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Part III

Some missing elements

9 The foundations of Keynes' methodology

By 'uncertain' knowledge ... I do not mean merely to distinguish what is known for certain from what is only probable... Even the weather is only moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper ... twenty years hence... About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know...

I accuse the classical economic theory of being itself one of these pretty, polite techniques which tries to deal with the present by abstracting from the fact that we know very little about the future.

John Maynard Keynes [1937, pp. 214–15]

Liquidity is freedom. When a firm takes action that diminishes its liquidity, it diminishes its freedom; for it exposes itself to the risk that it will have diminished, or retarded, its ability to respond to future opportunities. This applies both within the financial sphere and outside. I have myself become convinced that it is outside the financial sphere (very inadequately considered, in relation to liquidity, by Keynes) that liquidity is potentially of the greater importance... Liquidity preference, for the financial firm, is a matter of marginal adjustments, as Keynes very rightly saw. But the liquidity problem of the non-financial firm is not, as a rule, a matter of marginal adjustments.

John Hicks [1979, pp. 94–5]

Generality pursued too avidly leads to emptiness. As scientists we must be willing to live dangerously. What we must seek is no inadmissible specialisations and no unnecessary generality.

Paul Samuelson [1950, p. 374]

Keynes said that the readers of his book would have to endure a 'struggle of escape' if his critical assault upon them was to be successful. This chapter 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 more 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.¹

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 'Keynesian' economists such as Patinkin [1956] demonstrate this. As long as the only variables allowed are natural givens and the aims of individuals (i.e. no social variables are allowed if they are not reducible to the logical consequences of individual choices), their 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. 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 Counter-revolutionaries [see Clower 1965], generality is seen differently because they are referring to a different continuum. It is different because Marshall's method of explanation uses a logical continuum of time periods which runs from a zero point at the left end representing an infinitely small instant to a point at the right end representing an infinitely long period of time. In between the extremes are his various temporal perspectives – 'market periods', 'short periods', 'long periods' and the inter-generational 'secular' periods. For 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. 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 'general vs special case' debate and it is indirectly but more fundamentally relevant to the intellectual background against which Keynes was directing his assault.

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

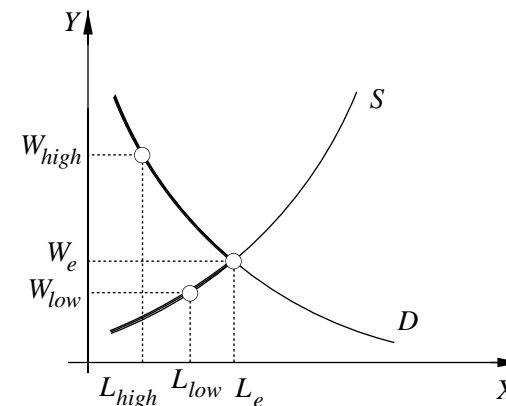


Figure 9.1 *Observable levels of employment*

If we leave aside the long-run temporal aspects of Marshall's continuum, and instead maintain a market-run perspective, then we can appreciate a different continuum. Specifically, the typical labour market can be seen to form a continuum of prices (see Figure 9.1). At any point in time a wage-rate and a level of employment will be observed. 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. Along the continuum of observable levels of employment, the maximum observable level of employment (without exploitation) will be that one point where demand equals supply. Thus, there is then a continuum running from high wage rates to low rates with just one rate being the equilibrium rate.

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. 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 state 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 realize 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 PSYCHOLOGISTIC 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 their tastes or preferences. This limitation on acceptable exogenous variables is much stronger than mere 'methodological individualism' which requires only that neoclassical explanations be individualist – that is, be based on the notion that only individuals make decisions. As I noted in Chapter 8, the stronger version, which is called 'psychologistic individualism', should not be confused with individualism *per se*. Individualism *per se* does not require any commitment to reduce all economic explanations to matters of psychology as John Stuart Mill [1843]

would have us do.²

Neoclassical economics can accommodate psychologistic individualism only in long-run explanations. In the neoclassical short run, according to psychologistic 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, technical knowledge, 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 an adequate neoclassical explanation since neoclassical methodology requires that all such temporary, non-individualist variables 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 [e.g. 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 (optimizing) 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 constraints.³ As I discussed in Chapter 5, a disequilibrium will be an illusion in Coase's sense whenever one can show that it is really an equilibrium and that its reality would be apparent if we were to properly perceive that the intervening constraints are the logical consequences of the natural givens (*viz.* of externalities).

It is unfortunate that most neoclassical economists confuse psychologistic individualism with methodological individualism and the situation is not helped by Keynes' reliance on such things as subjective probabilities. 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' [1937, p. 220]. But perhaps Keynes' insistence on taking a psychologistic view of decision-making is only because he wants his criticism accepted. In particular, he wants to avoid its being automatically rejected by proponents of neoclassical economics. He surely realized that it is all too easy for them to think his view might entail the abandonment of neoclassical theory.

