wage-unit suitable for economic analysis his understanding of the requirement for this science clearly must differ from that of Hansen and the science's early founders. Perhaps Keynes unwittingly questioned the possibility of such a science.

In a letter to Harrod where he held, contrary to Robbins, that "economics is essentially a moral and not a natural science" he also wrote "it is the essence of a model that one does *not* fill in real values for the variable functions. To do so would make it useless as a model. For as soon as this is done, the model loses its generality and its value as a mode of thought ... Economics is a science of thinking in terms of models, joined to the art of choosing models which are relevant to the real world".<sup>5</sup> To add to the riddle, the opening chapter of the *G.T.* emphasises its general character in contrast to the alleged special case of classical theory. If an inference is warranted linking these two reflections of Keynes, the classical theory fills in

real values for the variable functions of its model and in doing so its value as a mode of thought is lost because "the characteristics of the special case assumed by the classical theory happen not to be those of the economic society in which we actually live, (and) the result (is) that its teaching is misleading and disastrous if we attempt to apply it to the facts of experience" (*G.T.*, 3).

Perhaps Keynes was good at mathematics without knowing the principles of mathematics understood as the entity presupposed by the mathematical method itself. In mathematics a function is "a variable quantity regarded in its relation to one or more other variables in terms of which it may be expressed, or on the value of which its own value depends".<sup>6</sup> Also the mathematical meaning of "value" is not the same as its original meaning which related to exchange, but is "the number or quantity represented by a figure or symbol".<sup>7</sup> It follows that the variables in a mathematical function, given the interdependence of their values, must be expressed in common quantities or numbers. That, no doubt, is why mathematics begins from conventions assigning to the terms used specific meanings and in consequence Euclid's parallel lines cannot meet; odd numbers cannot be even numbers; and irrational or imaginary numbers cannot be rational or real numbers. Hansen, we observed, said it was necessary to correct the nominal changes, meaning the changes in monetary magnitudes, to derive real magnitudes of value. Keynes, on the other hand, implied that the wage-unit was suitable for the differential calculus, and on the other, that real values are not needed for variable functions; and this could be implied from his criticism of Pigou's pseudo-mathematical method, because if everything is a function of a single variable everything must be expressed in terms of the value in which the single variable is given. Otherwise, if the quantity of the value given in the single variable was itself variable how could functional relations assume any consistency or determinacy?

Let us try to resolve the matter by beginning as it were at the beginning. As Smith observed nominal value is the money price of commodities, it is not their real price which is their price in labour.<sup>8</sup> Nominal, as in apparent, comes from the Latin word for "name". The Greek equivalent of *nomen* is *onoma*, and *onoma* shares a common root with the Greek word for convention or custom, *nomos*. Its kindred meaning of "usage", being the common usage or practice of a people or locality assigned it the English equivalent to "law"; and the Greek word for currency or current coin is *nomisma*; and to labour the point, the money which is actually used in market exchange is called legal tender.<sup>9</sup> The conventional character of money should be manifestly intelligible because various pieces of minted coin, printed notes and other pieces of paper as well as certain plastic cards are all used in the great variety of exchange relations. Despite the variety of forms assumed each has a common homogeneous property, namely differentiation by quantity or number. If, as Smith avers, the real price is the price in labour there is a conspicuous difference between commercial or money price and the economist's real price; and if money price has to be corrected to make it a magnitude of real value for the purpose of economic analysis, ordinary usage differs in meaning from the economist's usage. Smith remarked that in the case of the ordinary buyer or seller, money is "a plain and palpable object; the other (labour commanded or real value) an abstract notion".<sup>10</sup> It is in this distinction and its significance that the difference between Pigou, for example, and Keynes may be found. Real value or real magnitudes are mathematical terms or concepts and when applied to economic phenomena characteristic of market exchange like price, wages, profit, rent and interest, they assume a meaning which purports to assign to these various forms of exchange-value the true understanding of the cause of their value. Because the word real retains its mathematical usage, the implication is that the truth regarding the determination of value in exchange is accessible by the genuine and not pseudo-mathematical method. The reality of real price and so on can be grasped only by somehow synthesising the mathematical method with the economic phenomena whereby the mathematical measure of exchange,

money, becomes representative of the real entity which money measures and thereby transforms money into a real magnitude of value. This procedure is remarked by the convention still followed by this century's economists which, though usually done tacitly - as is characteristic of technicians - is in principle the same as that adopted by Marshall. The only difference due to the proliferation of "symbolic pseudo-mathematical methods of formalising ... economic analysis" is the use of mathematical symbols other than number designating price (297). The symbols nevertheless denote constant purchasing power of money.<sup>11</sup> To achieve the transition from nominal or monetary magnitudes to real magnitudes Marshall stated: "... we may throughout this volume neglect possible changes in the purchasing power of money. Thus the price of anything will be taken as representative of its exchange value relatively to things in general, or as representative of its general purchasing power".<sup>12</sup>

A real number, quantity or value is the opposite of an imaginary or impossible number, quantity or value. A real number is a rational or natural number (one which can be expressed without a radical sign like the square root). It denotes a precise quantity or magnitude. Yet real price or value, according to Smith is an "abstract notion" (and Jevons assigns to "utility" the same cognitive standing). Mathematics is an abstract science which uses concepts agreed upon to be real and not imaginary or impossible, i.e. they are defined in this antithetical way. Real magnitudes are distinguished from nominal ones, like money-price. Nominal magnitudes exist in name only; they are not the actual or real thing.<sup>13</sup> Money, however, is something "plain and palpable", i.e., it can be touched. It is perceptible to the senses. Abstract notions like labour commanded or real value and utility though they "can be made sufficiently intelligible, (are) not altogether so natural and obvious" as money.<sup>14</sup> These abstract notions, being abstractions which do not rely on sense perception which as Hobbes avowed was but "seeming or fancy",<sup>15</sup> by being intelligible must be intelligible only noumenally. The archetype for all such abstract notions is Euclid's definitions, of which only the first need suffice to illustrate: "A point is that which has no part".<sup>16</sup>

