

THE FOUNDATIONS OF KEYNES' METHODOLOGY: THE GENERAL THEORY*

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Keynes said that the readers of his book would have to endure a 'struggle of escape' if his assault upon them was to be successful. This paper is about his 'assault' strategy, its comportment relative to common views of what Keynes was trying to do, and its logical possibilities of success. Since Keynes was arguing against the then predominant Marshallian neoclassical method of economic analysis, we will have to also give some time to considering the essentials of Marshall's methods in order to determine where Keynes' might have thought he was placing the most telling blows.

General vs. Special Cases

The claimed thrust of Keynes' assault was to show that 'classical' economic theory was merely one special case on a more general continuum of possible cases. Unfortunately, this way of presenting his assault can be very misleading. Whenever we are dealing with formal models we are always dealing with arbitrary frameworks defined in terms of specified sets of variables. What may be a special case in one framework of given exogenous and endogenous variables can often be seen as the general case in another merely by rearranging the allocation of those variables between being considered endogenous or exogenous. I think the arguments of Patinkin and others have shown this. As long as the only variables allowed are natural givens and aims of individuals (i.e. no social variables are allowed if they are not reducible to the logical consequences of individual choices), this interpretation of Keynes' 'general-vs.-special' case argument will always see Keynes' assault as a failure.

For Keynes, generality refers to a methodological-cum-historical continuum. On this continuum any current state of equilibrium is a special case as it is merely one point on a historical-time-continuum. Similarly, any realistic state of disequilibrium is also just a specific point on that continuum.¹ A state of disequilibrium is more general in the sense that there are many more possible states of disequilibrium than there are possible states of equilibrium.

In the other camp, which includes followers of Marshall and the so-called Keynesian Counterrevolutionaries, generality is seen differently because they are referring to a different continuum. It is different because it is a logical continuum of time-periods which runs from a zero point on the left end representing an infinitely small instant to a point at the right end representing an infinitely long period of time. For these Marshallian advocates of neoclassical economics, whenever one is considering points further to the right one is automatically considering periods of time which allow more and more variability – that is which allow for more time for all variables to change.

Since a longer time period is being considered whenever one adopts a methodological perspective further to the right on this continuum, more and more variables can be made endogenous instead of exogenous – that is more variables can be considered to have been chosen by maximising individuals whenever there has been enough time allowed to make any needed adjustments or 'substitutions' (to use Marshall's term).²

Generality from Keynes' Viewpoint

Keynes' argument was more than a petty dispute over historical vs. logical time-continuum viewpoints. He argued that there are important non-individualist, non-natural givens facing the real-time individual decision-maker. A main thrust of Keynes' argument is that these short-run 'macro' variables are necessary for adequate explanations even in the usual neoclassical micro model (cf. Richardson 1959). In particular, there are 'aggregate' variables such as GNP, the general price level and expectations which do not depend on any specific individual's psychological states but on the behaviour and expectations of all other individuals. At any point of time, these are contemporaneously determined variables which the individual cannot choose yet they are variables whose states affect the decisions made.

Keynes' concept of generality seems to rest, then, on the methodological position that considers a model with more exogenous givens to be more general. Any methodological strategy that restricts the list of permitted exogenous variables would be considered a 'special case' in Keynes' classical framework. This is contrary to the usual neoclassical perspective which measures generality by the number of endogenous variables explained.

Whenever enough time is allowed in any neoclassical model, all variables, including 'aggregate' variables, can be shown to be the ultimate result of individual choice. But it is also important to realise that in Keynes' argument no amount of realistic time would ever be sufficient to explain 'aggregate' variables away as the neoclassical methodologists would have us do. So, it is important to keep Keynes' arguments restricted to the Marshallian 'short-run' since the definition of that time period requires the needed exogeneity of variables.

Neoclassical Methodology and Psychologicistic-Individualism

It is a central methodological feature of any neoclassical theory that the only exogenous variables allowed are those natural constraints such as resource availability and naturally given psychological states of individuals such as tastes or preferences. Methodologists call this 'psychologicistic-individualism' in order to distinguish it from the weaker form which they call 'methodological-individualism' (see Boland 1982 Chapter 2). Methodological-individualism is the view that only individuals make decisions. It does not require any commitment to reduce all economic explanations to matters of psychology as John Stuart Mill would have us do.