KEYNES' MACRO-VARIABLES VS NEOCLASSICAL INDIVIDUALISM

Keynes' implicit insistence on a necessary role for macro-variables in the explanation of individual decision-makers could create methodological problems for any 'counter-revolutionary' 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 criticize 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 maximization 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 maximizes 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 maximization' has always had its methodological problems.⁴

THE MARSHALLIAN BACKGROUND OF CONSTRAINED-OPTIMIZATION METHODOLOGY

Latsis' view of neoclassical methodology may be too severe. Nevertheless, there is a difficulty with any neoclassical framework which makes 'constrained maximization' the keystone, and this difficulty is a concern of Keynes' assault. The difficulty is that with a neoclassical model one cannot explain the existence of 'liquidity'. In neoclassical maximization models all optima are necessarily points on a boundary formed by the natural constraints, much as the textbook Production Possibilities Curve (PPC) forms the upper bound on the possible mixes of output combinations limited only by the available resources and technologies (see Figure 9.2). We are to explain the state of an economy by showing that the economy is at a point *on* such a boundary (point *R*) and that the *shape* of that boundary (viz. its slope) at the chosen point explains prices. Why would anyone want

to be on the boundary of their 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 important, there is no way to rationalize the choice of liquidity in a neoclassical framework since the existence of liquidity itself is inconsistent with maximization (as maximization requires being on the boundary).

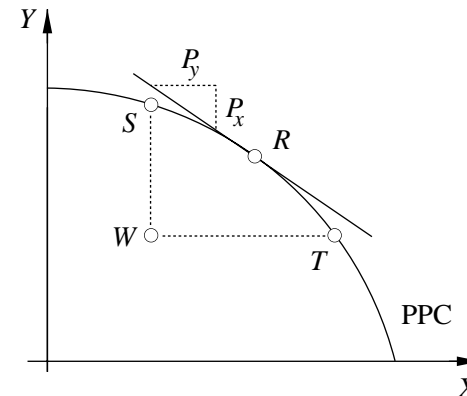


Figure 9.2 *Production possibilities curve*

Before I examine the idea of liquidity I need to reconsider Marshall's world without the phenomenon of liquidity – namely, the textbook world of Marshallian-neoclassical maximization where all predictions and explanations are based on one or more boundary functions. I will do so by briefly looking at the object of Keynes' assault: Marshall's methodological approach to economic explanations. As I discussed in Chapters 2 and 3, Marshall's methodology is quite straightforward and involves the application of the Principle of Substitution subject to the requirements of the Principle of Continuity in his economic explanations. Recall again that the Principle of Substitution merely says that every individual makes a choice between options by selecting the one option which maximizes a given objective function. The Principle of Continuity is co-requisite with the other principle because deliberate maximization 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 (maximizing) option must be somewhere between the endpoints. If the optimum were at an endpoint it would not be clear whether the chosen option was the most desirable or simply accepted.

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 maximization situation involves constraints of which some are irrelevant endpoints and others merely define the situation. For example, in the consumer maximization 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, as I have noted before, Marshall's strategy is to lay out a continuum consisting of ever longer time periods in which more variables become endogenous. Again, 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 optimize with respect to the shorter-run variables. One might say that Marshall's explanatory methodology is all a matter of peeling the temporal onion.

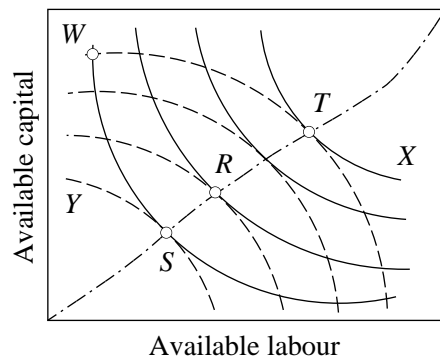


Figure 9.3 *Edgeworth-Bowley box*

The Marshallian Principle of Substitution 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 constraints. Note that the PPC represents the Pareto-optimal allocations of fixed resources which can be represented in a two-factor world by the height and width of an Edgeworth-Bowley box (see Figure 9.3). 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-quant that are tangent. The correspondence between Figures 9.2 and 9.3 shows that the position of the PPC is limited by the available amounts of the two factors. If the size of the box is increased, then the PPC will be located further from the origin.⁵ To be at a

point on the PPC, the corresponding point on the locus of tangencies in the Edgeworth-Bowley box must have been chosen. To be an optimum point on the PPC, the slope of the PPC must equal the ratio of the prices for the two goods illustrated and at the point on the tangency locus in the Edgeworth-Bowley box the slopes of the respective iso-quant must both equal the given ratio of factor prices. These are all necessary conditions for an equilibrium allocation.⁶

Now, if a point interior to the PPC were chosen, the relationship between prices and marginal productivities would break down since the shape of the boundary will be irrelevant. If an interior point is chosen, all of the neoclassical marginal productivity theories of income distribution would be in serious jeopardy if not completely lost if the individuals did not operate on their respective boundaries. I shall argue below that this breakdown is the importance of Keynes' introduction of 'liquidity'. The usual neoclassical assumptions and results cannot be maintained if 'liquidity' is to be accommodated.

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. In these terms, 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 are 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 (and hence the employment is less than maximum – see Figure 9.1). 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 recognizes as a general form of liquidity,⁷ as I will 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 1979 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 to be choosing an amount of liquidity. Here 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 optimization 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) might have changed and thus the implemented choice decision might not actually be the optimum for the new givens.⁸

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 specializing 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 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 thirty-five-hour work week may be optimum for an individual even though he or she could work a sixty-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 also 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 narrower 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 (i.e. it is within the infinitely rising cost limit 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 textbook PPC of Figure 9.2. For the sake of discussion, let us think of a firm producing two different goods, *X* and *Y*, with two factors, *L* and *K*, such that the firm's production decisions include deciding on an allocation of the available factors between the two production processes and thereby a point within the production possibilities set. The boundary of this set is the PPC.⁹ 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 by definition of the PPC. 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. maximizing 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 prices. 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. A fixed price only slows down any adjustment process. Although it may take much 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.