The synthesis of the mathematical method with the common phenomenon of market exchange whereby the reality becomes the purely noumenal world is inadequately grasped by Keynes, as may be illustrated from this well known quotation (*G.T.*, 16): "The classical theorists resemble Euclidean geometers in a non-Euclidean world who, discovering that in experience straight lines apparently parallel often meet, rebuke the lines for not keeping straight - as the only remedy for the unfortunate collisions which are occurring. Yet, in truth, there is no remedy except to throw over the axiom of parallels and to work out a non-Euclidean geometry. Something similar is required to-day in economics".

The classical theorists, or more correctly, those who properly understood the suppositions of a science of economics and the entity on which they were based intended precisely this, to make a geometry of economics as Hobbes had done with political science. These modern philosophers did so in their revolution against the Socratic wisdom of Plato, Xenophon and Aristotle. Prior to Euclid's compilation of the *Elements*, Plato, in various dialogues had shown the limitations of mathematics, especially in purporting to explain the human things; but this demonstration of mathematics nevertheless showed how, properly understood, mathematics was universally useful in the practical, mechanical arts as well as in theoretical arts like astronomy.<sup>17</sup> Keynes (probably unconsciously) mimics this demotion by alluding to sense experience which perceives parallel lines meeting, without being aware that modern science begins from the assumption of radical skepticism which distrusts the senses. Perhaps it is also knowledge originating in sense experience or common sense which trusts sense perception that leads him to consider that the wage-unit, even though a monetary unit and not a magnitude of real value, was suitable for the precision required by quantitative analysis; and overcame the difficulty he saw resulting from filling in real values for variable functions. Similarly, if the unit is chosen by the art which discerns models relevant for the

real world Keynes's real world cannot be the noumenal world of Euclidean geometers but "the economic society in which we actually live" (3). This world is the world of practical affairs where men need to consult sound experience, again originating in sense experience, and endeavour to make sound judgments or prudent decisions.

The attempt to work out a non-Euclidean economics was bound to fail for the same reason as his choice of the wage-unit and his introduction of the concepts of user cost and the marginal efficiency of capital failed. The wage-unit foundered on his misunderstanding on the classical use of "real" in its mathematical or noumenal sense as will be demonstrated in considering his formulation of the two postulates of the classical theory of employment. The two concepts chosen to adapt the classical theory to reality failed due to this same misunderstanding of the noumenal world as the *real* world. The corollary from this is the attempted synthesis of theoretical and practical knowledge, as though the latter was merely applied theory and constituted the "proof" of the theoretical hypothesis. This synthesis or fusion rejects entirely any autonomy for practical wisdom or prudence. Marshall's representative firm, for example, abstracts from the particular circumstances of individual firms to what is *normal* according to the law of large numbers. It abstracts therefore from what is relevant for practical men to exercise deliberate choice. The sense in which practical wisdom or prudence is autonomous is that only the man on the spot, responsible for making the decision, can have the disposition, experience and knowledge of the relevant circumstances to decide correctly. Autonomy is lost only when deciding ceases to be the result of deliberation and is a mere mechanical response to a predetermined set of conditions which elicit it.

Keynes himself indicates in various places how practical men's decisions can be influenced by theoretical men. For example in discussing the policy of local authorities and boards governing sinking funds he uses quotation marks for "financial prudence" and "sound finance" to question the prudence or soundness of the policy in the circumstances of Great Britain in 1935; and in indicating how pyramid-building, earthquakes, wars, and "digging holes in the ground known as gold-mining" may commend themselves to "our statesmen" if (their) education "... on the principles of the classical economics stands in the way of anything better" to serve to increase wealth. He also refers to the ready acceptance of unemployment relief as a wasteful form of loan expenditure which is due to this education in financial prudence.<sup>18</sup> This is the sense in which prudence or practical wisdom is moulded by theoretical men. Fifty years later there are as conspicuous examples of political leaders pursuing policies dictated by firmly held opinions whose origins may be traced via intermediaries back to Adam Smith and John Locke. The intermediaries are well-known academic and professional economists who act as advisors to governments or express their views in public forums. The nature of the media presentation precludes reasoned argument, but the institutions with which these economists are associated lend authority to what are in actuality simplified if not simplistic assertions. They become propagandists for some policy whereas the theory from which it is derived has not necessarily been proven. They resemble modern-day Meno's who accept as common knowledge technical definitions whose suppositions are not self-evidently true. Such is the way with all technicians.<sup>19</sup> This is the respect in which practical men's opinions as to what is right are influenced by theoretical men. The authoritative opinions of any society invariably have originated in the academies; i.e. with theoretical or contemplative men of the highest order and not only with "some academic scribbler of a few years back" (383).<sup>20</sup>

Keynes's primary concern for his art of choosing a model relevant to the world in which we actually live is indicated by the ordering of the titles of his *G.T.* The classical theory of employment was at variance with the conspicuous evidence of the Great Depression. In seeking to remedy this defect in the classical theory and adapt it to reality he preserved the

Marshallian - Pigovian approach of the representative firm. The classical theory of employment was to be adapted to reality by considering the factors actually taken into account by the representative entrepreneur in deciding what level of employment to offer in order to produce that output which would maximise his income. It was part of this intention which obliged Keynes to define unambiguously entrepreneurial income, by including user and supplementary cost in the firm's calculation of net income.<sup>21</sup> This definition allowed him to differentiate net income, as the dividends distributed to the owners of the firm, from the rate of interest as the price of money or of liquidity-preference; a price whose level was mainly influenced, in a money-market which was not regulated by central authorities, namely government, by the activities of professional speculators. It was this unclassical and non-scientific activity of speculating in money with a view to capital gain that was the most destabilising factor in a modern capitalist economy which encouraged avarice.