According to psychologicistic-individualism, all non-natural variables may be considered 'exogenous' only temporarily as an arbitrary matter of methodological perspective. For example, in a short-run model one will see many variables that cannot be changed in the short-run (e.g., available capital, the income distribution, the interest rate, the market structure, etc.) and that are thus exogenous constraints for the individual decision-maker. Such a short-run perspective can never be adequate since neoclassical methodology requires that all such temporary, non-individualist variables to be transformed into endogenous variables by simply broadening one's logical-time horizons. As a consequence, the only acceptable neoclassical explanation will be a long-run model in which it is logically possible to reduce all endogenous variables to matters of individual choice guided by psychologically given aims (see Lucas 1980).

In any Marshallian long-run model everything will be in equilibrium because there will not be any non-natural constraints artificially preventing the individual from adjusting his or her situation to its optimum. Often any short-run constraints that are neither non-natural nor non-individualist will be explained away as being the results of past (optimising) choices. In neoclassical methodology, disequilibria caused by intervening constraints are either temporary states of affairs or they are illusions (see further, Archibald and Lipsey, 1958). In any neoclassical model, a disequilibrium is temporary merely because enough time has not been allowed to pass for the relaxation of the intervening non-natural constraints³. A disequilibrium will be an illusion in Coase's sense whenever it can be explained to be really an equilibrium which would be apparent if we were to properly perceive that the intervening constraints are the logical consequences of the natural givens (i.e. of externalities).

Unfortunately, most neoclassical economists confuse psychologicistic-individualism with methodological-individualism and the situation is not helped by Keynes' reliance on such things as subjective probabilities. And referring to his theory of the consumption function, he says 'This psychological law was of the utmost importance in the development of my own thought' (CW, XIV,). But, perhaps Keynes' insistence on taking a psychologicistic view of decision-making is only because he wants his criticism to avoid automatic rejection by neoclassical economists that abandonment of this view might seem to entail.

Keynes' Macro-Variables vs. Neoclassical Individualism

Keynes' implicit insistence on the necessary role for macro-variables in the explanation of individual decision-makers could create methodological problems for any 'counterrevolutionary' Keynesian model. Macroeconomic

variables (those whose values depend on the behaviour of all individuals in the economy) do not present a problem if we restrict our analysis to long-run equilibria. But this requirement supposedly leads to highly unrealistic models ('in the long-run we are all dead') and thus the need to look at short-run models. The important question here is whether restricting economics to short-run models necessarily violates the requirements of methodological-individualism.

To say that Keynes insists on a short-run perspective for economic explanations is not to criticise Keynes for not being individualistic. In a very important way he was more individualistic than typical neoclassical economists. As Spiro Latsis (1972) has argued, the neoclassical maximisation model suffers from not truly allowing free choice by the individual decision-makers in question. If an individual in the long-run equilibrium is given a utility function by nature and the constraints are also given by nature, the choice option which maximises utility is mathematically predetermined and only needs to be found by the individual. There is no free choice in long-run equilibrium. The only question is whether the individual is smart enough to know when his or her utility is maximum. Of course, the concept of 'constrained maximisation' has always had its methodological problems⁴.

The Marshallian background of Constrained-Optimisation Methodology

Latsis' view of neoclassical methodology may be too severe. Nevertheless, there is a difficulty with any neoclassical framework which makes 'constrained maximisation' the keystone, and this difficulty is a concern of Keynes' assault. The difficulty is that in neoclassical model cannot explain the existence of 'liquidity'. In neoclassical maximisation models all optima are necessarily points on a boundary formed by the natural constraints much as a textbook Production Possibilities Curve (PPC) forms the upper bound on the possible mixes of output combinations limited only by the available resources and technologies. We are to explain the state of an economy by showing that the economy is at a point on such a boundary and that the shape of that boundary at the chosen point explains prices. Why would anyone want to be on their boundary of the capabilities? This question, we shall see, reveals the importance of Keynes' idea of 'liquidity'. What if an individual chose some degree of 'liquidity'? By choosing to have liquidity individuals deliberately choose not to operate on the boundary of production possibilities. But most importantly, there is no way to rationalise the choice of liquidity in a neoclassical framework since the existence of liquidity itself is inconsistent with maximisation.