What is most important here is that 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. In 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.

Let us now consider a firm that is not on the PPC defined by its amounts available of the two factors. Note that there are two ways to be at an interior point. One way is by not maximizing with respect to all the givens – such would be the case if the allocation point W in Figure 9.3 were chosen since the slope of at least one of the two iso-quants cannot be equal to the given ratio of factor prices. The other way is by not using all of the available factors, perhaps for the purpose of providing flexibility (i.e. room to maneuver).

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 between relative prices and relative marginal productivities will be satisfied. Point W in Figures 9.2 and 9.3 represents the misallocation of fully employed factors. If we wish to consider a case where not all of the available factors are being employed then we need to determine a different PPC for the under-employed case. So, I have reproduced the PPC of Figure 9.2 in Figure 9.4 such that the under-employment PPC (PPC_{ue}) will be inside the full-employment PPC of Figure 9.2. I illustrate the relationship in Figure 9.4 where W is an interior point for both PPCs and may correspond to a misallocation of the employed factors in each case. Point V represents an output mix that is optimum for the given prices but still implies an under-employment of factors. At point W profit (or net revenue) is not being maximized with respect to all inputs (see Figure 9.3). As a result the income distribution will not likely reflect the indirect demand for productive services. Since there is more than one way 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 maximizing profit 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 behaviour by changing tax rates or by manipulating interest rates may prove to be quite ineffective in the short run.¹⁰

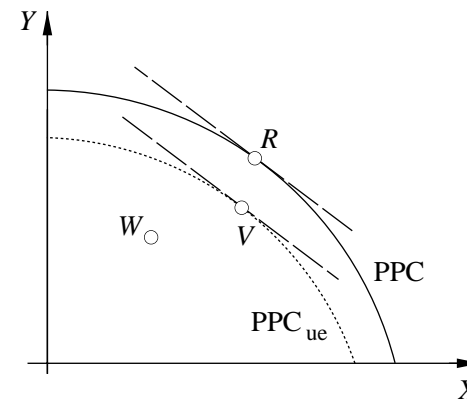


Figure 9.4 *Under-employment PPC*

Keynes' discussion of expectations (when expressed in terms of methodological and epistemological questions) raises similar issues. In his

1937 *QJE* article about the *General Theory* he explicitly identifies decision processes which are not optimizing. 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 optimizing even for the state of limited knowledge. Follow-the-leader behaviour may be easier to justify than maximization. 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-optimizing 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 counter-revolutionaries consider the *General Theory* to be a 'blueprint' for an alternative to neoclassical economics. Such a viewpoint leads readers to miss the sophisticated criticism and challenge that Keynes offers neoclassical believers. 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 maximization. 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, maximization is not logically precluded. What Keynes argued was simply that there is no good reason to think that firms have consciously chosen the optimum amount in accordance with neoclassical models. Furthermore, to say firms may not be optimizing 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 optimizing.

For many objects of immediate choice (consumable goods, direct services, etc.) there is no good reason to doubt neoclassical maximization. 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

maximization. In the face of uncertainty, liquidity is a means of avoiding the difficult determination of maximizing 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. 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 emphasizes this dependence.

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 criticize 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; the only apparent 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 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 emphasize the active role of variables which cannot be explained as being reflections of only the aims of individuals in real time.¹¹ But of course, this conjecture is silly. Had he not followed psychologistic individualism, as most neoclassical theorists do, he would have been dismissed on these grounds alone – without ever dealing with his criticism. Until mainstream neoclassical economics drops its dependence on narrow psychologistic individualism, Keynes' assault will not be much of a struggle for neoclassical economic theorists.

NOTES

- 1 The arguments presented here were those I gave in a conference at Cambridge University in 1983. Most of the proceedings of that conference were subsequently published in Lawson and Pesaran [1985].
- 2 As a form of individualism, institutional individualism still maintains the view that only individuals make decisions yet allows Keynesian-type macro-variables to play a role in the individual's decision process.
- 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 [see Chapters 2 and 3 above]. Note also that in a broader sense (e.g. general equilibrium theory) only the variables which are exogenous in the long-run models are truly exogenous [see Hicks 1979].
- 4 But not all of the problems are usually discussed [see Chapter 1 above].
- 5 For an explanation of the relationship between PPCs and the Edgeworth-Bowley box, see Samuelson [1950].
- 6 In the special case of the price-taking individual consumer with no market power, the possibilities 'curve' will always be a straight budget 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'. In a set-theoretic sense, a possibilities curve is the positive boundary of a convex set of available options.
- 7 Specifically, he refers to 'financial' and 'non-financial' liquidity [Hicks 1979, 94ff].
- 8 This may not have been what Hayek [1933/39] intended but one can certainly find it a plausible interpretation, see further, Boland [1986a, Chapter 6].
- 9 The convexity of the possibilities set is logically provided in the usual Marshallian model by simply assuming that the two production functions are different and exhibit diminishing marginal returns to all factors and that there are no increasing returns to scale in any production process.
- 10 Note that this is a very different alternative from the current arguments against governmental intervention of the Rational Expectations school. Their argument is that if you allow for a 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 1982a, Chapter 4].
- 11 An alternative would be to recognize non-individualist, non-natural exogenous variables [see Boland 1982a, Chapter 11].