The separation of the money market from the commodity market allowed Keynes to attempt to formulate the postulates of the classical theory of employment to cover the case of involuntary unemployment as the more general case in contrast to the special case of full employment assumed by classical theory. The separation of the two markets and the definition of involuntary unemployment dispel the optical illusion of the fallacious supposition "that there is a nexus which unites decisions to abstain from present consumption with decisions to provide for future consumption" (21). This nexus, known as Say's law, underlies the whole classical theory (19, 26); and requires that the two postulates of the theory of employment, strictly understood, apply only to the case to full employment (16).

Keynes's lack of understanding of the scientific character of the classical theory is first displayed in his formulation of the two postulates of the theory of employment. Keynes preserves the skin of the classical framework; he expresses the aggregate supply function as a demand for employment (25). The wage unit was introduced with this end in view. This homogeneous money-unit enabled him to aggregate employment so that the aggregate supply function could have a "definite meaning" (45; emphasis added). The aggregate supply function for the economy as a whole could not be aggregated, "since  $\sum 0$ , is not a numerical quantity" (45). In other words Keynes implicitly repudiates the classical notion of *real* cost or *real* price if there is no homogeneous unit which is the common source or origin of all commodities including money and which may be assigned a fixed value for the purpose of aggregation or quantification - or simply - measurement. If no such unit exists, comparable to the atom, molecule or cell, and capable of precise measurement and without which *no* commodity can come into being, a quantitative science of economics is impossible. Equity in exchange can only be expressed as a scientific relation if commodities exchange proportional to the quantity of the common unit or agent contained or metamorphosed in each; and, to repeat, including the money commodity, because unless money has a fixed quantity of the common unit in a given denomination of the currency, it cannot be a precise measure of the same homogeneous unit in commodities for which it is exchanged. In a strangely naive way Keynes thought the money - or wage - unit would achieve this purpose.

By expressing the aggregate supply function as the demand for employment Keynes intended to consider the more general case of the theory of employment of which the classical theory was only a special or limiting case. To make a trite observation: output can only be supplied by demanding employable resources including labour. The employer both demands and supplies their employment and reciprocally the employed factors supply the resource since they are demanded. This simple observation respecting the exchange-relation, when considered in the light in which Keynes presented it reveals the paradox of Keynes. His formulation is in terms of stating the two postulates of the classical theory of employment and claiming, legitimately, that "realistically interpreted" they allow the classical theory to be 'best regarded as a theory of distribution in conditions of full employment' (15, 16). The classical

theory was a theory of full employment, not allowing for involuntary unemployment, but only voluntary and frictional unemployment (6). As such it must have included in its exposition, if only implicitly, an understanding of how "involuntary" unemployment could be eliminated. The classical theory followed the modern scientific understanding of things and regarded the exchange-relation as a mechanical, determinate, reflex action in accordance with the Newtonian physics. Keynes followed the common sense or Aristotelian understanding; but he adheres to the tradition of classical economic theory by subsuming the entrepreneur's supply of labour under the postulate giving the demand schedule for labour; the wage is equal to the marginal product of labour and the labourer's demand for employment is the postulate giving the supply schedule for employment. "The utility of the wage when a given volume of labour is employed is equal to the marginal disutility of that amount of employment" (5, 6).

In his formulation of the two postulates he omits any identification of wage or product as a real or money magnitude. In the case of the first postulate or demand schedule for employment he explains that "the wage of an employed person is equal to the value which would be lost ..."; and the context reveals that it is the value of output. As the value is that which would be lost by reducing employment "by one unit", it follows that the employment schedule of the entrepreneur represents the maximum he can offer while continuing to earn normal profit by not infringing 'the familiar proposition of decreasing returns in the short period ... which governs real wages' (17). As the value of the wage and of the output are equal it may be thought that the postulate is expressed in the *real* magnitudes of classical economic theory; but it has already been shown that despite his subsequent assumption making the money-wage and other factor costs constant, his denial that the essential character of the argument depends on this assumption is a tacit admission that he does not understand the sense which classical theory intends for "real". Nevertheless on his own explication of the meanings of the terms in his formulation of the two postulates they can be shown to constitute an identity similar to that resulting from the terms being *real* magnitudes.

In the case of the second postulate he makes clear that the utility of the wage which is equal to the marginal disutility of the employment is the real wage; but the utility of the real wage depends on "the estimation of the employed persons themselves", that is, it is a subjective estimate. And he continues: "Disutility must be here understood to cover every kind of reason which might lead a man, or a body of men, to withhold their labour rather than accept a wage which had to them a utility below a certain minimum" (6).

Neither utility nor disutility is considered in the technical sense of abstract notions denoting a definite quantity. It is a fine example of how a technical term which is taken from ordinary discourse and refined to have a particular technical meaning nevertheless retains for the technician the colloquial meaning of ordinary discourse. It might be imputed to Keynes that he understood from Marshall how the subjective quality of utility was transformed by the mechanical psychology presupposed by Marshall's *Principles* into an objective and therefore quantitative measure of the force of desire; but if he understood this how could he accuse Pigou of covertness? The relation between a quantitative change effecting a qualitative change so that what *appears* as something subjective (or qualitative) is in actuality objective (or quantitative) on the one hand, and monetary and real magnitudes of value on the other is traceable to the same source.