Before we examine the idea of liquidity we need to consider a world without liquidity – namely, the textbook world of Marshallian-neoclassical maximisation where all predictions and explanations are based on one or more boundary functions. We will do so by briefly looking at the object of Keynes' assault – Marshall's methodological approach to economic explanations that he presents in his *Principles*. Marshall's methodology there is quite straightforward. In his first preface he tells us exactly what he is about to do. He will apply the 'Principle of Substitution' and the 'Principle of Continuity' in his economic explanations. The 'Principle of Substitution' merely says that every individual makes a choice between options by selecting the one option which maximises a given objective function. The 'Principle of Continuity' is co-requisite with the other principle because deliberate maximisation presumes that the options lie on a continuum. Any finite endpoint usually represents one of the constraints facing the individual decision-maker. The chosen option must not be at one of the endpoints of that continuum – that is the chosen (maximising) option must be somewhere between the endpoints. If the optimum were at an endpoint it would not be clear whether the chosen option was desirable or simply accepted. Much of Marshall's book up to Book V is devoted to showing that the second principle does indeed apply to all economic variables.

While Marshall's methodology of explanation can easily be based on his two principles, the task of using it runs into some procedural difficulties. One cannot explain everything in the universe all at once. Every maximisation situation involves constraints some of which are irrelevant endpoints and others which define the situation. For example, in the consumer maximisation model, the budget line is a constraint but is not always an exogenous variable. Given enough time, the individual consumer chooses it, too (cf. Clower 1965). So, Marshall's strategy is to lay out a continuum consisting of ever longer time periods in which more variables become endogenous. It needs to be pointed out that when discussing long-run decisions – those which require a lot of time – the firm will always be in a position where it has been able to optimise with respect to the shorter run variables. For example, the firm

always adjusts the labour to fit the just chosen capital level but it may still be constrained to reside in the current industry if enough time has not been considered to allow such a long-run adjustment. One might say that Marshall's explanatory methodology is all a matter of peeling the temporal onion.

The Marshallian optimisation methodology always considers the decision-maker to be facing something like a short-run production-possibilities curve. The curve forms a continuum and its position is limited by given constraints⁵. In the case of the price-taking individual consumer with no market power, the possibilities 'curve' will always be a straight line since that individual does not affect the given prices. The location of the curve is determined or constrained by the limited available resources or income. The constraints may not be naturally given but only difficult to change in the time period under consideration. But what is most important here is that the chosen option must be a point on the boundary formed by the curve.⁶ If a point interior to the PPC were chosen then the relationship between prices and marginal productivities would break down. One way to be at an interior point is by not maximising with respect to all the givens. All of the neoclassical marginal productivity theories of income distribution would then also be in serious jeopardy if not completely lost if the individuals did not operate on their respective boundaries. This is the importance of Keynes' introduction of 'liquidity'. The usual neoclassical results could not be maintained if 'liquidity' was allowed for.

The Keynes-Hicks Methodology of Optimum 'Liquidity'

Let us now turn to the matter of Keynes' concept of liquidity. As a student I was once taught that 'liquidity' was the key contribution of Keynes. Later I was taught that liquidity was only important in terms of the effectiveness of monetary policy. Keynes would seem to have little to say except in a severe depression where interest rates were so low that further monetary stimulation of investment would not be possible. These views of Keynes' liquidity is quite unsatisfactory. Nevertheless, the concept of liquidity is the source of all the alternative views which say that Keynes introduced one particular variable or another. For example, there is the claim that all that matters is Keynes' assumption that the labour market is not in equilibrium. It was sometimes claimed that all that matters is the 'liquidity trap'. And, of course, many still claim it is just the recognition of 'expectations'. All of these can be seen to be merely instances of what Hicks now recognises as a general form of liquidity⁷, as I will now try to show.

Hicks' Theory of Keynes' Liquidity Concept

A more general view of the concept of liquidity is the key to the methodological strategy of Keynes. In his recent book, *Causality in Economics*, Professor Hicks has carefully explained his view of the concept of 'liquidity'. While Hicks is more concerned with the quasi-Austrian aspects of real-time decision-making, he reveals the importance of why there may be good reasons for an individual choosing an amount of liquidity. For our discussion, the importance of an individual's choosing an amount of liquidity would be that the individual is choosing to be inside his or her possibilities boundary.