10 Individualism without psychology

[*Mathematical Psychics* involved] considerations so abstract it would of course be ridiculous to fling upon the floodtide of practical politics. But they are not perhaps out of place when we remount to the little rills of sentiment and secret springs of motive where every course of action must be originated.

Francis Edgeworth [1881/1961, p. 128]

All human conduct is psychological and, from that standpoint, not only the study of economics but the study of every other branch of human activity is a psychological study and the facts of all such branches are psychological facts.

Vilfredo Pareto [1916/35, sec. 2078]

Neoclassical economics is often thought to need an infusion of social psychology. There are two reasons for this. One is that economics should be able to recognize the social interaction between individual decision-makers; the other is that economics should recognize that the nature of an individual's utility function is essentially psychological. Both of these reasons involve the methodological requirements of the individualism that is at the foundations of neoclassical economics. In this short chapter I wish to explain why the requirements of individualism do not necessitate an infusion of social psychology.¹

INDIVIDUALISM VS PSYCHOLOGISM

As I have been insisting in the previous chapters, it is important to avoid confusing methodological individualism with psychologism. Individualism is the methodological view that all social events must be explained as the consequences of choices made by individuals – things do not choose, only individuals do. Psychologism is the view that in any explanation (individualist or otherwise) the *only* exogenous givens other than natural

constraints allowed are those representing psychological states of either individuals or groups. As I noted above,² individualism is distinguished from holism and psychologism is distinguished from institutionalism. This means that in addition to psychologistic individualism and institutional individualism, which I discussed previously, there are two versions of holism: psychologistic holism and institutional holism. Explaining an event as a case of ‘mass psychology’ would be an instance of psychologistic holism. Explanations based on such things as ‘class interest’ are examples of institutional holism.

Individualism as a methodological view or doctrine about how social events and situations are to be explained does not require us to base individualism on psychology. Before I can discuss the social and psychological aspects of an individual’s choice situation, I need to present the explanatory problem confronting any methodological individualist.

INDIVIDUALISM AND THE LEGACY OF EIGHTEENTH CENTURY RATIONALISM

There is more to (methodological) individualism than an explicit commitment to individualist explanations. Since the eighteenth century, for any explanation to be acceptable it must be ‘rational’ and thus, as I explained in Chapter 6, it must be universal. Being rational means that the explanation forms a logically valid argument such that if the premises of the argument are all true then the conclusions logically derived will also be true. By universal, we mean that *anyone* who accepts the truth of the premises of a logically valid argument will also accept the truth of its conclusions. The tradition of compounding rationality with individualism is problematic in two ways which together represent the classic intellectual dilemma between unity and diversity [see Agassi 1969]. On the one hand the universality of rationality undermines individualism by making all individuals identical in a significant way. On the other hand, the nineteenth-century tendency to view rationality as a psychological process also undermines individualism by making individuality exogenous and thus beyond explanation.

To illustrate these methodological problems, consider the following hypothetical situation. Our closest friend has been caught robbing a bank. Demanding an explanation, we ask, ‘Why did you rob the bank?’ Before we allow our friend to answer, we must recall that, to be an acceptable explanation, any explanation given either by us or by our friend must be rational and conform to the requirements of methodological individualism. Individualism only precludes choices being made by things. Rationality is established by examining the logic of the situation facing our friend, the

bank robber. By asking our friend for an explanation we are asking him to give a description of the logic of his situation. Specifically, we ask him to give reasons which represent (1) his aims and (2) the constraints that restrict the achievement of his aims. If he can describe the logic of his situation such that we would agree that anyone who exactly faced that same situation (aims and constraints) would also rob the bank, then we would say that we *understand* why he robbed the bank. For example, he may tell us that his child needs a very expensive operation and he wants his child to have that operation but there is no legal way he could afford it before it would be too late. Robbing the bank was the only way to achieve his aim. If his description of the situation is true (i.e. there really is no other way possible), then given his aim (to save his child) it would be rational for him to rob the bank – in fact, it might be considered rational for *anyone* with that aim and those constraints.

The logical requirements of an explanation of individual behaviour are the same whether we are discussing our friend the bank robber or the individual consumer choosing to spend his or her money on tomatoes and cucumbers. In the case of the individual consumer, the aim is supposedly the maximization of utility obtained from consuming what one has purchased while facing the constraints of given prices, given purchasing power (one’s budget or income) and a given utility function. Such utility-maximizing behaviour is rational in the sense that any two individuals with the same utility function and same income facing the same prices will choose to consume the same quantities of goods so long as each individual aims to maximize his or her utility.

Rationality assures such universality and uniqueness of choice. The idea that rationality assures universality is characteristic of eighteenth-century ‘Rationalism’ and thus is fundamental to the origins of economic theory. The identification of rationality with utility maximization is a late-nineteenth-century perspective and the foundation of neoclassical economics. In terms of modern economics, the quantities of goods the individual consumes are considered endogenous variables. Only the utility function is unambiguously exogenous. Income and prices are treated as constraints for the individual but not for the economy as a whole, so whether they are endogenous or exogenous depends on the situation we choose to model. In neoclassical economics our task is to explain individual choices in order to explain how prices affect demand so that we can explain how demand influences prices in the market; in other words, prices and incomes (which depend on factor prices) are endogenous.