An explanatory digression is accordingly appropriate. Jevons assigns to "utility" the same status as Smith does to labour-commanded or real value. "Next after utility the word commodity will be most frequently used. It may be defined as anything possessing utility. The utility ... is a circumstance, accident or quality; being an abstract notion, it cannot physically exist except as the quality of a concrete thing".<sup>22</sup> To understand this dual aspect of Jevon's identification of utility Marshall is helpful: "Man cannot create material things. In the mental and moral world indeed he may produce new ideas; but when he is said to produce

material things, he really only produces utilities; or in other words his efforts and sacrifices result in changing the form or arrangement of matter to adapt it better for the satisfaction of wants".<sup>23</sup>

That is intelligible once one accepts modern physics. The thing-in-itself is but matter and motion or energy; and matter (energy) can neither be created nor destroyed. The motion or energy of man in producing utilities is called labour, both mental and physical. Labour is painful, requiring efforts and sacrifices and Marshall calls "these efforts and sacrifices ... the *real cost of production* of the commodity".<sup>24</sup> Utility is a "circumstance, accident or quality" in this same physical science sense. It is but an application of John Locke's category of "secondary qualities", meaning that the properties whereby a commodity is useful to an individual consumer is relative to him; they do not reside or inhere in the thing-in-itself, because that is but matter and motion or energy.<sup>25</sup> Being re-arranged matter, the "utility" of a commodity must also possess the same attributes or primary or real qualities as matter or energy, namely of being measurable quantities or forces. That is why utility is an abstract notion (or a "determined idea") in Locke's usage.<sup>26</sup> By abstracting from commodities' concrete forms as table or apple or anything else we are left with what makes all commodities measurable by price and is common to all commodities as distinct from free goods which are acquired without labour, namely their *real* quantifiable or primary quality, utility.<sup>27</sup> The economic concept of utility is capable of being measured precisely by money because it is a "real idea" as distinct from the qualities perceived by the senses. Being a real idea and measurable by constant money it is a real magnitude, and an appropriate concept for economic analysis. (It should go without saying that it is a Euclidean or scientific concept.)

Disutility connotes negative utility because as Marshall says: "Utility is taken to be correlative to Desire or Want".<sup>28</sup> Marshall, so far as I can discover, does not himself use the term, disutility. Utility seems to embrace both the affirmative and negative aspects of its correlative, desire, because "we speak of the measurement of desire by the action to which it forms the incentive",<sup>29</sup> and "... there is a general agreement that all incentives to action, in so far as they are conscious desires at all, may without impropriety be spoken of shortly as desires for "satisfactions" ... when occasion arises for referring to the aims of all desires whether appertaining to man's higher or lower nature. The simple antithesis to satisfaction is "dissatisfaction": but perhaps it may be well to use the shorter and equally colourless word 'detriment' in its place".<sup>30</sup>

Desire, that is, has a dual aspect and as it is correlative to utility, the *real* concept "utility" in Marshall embraces both sides of the exchange relation for the simple reason that the individual in his conscious deliberation preceding action to which desire provides the incentive "reckons up the advantages and disadvantages of any particular action before he enters on it".<sup>31</sup> The "economist does not claim to measure any affection of the mind in itself, or directly; but only indirectly through its effects". In 'thus measuring a mental state, as men do in ordinary life by its motor force or the incentive which it affords to action' the economist 'follows indeed in a more patient and thoughtful way, and with greater precautions what everybody is always doing everyday in ordinary life'.<sup>32</sup> As it is desire which forms the incentive to action, and conscious desires by being conscious can only be affections of the mind constituting a mental state, it follows that desire itself is a measurable motor force or 'quantity of incentives' "which can be estimated and measured with some approach to accuracy; and which are therefore in some degree amenable to treatment by scientific machinery".<sup>33</sup>

Desire is a measurable force or quantity and is correlative to utility or want. Compare Hobbes's account of 'the interior beginnings of voluntary motions': "... small beginnings of motion, within the body of man, before they appear in walking, speaking, striking and other visible actions, are commonly called endeavour. This endeavour when it is toward something



which causes it, is called appetite or desire; the latter being the general name; and the other often times restrained to signify the desire of food, namely *hunger* and *thirst*. And when the endeavour is fromward something, it is called aversion".<sup>34</sup>

Marshall follows the same scientific mechanical psychology of Hobbes as indicated by the guiding passion of felicity which is the counterpart in human beings of the physical principle of inertia: "*Continual success* in obtaining those things which a man from time to time desireth, that is to say, continual prospering, is that men call Felicity; I mean the felicity of this life. For there is no such thing as perpetual tranquillity of mind, while we live here; because life itself is but motion, and can never be without desire, nor without fear, no more than without sense".<sup>35</sup>

Whether we preserve Marshall's dual meaning for utility of both demand and supply or adopt the more recent dichotomy which makes disutility the antithesis of utility or whether we refer to satisfactions and dissatisfactions or detriments or the simple utilitarian distinction of pleasure and pain, it should be clear that the economist's abstract notion, being a "real idea" is a quantity, and therefore being measured by constant money, i.e., number, is a *real* magnitude.<sup>36</sup> This is also conveyed by the modern utilitarians' use of a felicity calculus of pleasures and pains. It is intended like the mathematical calculus to deal in quantities or symbols connoting numerical values.<sup>37</sup> To return from the digression: it is improbable that Keynes understood utility in the sense of the abstract notion which is required for the noumena world to constitute the real world accessible to human understanding and which is invoked to convert magnitudes of nominal value into real magnitudes. Similarly, real wage is not the purchasing power of the money-wage, but a quantity of exertions and sacrifices; and so also is the marginal product. As Keynes denied that aggregate output was a numerical quantity, the evidence confirms the suspicion about his understanding of the classical theory on its own level (45). Further evidence is provided in his deductions from the two postulates, which, as presented are necessarily equal to each other making utility equal to its reflex, disutility (and this, as is implicit in Marshall, is in harmony with the laws of mechanics).