The point raised by Hicks is that in a world that is either static or moves in a sequential fashion (step by step, as in Marshall's world of comparative statics where there is always enough time allowed to make any adjustments), there really is no need for liquidity. However, in a world where many things are happening simultaneously, the presumption of optimisation is usually misleading. Every decision involves an actual decision situation (a set of relevant givens – income, prices, technology, availability, etc.) and a time-lag. Since every decision takes time to implement, during that time the original givens (which depend on the actions of other people (see Richardson 1959) might have changed and thus the implemented choice decision might not actually be the optimum for the new givens (see Hayek 1933/39).

For example, if one thinks the future will favour large fuel-inefficient personal automobiles and that there will be an unlimited amount of fuel, then specialising in the production and marketing of such autos might be the optimum choice regarding one's production technology. If the market should suddenly shift in favour of small efficient autos or if the availability of cheap fuel disappears, then one's profit potential would be drastically altered. The same would be true in the less dramatic case where a certain size of market is anticipated but there is a sudden increase in

demand due to a strike at a competing firm. If the previous level of output was the usual neoclassical long-run optimum (price equals average cost) then the firm would not be able to respond competitively by producing more unless there was more production capacity. To increase capacity would take time and might not even be the optimum after the strike is over. It would seem that zero excess capacity for the firm in the Marshallian short run – that is no liquidity in the non-financial sense – would not be an optimum situation. However, the appropriate optimum (with regard to excess capacity or liquidity) may not be knowable by the firm since knowledge of it depends on the unknown contemporaneous actions of other people as well as on the unknown future.

Keynes' Use of Liquidity

Allowing for liquidity as a deliberate choice variable is central to Keynes' assault. From Keynes' viewpoint, such liquidity is simply good business. For example, usually, whenever the labour market is in a state of 'disequilibrium' where the current real wage is above the one which would clear the market, there is excess supply. Such excess supply may very well represent a desirable state from the standpoint of the employer. For some it is always desirable to be able to expand production immediately whenever necessary. Similarly, whenever the wage is below the market clearing wage, a 35-hour work week may be an optimum for an individual even though he or she could work a 60-hour week. Having some free time to pick up some emergency side money when it is needed may be more desirable than working to one's limits according to an inflexible contract.

Good business may require the ability to choose one's speed of adjustment to changing conditions. Sometimes, a quick response is better than a slow response and at other times it is the reverse. Flexibility is the key here. But it is not a variable that can be chosen in the same way one would choose a quantity of food or a quantity of capital to achieve a given current objective. The reason is that one's choice of liquidity, be it financial as Keynes discussed or non-financial as Hicks noted, always depends on variables which cannot be easily determined. However, knowledge of them would be essential for the usual neoclassical explanation.

The Consequences of 'Liquidity in General'

While Keynes focuses his idea of liquidity on the more narrow concept of financial liquidity, it is easy to see that the idea of liquidity can be extended to all situations where the decision-maker is placed inside the boundary of his or her capabilities. The classic example is that of 'excess capacity' which is a position where the firm has enough capital to increase production without raising unit costs (including infinitely rising cost at the absolute boundary of production capabilities). Whenever the firm operates with 'excess capacity' the economy must be inside the PPC and being inside small adjustments in the chosen point may not affect the costs or productivities.

To understand the significance of stressing the desirability of liquidity we need also to see why it is not part of the usual neoclassical model. Consider again the PPC. This time we will assume it refers to the production possibilities of a specific firm producing two goods, x and y . So long as more is always better, any individual facing the limitations represented by such a curve will want to be producing on the boundary of possibilities as represented by the curve. To produce on that boundary, all available resources will need to be fully employed (see Samuelson 1950). If one does not use all resources fully then necessarily the chosen point will be inside the boundary.

Whenever the firm is producing on its PPC optimally (i.e. maximising its 'profit' or net revenue) we know that the relative marginal productivities of those resources in the production of x will just equal the relative marginal productivities of those resources in the production of y since both ratios must be equal to given relative prices of those inputs. Similarly, for any resource, the ratio of its marginal productivity in the production of x to that in the production of y must just equal the same ratio for any other input since these ratios will all equal the given relative price for the two products. What is significant about all this is not that these well-known equalities are achieved but that the individual's decisions must be responsive to changes in the given prices⁸. Whenever the given prices change there is an explainable shift from one point on the boundary to another on that boundary since we can calculate the point on the boundary at which all the equalities are satisfied. And almost always there will be a shift whenever one of the prices changes. The whole importance of the competitive market is that everyone should take

prices as the appropriate signal concerning what to produce or buy. That the price of fuel-inefficient autos should be falling relative to efficient autos is important social information. By responding to such a price change by reducing the output of inefficient autos, the firm is doing what society wants – just as indicated by the change in relative prices.