From a logical point of view (and contrary to what some people think [e.g. Mason 1988]), a single individual’s choice is easier to explain than a market’s demand curve. This is because in consumer theory we can treat

the prices and income facing the individual as exogenous variables, leaving only the consumer's choice as the endogenous variable to explain. Any explanation of a market's demand curve requires us to explain all consumers' choices as well as all the other market prices that these consumers face. Of course, we would also have to explain the supply curve in every market in question.

UNITY VS DIVERSITY IN METHODOLOGICAL INDIVIDUALISM

Neoclassical economics, nevertheless, claims to explain all prices and the allocation of all fixed resources. How is it possible for one theory to explain so much? The particular value of prices (or state of resource allocation) depends, of course, on the nature of each individual's utility function. In this context methodological individualism allows both diversity and unity. Diversity is promoted by recognizing that some people will spend more of their income on tomatoes than other people do. Unity is promoted by the claim that all individuals are maximizers. This means that all people face falling marginal utility curves (a necessary calculus condition for maximization). Does this mean all people are identical and thus deny individuality? No; so long as everyone faces downward sloping marginal utility curves, the absolute position of that curve (relative to other goods) need not be the same for all individuals. For the same amounts of tomatoes and cucumbers, some may get more satisfaction from tomatoes, others get more from cucumbers. Also, some people may have steeper marginal utility curves than other people do. We see that on the one hand individuality is preserved since, even facing the same prices and incomes, two maximizing individuals may choose different quantities if their exogenously given utility functions are different. On the other hand, universality is provided by the common nature of utility functions if it can be shown that as a matter of human nature all utility functions exhibit diminishing marginal utility.

This is the methodological dilemma of individualist-cum-rationalist economics. If the (equilibrium) values of prices depend only on the different utility functions which are exogenously given, then prices are actually determined outside of economics. Whatever determines the nature of the given utility functions ultimately determines prices. Does this mean that economics must surrender to psychology as has often been suggested [e.g. Scitovsky 1976]?

Identifying the individual with his or her psychologically given utility function is a rather sophisticated and subtle type of psychologism. A more blunt and obvious use of psychology would be for us (or our friend the bank robber) to explain the event by claiming that our friend has a

'criminal mentality'. But such a crude psychologism would seem to be our only recourse if we are to avoid the moral dilemmas involved in the explanation based on the logic of the situation. If the robber's choice to rob the bank was a rational one, how can we object?

Crude psychologism also avoids an intellectual dilemma. When our friend (as a bank robber or a consumer) provides an 'acceptable' explanation, one which says that anyone facing that position would choose to do the same thing, the individuality of the situation is revealed to be empty. If any individual would do the same, then there is nothing individualistic about the choice made. Crude psychologism (i.e. the view that behaviour is predetermined by exogenously given mentalities) as an explanation of individual choices may seem to be a way to promote psychology. It is not – it only begs more questions. What determines who gets which mentality? How many different mentalities are there? In the extreme, crude psychologism may even lead us to discard psychology in favour of sociobiology.

If we thus reject crude psychologism, we are then left with our two dilemmas. The moral dilemma (the rationality of one's choice to commit a crime) is not easy to overcome and in the end is more a question of philosophy than of psychology. The intellectual dilemma is the foundation of attempts to promote psychology in the development of economic explanations of individual behaviour. If we allow ourselves to assume that psychologically all individuals are given different exogenous utility functions, then individuality will seem to be preserved in our explanations of rational choice. However, whenever psychologism is adopted as a means of promoting individualism, it is a defeatist methodological stance.

Individualism is in trouble here only because neoclassical economics misleadingly identifies the individual's aims with the individual's psychologically given utility function. Two individuals facing the same prices and with the same income will usually choose different consumption bundles if they have different utility functions. If our problem as economists is to explain a wide diversity of choices made by people in the same income class, then the psychological reasons for why people have different given utility functions would certainly seem to be a promising line of inquiry. But it is not a necessary line of inquiry since one may just as easily presume that the individual's utility function is socially determined.

The traditional emphasis on individualism seems to force an excessive concern for diversity to the point that economists (as opposed to sociologists) tend to overlook obvious social circumstances where diversity is more conspicuous by its absence. Specifically, the problem that should be of concern to individualist economists is to explain widespread conformity whenever considering consumption patterns. In most cultures, each social

role is closely associated with a specific consumption pattern. Accountants or lawyers in similar income brackets will usually have consumption patterns much like their colleagues'. Non-conforming individualism is more the exception than the rule in organized society. For example, corporate lawyers tend to dress alike, belong to the same social clubs, acquire the same ostentatious goods such as expensive automobiles, houses, etc. Moreover, their conspicuous consumption is not a psychological phenomenon but rather it shows how profoundly one's preference ordering is dependent on social structure [cf. Veblen 1899/1934]. In short, one's consumption choices may be determined more by one's social position than by one's personal tastes [see Newman 1972; Hayakawa and Venieris 1977].