Keynes deduces "only four possible means of increasing employment" (7). In the second he identifies marginal disutility of labour with real wage. In the third he uses "Professor Pigou's convenient term for goods upon the price of which the utility of the money-wage depends" so as effectively to equate real wage with "the marginal physical productivity of labour in the wage-goods industries" which is thereby equated with the marginal disutility of labour. This is further confirmation that Keynes understands "real wage" in the colloquial sense while Pigou understood it in the classical sense. This is evident from the context in which these deductions are made. The second postulate, which gives the supply schedule for employment - namely the equality of the utility of the wage and the marginal disutility of the employment - "realistically interpreted, corresponds to the absence of 'involuntary' unemployment" (5, 6, 15). There are two forms of unemployment possible on this interpretation, voluntary and frictional. Included in the former is "the open or tacit agreement amongst workers not to work for less" than the existing money-wage (8). The money-wage, that is, commands a real wage higher than the marginal physical productivity of that amount of employment and entrepreneurs earn less than normal profit. The inference from the deduction that employment increases from an increase in the marginal physical productivity of labour is that equilibrium is restored between real wages and profits. On Pigou's understanding, equilibrium is achieved only when there is no such obstacle to free competition as arises from combinations of workers to withhold their labour. Stated more generally: once conditions of perfect competition exist the money-wage is equal to the real wage which is equal to the marginal physical product of labour and the utility of real wage equals the money-wage which equals the marginal disutility of labour. This makes clear the noumenal sense of utility and its reflex. As the digression showed utility is simply transformed disutility or

alternatively, quantities of efforts and sacrifices are expended in re-arranging the matter to produce utilities.

This cannot be the way Keynes understands the relation between money-wages and real wages because he finds "the workers, though unconsciously, are instinctively more reasonable economists than the classical school" (14). They resist reductions of money-wages but don't strike "on every occasion of a rise in the cost of living" (15). They don't make the "illicit assumption" of the classical school "that the wage bargain determines the real wage" (13). In short, they do what Smith said was more natural for the greater part of people, estimate the real wage by the purchasing power of their money-wage. They must be more reasonable economists by instinctively trusting what their senses perceive and ordinary understanding and experience inform them is best. It remains to be considered why only voluntary and frictional employment are admissible by the classical theory. But as this is a consequence of perfect competition ensuring equality between disutility and utility or of efforts and sacrifices with satisfactions why does the conscious desire of man depend upon perfect competition to ensure that he obeys the law of mechanics which decrees that matter/energy shall be neither created nor destroyed? To have even an inkling of the mechanical solution proposed by the classical school one needs to consider the moral postulate of modernity, as discovered by Machiavelli. Without this it is futile to try to understand how Keynes could define involuntary unemployment so as to be consistent with the two postulates of the classical theory of employment, despite the fact that those postulates, "realistically interpreted", are incompatible with involuntary unemployment.

Paradoxically the moral postulate derives from man's natural selfishness. "It is a thing truly very natural and ordinary to desire to acquire."<sup>38</sup> The selfish nature of man can be morally defensible only if justified by the condition of human life. Allusion has already been made to this: Marshall's derivation of utilities from the re-arrangement of matter by man's incurring efforts and sacrifices. In its earlier formulation by writers like Locke, it was labour which was the source of anything useful; "Nature and the Earth furnished only the almost worthless Materials, as in themselves". Due "to the penury of his condition" and "the necessity of subsisting" man's "Wants forced him to labour".<sup>39</sup> Smith traces the "real price of everything" to its origin in labour which "was the first price, the original purchase money that was paid for everything";<sup>40</sup> and "the toil and trouble of acquiring everything" which is the sacrifice labour pays does not make the semantic difference vary markedly from Marshall's "efforts and sacrifices". Anything useful and convenient for the enjoyment of life is wholly due to the labour expended on producing abundance and the necessity of so acquiring more and more is immanent in man's nature.<sup>41</sup> It is this moral postulate which provides the rationale for Say's law. As man is naturally acquisitive he will always desire more and different than he currently has. This is how economic, rational or consistent man is still defined: he always prefers more to less.

Keynes failed to understand this foundation principle of classical economics, even though he acknowledged that Say's law underlay the whole classical theory (19). The natural motion of man is selfish desire which is made morally defensible by the penury of his original condition imposed by a malevolent or indifferent Nature. From this condition competition for what is needed for self-preservation naturally arises. The classical theory inherited from the first political economists, Hobbes and Locke, the desirability of finding a suitable arrangement for channelling this competitive motion of man into peaceful outlets beneficial for all. Like desire itself the motion is two-fold; productive in re-arranging matter to make it more useful and consumptive - ingesting matter to restore the energy expended in production. Consumption is negative production or the negation of labour creativity. Peaceful competition is rational and consistent with conscious desire which precedes deliberation resulting in action. It is so by dint of natural right. If all men enjoy the natural right to self-

preservation and the means to it, the means must be consistent with all mankind being preserved.<sup>42</sup> Preservation depends on nourishment and nourishment in turn on labour energy. If the increase in the supply of nourishment, conveniences, and comforts of life depends only on labour re-arranging the material from which these commodities result, then the only obstacle to the wealth of any nation arises from the lack of encouragement to extend the division of labour to all sorts of industry; because the division of labour effects the greatest improvement in the productive powers of labour.