Now what happens when the firm is not operating on its possibilities boundary – that is when, for example, it is deliberately providing liquidity in the form of excess capacity? For one thing, except by accident, not all of the above equalities will be satisfied. Net revenue is therefore not being maximised with respect to all inputs. As a result the income distribution will not likely reflect the indirect demand for productive services. Since there are many ways to be at an interior point (e.g., excess capital, excess labour or any combination of these) and since by being there the firm may not be maximising with respect to at least one of the inputs, predicting where the firm will be if it has chosen to respond to any change in the prices would be difficult. Similarly, if the firm has chosen a point inside the boundary, restricting any input may not have immediate effects on the individual firm's output level. For these reasons not only is there no guarantee that individual firms (or individual consumers) will be doing what society wants, but any attempt by government to alter their behavior by changing tax rates or by manipulating interest rates may prove to be quite ineffective in the short-run.⁹

Keynes' discussion of expectations (when expressed in terms of methodological and epistemological questions) raises similar issues. In his 1937 *QJE* article about his *General Theory* he explicitly identifies decision processes which are not optimising. Collecting all the available information to make an investment decision may be uneconomical even if it is logically possible. Simple rules-of-thumb ('conventional judgement') may be adequate but may not be optimising even for the state of limited knowledge. Follow-the-leader behavior may be easier to justify than maximisation. Since all investment decisions involve estimations about future states of affairs, relying on the going interest rate as an indicator about the appropriate relative price for future-vs.-present consumption decisions (following Irving Fisher) presumes that it has been determined in a free market of buyers and sellers with perfect foresight. If buyers and sellers are, instead, using information from sub-optimising decisions, what does the market interest rate indicate to an individual decision-maker? High interest rates may only reflect the current state of optimism rather than known investment possibilities.

On Effective Criticism

It is unfortunate that the so-called Post-Keynesians as well as the counterrevolutionaries consider the *General Theory* to be a 'blueprint' for an alternative to neoclassical economics. There really is little there in the *General Theory* to form a coherent alternative economic model. Despite what many critics of neoclassical economics might like to believe, the introduction of liquidity or excess capacity into an otherwise neoclassical model does not always conflict with the usual assumption of maximisation. For all we know the individual firm may have inadvertently chosen the optimum amount and thus have all its marginal productivities equal to their respective factor prices. That is to say, whenever there is excess capacity, maximisation is not logically precluded. What Keynes argued was simply that there is no good reason to think that they have consciously chosen the optimum amount in accordance with neoclassical models. Furthermore, to say firms may not be optimising does not deny any conscious attempt on their part to choose the optimum amount of liquidity – although, in the face of uncertainty it is unlikely that they could ever succeed. In other words, all the usual elements of neoclassical choice theory and methodology are here since only individuals are making choices and those choices are intended to be optimising. For many objects of immediate choice (consumable goods, direct services, etc.) there is no good reason to doubt neoclassical maximisation. However, for objects of choice involving judgements about the future state of the economy (such as investments, capacity, etc.), it is difficult or impossible to see the decision process as that of straightforward maximisation. In the face of uncertainty liquidity is a means of avoiding the difficult determination of maximising choices. Thus, when it comes to liquidity (which, in the face of uncertainty, is offered as a necessary short-run endogenous variable in the *General Theory*) there may not be any good reason to doubt the presumption that liquidity has been chosen optimally – except one. If liquidity could be chosen like any other variable there would be no need for liquidity! So, I am arguing that Keynes' primary assault lies in the empirical claim that in any individualist model of an economy liquidity (or excess capacity) is a necessary object of choice and thus all long-run models must be empirically false.¹⁰