UNNECESSARY PSYCHOLOGISM

I do not wish anyone to think from my recognizing that utility functions (or, more generally, personal aims) are matters of sociological inquiry that I am thereby rejecting individualism. Such is not the case. As I have already argued in Chapter 8, social situations and institutions are the consequences of individual choices. All that I am arguing here is that there is no necessity to see deviations from narrow-minded neoclassical economics as expressions of irrationality and hence a demonstration of a need to study the psychology of the individual. Irrationality is easily interpreted as merely an expression of the incompleteness of the description of the logic of the situation facing the individual [*pace* Stigler and Becker 1977]. Perhaps a more complete description might involve psychology but psychology is not a necessity here. An individual whose utility function is completely determined by social conventions is no less capable of making a rational decision than the individual whose utility function is psychologically given. In summary, a successful methodological individualist explanation of the behaviour of a rational decision-maker is a matter of establishing the logical completeness of the decision-maker's objective situation. It is not necessarily a matter requiring the recognition of a possible role for the decision-maker's psychological predisposition.

NOTES

- 1 Peter Earl invited my comment on some papers he was publishing about 'psychological economics' [Earl 1988]. This chapter is based on my contribution [Boland 1988]. Those parts repeated here are copyrighted by Kluwer Academic Publishers and reprinted with their permission.
- 2 See Chapter 8, note 14.

11 Methodology and the individual decision-maker

if a man had sufficient ability to know everything about the market for his labour, he would have too much to remain long in a low grade. The older economists, in constant contact as they were with the actual facts of business life, must have known this well enough; but partly for brevity and simplicity, partly because the term 'free competition' had become almost a catchword, partly because they had not sufficiently classified and conditioned their doctrines, they often seemed to imply that they did assume this perfect knowledge.

It is therefore specially important to insist that we do not assume the members of any industrial group to be endowed with more ability and forethought, or to be governed by motives other than those which are in fact normal to, and would be attributed by every well-informed person to, the members of that group; account being taken of the general conditions of time and place.

Alfred Marshall [1920/49, p. 449]

there is something fundamentally wrong with an approach which habitually disregards an essential part of the phenomena with which we have to deal: the unavoidable imperfection of man's knowledge and the consequent need for a process by which knowledge is constantly communicated and acquired.

Friedrich Hayek [1945/48, p. 91]

While it is one thing to recognize the role of knowledge in a neoclassical explanation, those few who do will usually fail to deal with how the knowledge is acquired. Unfortunately, almost all neoclassical models which do recognize the state of the decision-maker's knowledge either ignore the decision-maker's methodology or implicitly adopt Inductivism, a methodology that was refuted two centuries ago. What is missing in neoclassical models which do recognize the state of the decision-maker's knowledge is an explicit discussion of the decision-maker's methodology for learning or otherwise acquiring knowledge.

Traditionally, methodology has been of interest primarily to historians

of economic thought or to those few economic theorists who view methodology as an instrument to help them explain their theories to other economists. In effect, we might say that methodology has always been ‘meta-theoretical’. This instrumental view is in contrast to that which I wish to present in this chapter. Here I argue for a necessary *theoretical* role for methodology, a role implied to a certain extent in some of Hayek’s papers. To be more general, we could say that any economic theory which recognizes a need for knowledge in decision-making must in some way imply a role for methodology because, as Hayek explicitly said, to explain any decision the economist must also explain the ‘acquisition’ of the knowledge needed to make that decision. In my 1982 book and elsewhere I have argued that while we must recognize the importance of knowledge acquisition, or learning, we must also avoid predisposing our conception of knowledge and its acquisition in favour of only one view of learning methodology – namely, inductive learning.¹ My plan for this chapter is to begin by presenting Hayek’s views, which, though they are often employed in recent literature, are frequently misunderstood. I will end by presenting my alternative view.²

EPISTEMICS IN HAYEK’S ECONOMICS

Ludwig Lachmann [1982] has argued that one of the neglected contributions of the Austrian School was their view that ‘the dissemination of knowledge plays a prominent part in the process of competition’ [p. 636]. Hayek’s [1937/48] argument in favour of capitalist competition depended on the assertion that this competition only requires a minimum amount of knowledge consisting primarily of easily available private knowledge (of one’s personal aims and limitations) and augmented only by the public knowledge disseminated by the market. This view later led Hayek [1945/48] to argue that adequate private knowledge is obtainable in practice; but ‘scientific’ knowledge, even if available, is usually inadequate without the individual decision-makers’ private knowledge. Specifically, the virtue of making decisions based on market-disseminated information arises because even though the day-to-day information from the market can be wrong (e.g. disequilibrium prices), the process that leads to an equilibrium *necessarily* generates the correct information. Hayek thus distinguished between possibly false practical knowledge (Lachmann’s ‘knowledge how’) and true ‘scientific knowledge’ (Lachmann’s ‘knowledge that’ or ‘propositional knowledge’).

Hayek complained that practical knowledge has always been considered inferior relative to scientific knowledge. More important, Hayek implied that if scientific knowledge were actually true and certain it would still play

no significant role in the economic process because this economic process is concerned with economic problems which arise from changes in such things as tastes. If tastes continue as before, there are no allocation problems to be solved. In the absence of new problems, there would be no need to make new decisions or thus to learn anything new. For Hayek, scientific knowledge is knowledge of general rules and thus is inherently static. In effect, scientific knowledge is irrelevant – particularly when it is considered true and certain. Thus, the recognition of possibly false practical knowledge is essential if we want to understand the competitive market process.