The necessity immanent in the matter of man, i.e., his flesh and blood or bio-chemistry, sanctions peaceful competition which obliges all men to do what is necessary for their preservation - either to labour oneself or justly to command by private contract, freely entered into, the labour of others.<sup>43</sup> As men are naturally acquisitive they will always desire more and more and therefore will covet the one commodity whereby they can always be confident that others will accept it in exchange for the truly useful necessities and conveniences of life.<sup>44</sup> Whatever is competitively produced by generating this universal instrument of commerce, money, as the payment to the factors of production, provides the means to demand whatever is supplied. Because money is so esteemed for its value due to its scarcity there will always be borrowers willing to pay interest for its current use in commanding productive resources. The natural acquisitiveness of man when channelled by means of peaceful, free competition into commercial enterprise will always ensure that those willing to work for a reward *equal* to their contribution can be employed. How competition by its own workings effects this equitable result is never proven; but the moral postulate of modernity underlies Say's law as the nexus between present and future consumption and the whole theory of classical economics. When Keynes says that this nexus is based on a fallacious supposition, he effectively accuses the whole modern project (21).

The nexus known as Say's law requires that the two postulates of the classical theory of employment, as formulated by Keynes, contribute an algebraic identity. Supply always necessarily equals demand at full employment level.<sup>45</sup> Keynes, consistently with his misunderstanding of the classical supposition respecting man's natural acquisitiveness, desires to fill in the gap left by the classical theory of employment. He uses the two postulates to define not what follows from them and Say's law but "involuntary unemployment". "Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money-wage, both the aggregate supply of labour willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the existing volume of employment" (15).

His divergence from the language of classical economics should be apparent, because as should now be evident, once one makes the assumption of constant purchasing power of money or by some other professional convention reduces monetary magnitudes to real terms it becomes a redundancy to differentiate money-wage from real wage.<sup>46</sup> The use of Professor Pigou's "convenient term" does not obscure the fact that the proposition on which Keynes's definition of involuntary unemployment rests is that which satisfies the classical theorists' criterion for "voluntary unemployment", to wit, following a fall in real wages the demand for employment should automatically increase in keeping with "the familiar proposition that industry is normally working subject to decreasing returns in the short period" (17). Keynes, nevertheless, preserves the postulate resting on this familiar proposition and throws over the second which gives the supply schedule of labour, because contrary to Say's law the marginal disutility of employment for a lower real wage which governs the entrepreneur's willingness to supply employment is less than that 'certain minimum utility of a man, or a body of men withholding their labour rather than accept that lower real wage' (6). The classical theory errs in concluding that full employment equilibrium is normal. As this conclusion is deduced from the moral postulate proclaimed as Say's law which underlies the whole classical

economics the postulate must itself be wrong; and the economic order to which it gave rise be misguided. And furthermore policies adopted by governments on the advice of adherents to a fallacious theory cannot affect the public interest.

Keynes's definition of involuntary unemployment was intended to extend to classical theory the more general case relevant to "the characteristics ... of the economic society in which we actually live" and not to "the special case assumed by the classical theory" (3). By adapting the postulates to fit every level of employment and not the special case of full employment which can only occur when "by accident or design" "the propensity to consume and the inducement to invest stand in a particular relationship to one another" he effectively demonstrated that the classical theory's "tacit assumptions are seldom or ever met" and that the logic on which its carefully erected superstructure is premised is false (28, 378). The logic does not correspond "to the actual world" (378). The actual world is not one where the propensity to consume and the inducement to invest is guided, like self-interest, by an Invisible Hand, to promote the public interest at the same time, but one where "central controls", namely the State or government is needed to design the desired level of employment (379). Keynes's great achievement was that he showed how this could be done within the framework of liberal democracy (as well as in totalitarian tyrannies) by identifying the actual causes of employment and unemployment. It is regrettable that in his choice of units to analyse the general theory of employment he lacked understanding of the logic which attributes to money a mathematical sense of number whereby it assumes the status of a *real* entity and ceases to be the convenient, conventional instrument for facilitating exchange.

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By way of an epilogue it may be helpful to allude to the parallel between Keynes's choice of units and their Socratic counterpart in order to discern the difference of orientation. Mathematics makes a distinction between real and imaginary numbers. These technical definitions are noetic, purely intellectual constructs. As a higher status is accorded the real, reality relates entirely to the mind. This follows from the consideration (anticipated in antiquity, as Socrates' use of Empedocles' definition of colour reveals) that the world of sense perception is not the real world. In modernity, as said, this follows from Cartesian skepticism; radical doubt respecting the reliability of sense-perception. If the real world is the world confined to the human intellect because sense experience is but seeming or fancy, and if furthermore, as the moderns in general contend this faculty is acquired and not natural, the real world is indeed confined, paradoxically, to the visible world. The human mind has no transcendental support, and similarly man's humanity lacks this support and is entirely of human creation. Nevertheless to make this visible world intelligible, by assigning to it its laws, man needed to invent a science which was entirely independent of sense-perception; and as has been indicated the archetype of this was Euclidean geometry. In short, the real world is not the visible world but the invisible world of the mind and what is postulated as real and sufficiently intelligible is in this radical sense purely intellectual constructs. Whatever ideas man possesses are likewise wholly human.