The point of Keynes' assault is that he wishes to challenge the advocates of neoclassical economics *on their own terms* – namely, in a world where *only* individuals make decisions. If he were to try to criticise them on radically different terms, his views could too easily be dismissed as being irrelevant for questions addressed by neoclassical economics. In this case it is not clear that Keynes was successful since the only change in mainstream economics since the publication of the *General Theory* has been the introduction into the curriculum of a course called macroeconomics and with it the implicit claim that Keynes was dealing with questions that are different from those addressed by microeconomics. Keynes is entirely to blame for this means of avoiding his criticism. He is the one who stresses the necessary role of macro-variables in the theory of the individual decision-maker. Perhaps he only introduced 'macro' variables because he accepted the psychologistic version of individualism that underlies all of neoclassical methodology yet he knew the introduction of such variables was against the neoclassical methodological-individualist rules. Had he avoided psychologistic-individualism he would not have had to stress the 'aggregate' variables – that is had to emphasise the active role of variables which cannot be explained as being reflections of only the aims of individuals in real-time¹¹. But of course, this conjecture is silly. Had he not followed psychologistic individualism like most neoclassical theorist do, he would have been dismissed on these grounds alone – without ever dealing with his criticism. So, I would now claim that until mainstream neoclassical economics drops its dependence on narrow psychologistic-individualism, Keynes' assault will not be much of a struggle for neoclassical economic theorists.

Footnotes

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1. The typical labour market is a good example. Observable points (i.e. points representing levels of actual employment at the going wage rate) will be located on the demand curve whenever the wage rate is above the equilibrium rate and they will be on the supply curve when it is below that rate. The maximum observable level of employment (without exploitation) will be that one point where demand equals supply. There is then a continuum running from high wage rates to low rates with just one rate being the equilibrium rate.
2. When we are discussing Keynes' assault it is important for us to keep the Marshallian logical continuum in mind since it is directly relevant to the significance of the 'Generality vs. Special Case' debate and it is indirectly but more fundamentally relevant to the intellectual background against which Keynes was directing his assault. The logical continuum is the foundation for Marshall's method of explanation which uses various temporal perspectives – 'market-periods', 'short-periods', 'long-periods' and very long periods representing inter-generational differences.
3. All other variables are just 'independent' endogenous variables with respect to the individual decision-maker but 'dependent' endogenous for the system as a whole. Note also that in a broader sense (e.g., General Equilibrium theory) only the variables which are exogenous in the long-run models are really exogenous (see Hicks 1979).
4. But not all of the problems usually discussed (see Boland 1981).
5. Note that the PPC represents the Pareto optimal allocations of fixed resources as indicated by the size of an Edgeworth-Bowley box, e.g., in a two factor world. Specifically, it is a one-to-one mapping between the points on a locus of tangency points between two opposing production iso-quant maps and points on the PPC representing the (maximum) output levels indicated by the two iso-quants that are tangent. If the size of the box is increased, then the PPC will be located further from the origin. See further, Samuelson (1950) and Koopmans (1957).
6. In a set-theoretic sense, the PPC is the positive boundary of a convex set. The convexity of the set is logically provided in the usually Marshallian model by simply assuming all production functions exhibit diminishing marginal returns to all factors and there are no increasing returns to scale in any production process.
7. Specifically, he refers to 'financial' and 'non-financial' liquidity (Hicks 1979, 94ff).

8. Note that this is why the issue of 'stickiness' of wages is so important since whenever any price is artificially restricted from changing in response to different market conditions, that price no longer provides useful information for any decision-maker. Generally speaking, prices are easier to change than quantities so that a fixed prices only slows down any adjustment process. Although it may take a lot longer, in the usual neoclassical model it is at least logically possible to find values for the quantities such that all of the equations can be restored as equalities.

9. Note that this is just the other extreme from the current arguments against governmental intervention of the Rational Expectations school. Their argument is that if you allow for as sufficiently long time-period, the government could not really change any givens by fooling everyone. In the long-run, supposedly, everyone can learn the true nature of the world (see further, Boland 1982 Chapter 4).

10. The reason why it is necessary is that so many of any individual's decisions depend on the status of what we might now call 'macro' variables – variables which depend on the contemporaneous actions of many other individuals. Stressing the aggregate or macro aspect of the variables only emphasises this dependence.

11. An alternative would be to recognise non-individualist, non-natural exogenous variables (see Boland 1982 Chapter 11).

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