This leads Lachmann to conclude that, if knowledge is to play an explicit role, Hayek’s two types of knowledge must be clearly recognized. Moreover, we need to see that what the Austrians were saying is that ‘practical knowledge’ (or ‘knowledge how’) is what must be explicitly recognized in the explanation of an individual’s decision process. According to Lachmann, logicians only recognize knowledge when it is certain. Thus, he argues, whenever ‘strict logicians’ analyze the decision-making of market participants they miss the point because, according to Hayek, the market overcomes the problems of (potentially) uncertain practical knowledge.

The importance of the Hayek–Lachmann knowledge distinction

Recognition that any individual’s knowledge can be false is central to Hayek’s argument in favour of focusing on market-disseminated knowledge that is potentially uncertain rather than on certain scientific knowledge. For Hayek, scientific knowledge is irrelevant to our understanding of the market economy. Whenever an individual’s knowledge is false, the empirical evidence generated in the market by actions based on false knowledge actually leads towards the truth about the market. For example, over-estimating market supply at the current price leads to some individuals having to bid the price up and thereby inadvertently to reduce the shortage. That is, acting upon false (‘disequilibrium’) prices unintentionally leads to the creation of true (equilibrium) prices which can be the basis for realizable plans to maximize profits or utility. A competitive market economy thus creates its own adequate practical knowledge. Still, this view of the adequacy of market-generated information presumes that all markets are inherently stable. I shall argue that it is the presumption of stability as well as the presumption of the necessity of induction for certain knowledge that gives ‘scientific’ knowledge a less significant role than practical knowledge.

To understand the importance of Hayek’s claim consider two possible

states of one market from the perspective of contrasting the acquisition of ‘certain’ knowledge with the process of ‘learning by doing’ which, as Lachmann notes, underlies Hayek’s viewpoint. Let the market be characterized by quantity discount selling. That is, both the supply and the demand curves are downward sloping. Following the traditional assumption of Walrasian market behaviour, excess demand at a quoted price always leads at least one buyer either to offer a higher price to attract more of the scarce supply or to give up trying to maximize his or her utility for the quoted price. Whenever the supply curve is steeper than the demand curve, the usual conception of the competitive process logically leads to the elimination of the false (disequilibrium) quoted prices. In this Walrasian stable world, Hayek’s practical knowledge is provided coincidentally with the convergence to an equilibrium. However, whenever the demand curve is steeper than the supply curve, Walrasian price competition would only aggravate the situation. Whenever there is excess demand, raising the price causes an even greater excess demand. Nevertheless, if an auctioneer in charge of the market could ‘scientifically’ calculate the respective demand and supply curves and thereby ‘scientifically’ calculate the price at which they intersect, then he or she could simply start the transactions at the intersection where demand equals supply. Thus, even though the market might embody an inherently unstable Walrasian competitive process, all plans would still be realized – that is, everyone could maximize their utility or their profit whenever the price was correctly set *in advance*. (Note that I could have presented all this with upward sloping demand and supply curves or with excess supply situations.)

This example suggests that Hayek’s [1945/48] view meant that true scientific knowledge (when attainable) was like the knowledge that the successful Walrasian auctioneer would require. While capable of achieving an equilibrium, true and certain scientific knowledge is unnecessary if the market is stable. In a stable market, piecemeal or trial-and-error bidding will always tend towards the equilibrium and never away from it. That is, if the market is stable, then the participants will always learn correctly from their mistakes. As my example shows, Hayek must be presuming the market to be stable – which it would be whenever the demand curve is downward sloping and the supply curve is upward sloping. Furthermore, given the common presupposition that the only method for acquiring the certain knowledge which the auctioneer needs to set the correct price would involve induction, such certainty requires too many observations to be a realistic view of any economy whenever there is the potential of an unstable market. In short, either the market is inherently stable, in which case in Hayek’s view adequate practical knowledge is provided in the progress of the competitive process, or the market is inherently unstable

and thus a viable (equilibrium) price will be provided *only if* someone (such as an auctioneer) can acquire certain knowledge.

The methodological problem of the Hayek–Lachmann distinction

It is all too easy to criticize neoclassical economics for confusing practical with propositional knowledge. Nevertheless, we still need to appreciate a major difficulty with this Hayek–Lachmann distinction. This distinction is based on a mistake about ‘scientific’ or propositional knowledge. This type of knowledge cannot be distinguished from everyday practical knowledge. Both ‘types of knowledge’ can be true or false. It is necessary to recognize the role of methodology in decision-making precisely because the knowledge of the individual decision-maker – whether it is scientific or otherwise – can be false.

If one is not careful, the Hayek–Lachmann distinction between practical and propositional knowledge can be used to perpetuate reliance on a false theory of knowledge – Inductivism.³ For example, Hayek’s claim that certain scientific knowledge will always be unattainable (or be otherwise inadequate) presumes that for anyone’s knowledge to be true it must have been acquired by some inductive process. That is, there is the presumption that since the knowledge needed by an individual decision-maker is more intimate and less general, it can be more certain. Both Hayek and Lachmann have implicitly recognized that, simply stated, knowledge can be false and that, in the absence of induction, there is no need to consider ‘scientific knowledge’ any more reliable than private knowledge. But such a recognition need not imply an endorsement of Inductivism.