In contrast, according to the Socratics while man through the faculty of reason may participate in knowledge of the ideas or species or classes of things the ideas are not of human origin. One could grossly oversimplify and say they are of divine origin. In any case they transcend men's minds though by this faculty he can nevertheless grasp them. The manner in which they may be intelligible indicates the great difference between antiquity and modernity. In *The Republic*<sup>47</sup> Socrates presents the manner in which, by dialectic, knowledge of the idea of the good (and the ideas or forms in general) is accessible by way of allegories or metaphors. Humans start from sense-perception from which we receive certain impressions or images and these images received from the visible or sensible world come to be associated with the objects sensed. From first seeing a dog or cat we come to recognise from the particular

instances the class or species to which the respective names are assigned. While language is conventional the faculty on which it depends is natural because we can only think by using words or language. From sensing particular things which always convey the same image the next stage in cognition is therefore trust. But as we ascend from perception of particulars to classes of things we make a transition from the visible world to the intelligible world, because the abstraction to the classes or species of things is distinct from the recognition and image that comes directly from sense-perception. But the recognition of particular members of a species already presupposes that we have knowledge of the species as species. So there is both an ascent and a descent and this Socrates refers to as *dianoia*, thought. Whenever we apply the knowledge we have learnt to something, the kind of thinking we exercise is figuring out the means. This is the "how?" question and it is this kind of thinking which characterises practical life. There is still another level of the soul which is most distinctive of man and this Socrates calls intellection and it is directed to the ideas or forms themselves. Simply expressed - because we are able to differentiate the various genera and species and observe that they are generated out of likes rather than unlikes, the question of the generation of the species in themselves arises. This is the "what is?" question. What is the manner of being of man? As the particular members of the various species presuppose the existence of species (*eidos* or *idea*) in order for the particular visible members to come into being and exist, the idea in itself cannot have come into being in the same way. It must exist in a manner which while this knowledge of its manner of being is intelligible to the human mind the ideas in themselves are beyond the mind which is not capable of grasping them with perfect clarity; and this world or realm of ideas existing in their perfect form, eternal and unchanging, was considered by the Socratics as the *real* world. As the human mind itself existed by nature but could participate in this way in seeking for knowledge of the real world, the real world could not be a human construct like mathematics. In the Socratic dialectical understanding there was a harmony between the visible and intelligible worlds and the latter in its highest form of intellection (*noesis*) was similarly in harmony with the transcendental world of ideas. Keynes's attempt to construct a non-Euclidean economics was closer in spirit to the ancient philosophers than to those classical economists whose theory he tried to adapt to reality.

\* Formerly Department of Economics, University of Queensland, 24 Kookaburra Street, Brookfield, QLD 4069.

## Notes

- <sup>1</sup> London: Macmillan, 1949. References to the *General Theory* are given in the text as they occur.
- <sup>2</sup> Alfred Marshall, *Principles of Economics* (New York: The Macmillan Company, 1952), IV, XIII, 2.
- <sup>3</sup> There is one passage, at least, in the *G.T.* which could invite this bifurcation of classical economic theory. It is the paragraph on pages 378-9.
- <sup>4</sup> *A Guide to Keynes* (New York: McGraw-Hill, 1953), 40.
- <sup>5</sup> *Collected Works*, Vol. XIV, 296.
- <sup>6</sup> *The Shorter Oxford English Dictionary* (Oxford: Clarendon Press, 1959), 761.
- <sup>7</sup> *Ibid.*, 2332.
- <sup>8</sup> Adam Smith, *The Wealth of Nations* (New York: The Modern Library, 1937), 30 (Book I, Ch. V).
- <sup>9</sup> Aristotle, *Politics*, 1258 b6-8. A current convention in economics to achieve the analytic purpose (which Hansen realises is essential) of reducing monetary magnitudes to real magnitudes adopts the French word for legal coin, *numéraire*.
- <sup>10</sup> *Ibid.*, 32 (Book I, Ch. V).

<sup>11</sup> Keynes, as should become evident, is an exception which may be taken as proof that the convention is only tacitly followed.

<sup>12</sup> *Ibid.*, 11, 11, 6; see the edifying note appended by Marshall; and observe his remark that gold and silver or both are generally adopted in civilised countries. Cf. Hobbes, *Leviathan*, Ch. 24, para. 10; and Smith, *Ibid.*, Ch. IV, para 5. Note also *G.T.* 235-6.

It is interesting to notice that the characteristic which has been traditionally supposed to render gold especially suitable for use as the standard of value, namely, its inelasticity of supply, turns out to be precisely the characteristic which is at the bottom of the trouble.

"That is, in times of uncertainty, gold is hoarded and the reduction in liquidity, due to the rise in gold-money's "own" rate of interest, stifles the inducement to invest and results in unemployment". This is another instance of Keynes's failure to understand the purpose gold money served as an invariable measure of *real* value for a quantitative science of economics.

<sup>13</sup> This usage of modern nominalism is traceable to Hobbes. Cf. *Leviathan*, Ch. 4 where he reduces the diversity of names to four general Heads. Because speech is an acquired or derived faculty for Hobbes the proper classification of names must be ordered to accord with the natural faculty which distinguishes men from the other animals; namely, causal, deductive or analytical-synthetic reasoning (Ch. 3, para 5; Ch. 5, para 6). This is originally (and necessarily) the mental discourse which proceeds without the use of words (Ch. 3). The proper signification of words, once speech is invented and this fact is properly understood, must relate to the original motion in man and all other things. Hence first in rank are the names assigned to matter or body; and second in rank are the names assigned to qualities the accidental properties of the particular matter or body from which different kinds of motion arise. Life, that is, is living motion and heat is hot motion from burning bodies. These names are called "abstract", but they relate to the particular matter; i.e. the peculiar chemistry (or biochemistry) of the matter or body. It is these abstract names which are so crucial for understanding a science of economics; because once human understanding is knowledge of material causation economics becomes the true science of man, namely the discovery of the causes of the motion of man directed to preserving the matter in which that motion (life) is immanent.

<sup>14</sup> Smith, *ibid.*, 29-30 (Book 1, Ch. V).

<sup>15</sup> *Ibid.*, Ch. 1, para 4. The third of Hobbes's four categories of names relates to this phenomenon. Anything perceived by the senses is not 'reckoned the thing itself but the idea of it in the fancy'; and to things so perceived, the sensible qualities of things, not being in the thing itself which is but matter (and motion) are given names which are but "names of fancies" (Ch. 4, para 17). It is possible to understand from this perspective how Smith could regard the *real* value of a commodity to be the labour (or motion) commended to transform the matter of which it is composed into something useful by being agreeable to the senses or fancy. This abstract notion explains the real cause of the thing, the transforming agent, labour quantity.

<sup>16</sup> Cf. Aristotle, *Metaph.*, 1035 b32.

<sup>17</sup> For example *Meno* and *The Statesman*.

<sup>18</sup> *General Theory*, 100-1; 128-131.

<sup>19</sup> Plato, *Meno*, 76a; Jacob Klein, *A Commentary on Plato's "Meno"* (Chapel Hill: University of North Carolina Press, 1965), 65-66.

<sup>20</sup> See Leo Strauss, *Natural Right and History* (Chicago: Chicago University Press, 1953), 2, 308.

<sup>21</sup> See my essay, "Keynes's Adaptation of Classical Economics: an Interpretation" in *The Australian Journal of Politics and History*, Vol. 24, No. 2, 1983, 378-391.

<sup>22</sup> W.S. Jevons, *The Principles of Economics*, Ch. III, Sec. 5.

<sup>23</sup> *Ibid.*, II, III, 1.

<sup>24</sup> *Ibid.*, V, III, 2.

<sup>25</sup> *Essay on Human Understanding*, Book II, Ch. VIII, paras. 8-10, 22-23; and cf. para. 17. The primary qualities "... may be called *real* qualities, because they really exist in those bodies".

<sup>26</sup> *Ibid.*, "Epistle to the Reader".

- 27 Marshall, *ibid.*, II, II, 1.  
 28 *Ibid.*, III, III, 1; cf., II, III, 1, where Marshall regards consumption as negative production.  
 29 *Ibid.*, I, II, 3.  
 30 *Ibid.*, I, II, 2, n.1.  
 31 *Ibid.*, I, II, 3.  
 32 *Ibid.*, I, II, 1.  
 33 *Idem.*  
 34 *Leviathan*, Ch. VI, paras. 1-2.  
 35 *Leviathan*, Ch. VI, para. 55.  
 36 It should be noted that while Marshall adopted what has become the conventional device for reducing monetary magnitudes to real magnitudes, namely, of assuming the constant purchasing power of money, he nevertheless adhered to gold as the "natural" money; and followed the tradition of the discoverers of political economy. Gold is "natural" money because its supply is almost perfectly inelastic and therefore a given amount of it always contains the same quantity of utility or toil and sacrifice. See note 12 and cf., Smith, *ibid.*, 41, (Book 1, Ch. 5, paras 28-29).  
 37 Cf. Socrates' ironic account of the art of measurement of pleasures and pains both present and future in *Protagoras*, 354c-357c. Unlike Plato's Socrates, the contemporary utilitarians treat a calculus of pleasures and pains as though it was indistinguishable from a mathematical calculus.  
 38 *The Prince*, translated by Leo Paul S. de Alvarez (Irving: University of Dallas Press, 1980), 17 (Ch. III, para 14).  
 39 *Two Treatises of Government*, ed: Peter Laslett (New York: Mentor, 1965), II, 43, 32, 46, 35.  
 40 *Ibid.*, 30 (Book 1, Ch. V).  
 41 Locke, *ibid.*, II, 37, 41, 42.  
 42 *Ibid.*, II, 6, 7.  
 43 Cf. Marshall's "man as he is: not ... an abstract or 'economic man'; but a man of flesh and blood" (*ibid.*, I, II, 7). He doesn't speak of body and soul.  
 44 Locke, *ibid.*, II, 37, 45, 48.  
 45 Cf. *General Theory*, 28. The classical optimum is the universal and not a special case of the general theory of employment.  
 46 It is one of the great ironies of Keynes's *General Theory* that with the practical perspective from which he views the deliberate choices of workers, entrepreneurs, savers and investors he adopts what, in effect though not in essence, is an Aristotelian approach to practical arts. It is quite evident in the case of this definition of involuntary unemployment that he follows what workers do. They assess their real wage or standard of living by the purchasing power of their money-wage in the particular circumstances prevailing at the time. The worker's understanding of real wage is not the economist's. Keynes's concepts of user cost, supplementary cost, the marginal efficiency of capital and liquidity-preference may also be similarly regarded. That is why "expectations" figure so prominently in the *General Theory*. Can there be any place for expectations, sensibly understood (and not according to the convention of "rational expectations"), in a determinate science like "economics analysis" where functional relations between economic variables are expressed in *real terms*? The tragedy behind the Keynesian irony is that unlike Aristotle, who considered the autonomy of practical wisdom or prudence incompatible with a theoretical science of practice, Keynes from his practical perspective attempted (like an Hegelian dialectician) to reconcile irreconcilables, and rather than restoring to reality what was in itself purely and simply an imaginary Euclidean world he provided the means for the Hegelian synthesis of contemporary economics which perhaps makes it as great a threat to the liberal democracies Keynes sought to make secure in the 1930's as the undermining of the Western Tradition that nihilistic, positivistic social science has so far achieved. (See Aristotle, *Eth. Nic.* 1132a48; 1140b24-1145a12.)  
 47 See especially 511c-e.