Today, few would so easily espouse any obvious uses of induction. Rather, most would argue that we can make do with a watered-down approach that replaces inductive proofs or inductive learning with knowledge based on convenient acceptability criteria such as those found in econometric practice. The problem of knowledge acquisition which Hayek discussed in 1937 can be too easily transformed into a standard Conventionalist theory-choice problem.⁴ Specifically, it is tempting to think that all individuals participating in the market are Conventionalists who are able to participate simply through adopting adequate criteria to determine the equilibrium price so that they can proceed to maximize as usual. That is, even with insufficient evidence all successful decision-makers have supposedly employed adequate criteria to choose correctly between imperfect theories. This Conventionalist theory of knowledge is only a marginal improvement over the older Inductivism. Appealing as choice-theory may be to economists, it would be a mistake to think that only one theory of knowledge would ever be chosen at any point in time

and hence that the decision-maker's theory of knowledge and methodology can be taken for granted.

THE METHODOLOGY OF DECISION-MAKERS

Economic theorists must recognize many different views of knowledge and methodology since the decisions based on them will usually lead to different patterns of behaviour. I will try to demonstrate this proposition in the narrow context of the typical neoclassical theory of decision-making.

Demand depends on the demander's theories

Consider textbook ordinal demand theory. According to the textbooks, the demand curve for any individual is merely the locus of all price–quantity combinations at which the individual's utility is maximized for the given income and prices as well as the given utility function. How does the individual know all the givens? Prices and income may be sufficiently objective that it does no harm to argue that the individual knows them, at least momentarily, when making planned purchases. On the other hand, assuming that the individual knows his or her private utility function begs far too much. A particular bundle of quantities of goods actually can be said to be better than any other (in order to explain the choice of that bundle) only if the individual is presumed to compare that bundle with all other conceivable bundles. Of course, given a typical utility function and a little calculus such a choice can be justified. But knowledge of the utility function is equivalent to comparing all pairs of bundles. Like any other universal statement, this one cannot be shown to be true in real time since such a demonstration would require an infinity of evidence (and time). But, of course, such an inductive proof is actually unnecessary.

In ordinal demand theory all that the individual needs is an assumption about the nature of his or her utility function. Like any other assumption, we assume that it is true only because we do not know whether it is actually true. In the case of the consumer, the plans for purchases must be made on the assumption of a particular utility function. The assumed utility function can be true or false. How does the individual actually know that he or she is maximizing utility with his or her latest purchase? That is, how does the individual learn what the true nature of his or her utility function is except by making purchases? It is precisely the 'learning by doing' situation that Lachmann mentions [1982]. The individual's pattern of purchases must over time reflect his or her approach to learning the true utility function. Thus, methodology must play an integral part in our explanation of demand.

Market demand depends on the consumers' methods of learning

Several alternative methodologies might be employed in the process of interacting in the market. In addition to the methodological doctrines identified in Chapter 6, namely Apriorism, Inductivism and Scepticism, I will now include the Conventionalist methodology mentioned above and the well-known methodology of Milton Friedman which I have elsewhere called Instrumentalism.⁵ Using these alternative methodologies, let us now consider various types of consumers facing the same static market situations (in which all exogenous variables are fixed). Assume that all consumers have identical incomes and identical true utility functions. However, let us also assume consumers neither know these functions *a priori* nor do they share the same opinions about their utility functions.

An inductivist consumer. If one has to learn whether one is actually maximizing utility by comparing actual bundles consumed, how does one decide the issue? Some believe that you should not jump to conclusions and thus that you never know the correct utility function until you provide an inductive proof – all done without ever making any assumptions. Such a consumer will always be forced to keep trying new bundles. Although facing a static situation, an inductivist consumer would appear never to be satisfied.

A sophisticated inductivist consumer. Few would think today that anyone just collects the facts without thinking ahead. But, even if one arbitrarily adopts a theory of the nature of one's utility function, one can still never be satisfied until that theory is proven true. This approach can also lead to the appearance of unstable buying patterns. Nevertheless, if the theory is true, over time we should expect to see the buying pattern converging to a stable point.

An Apriorist consumer. Since Apriorists begin 'knowing' the true utility function (either by assumption or introspection), no market evidence could ever cause them to change their mind. The pattern is not only stable but invariant.

A conventionalist consumer. Given the many conceivable utility functions, how does one pick one to start with? If one gives up the requirement of a complete proof, various criteria can be adopted to appraise one's theory of one's utility function. In effect, the consumer need only be a good econometrician. No claim is made that the true utility function is found, but only the best available according to the evidence and the adopted criteria. The pattern of consumption behaviour will depend on the method used to process data. For example, how many tests of current theory are required before concluding one knows or does not know the

true utility function? Competent conventionalist consumers might test their theory every third trip to the market and still be able to explain away numerous refuting observations before being forced to change their pattern of behaviour.

A scepticist consumer. At the other extreme there are consumers who are always sceptical about proving any theory true. These consumers will change their mind about their personal utility functions the first time some purchased bundle does not meet their expectations. While the conventionalist consumers can tolerate occasional disappointments and thus seldom alter their consumption patterns, the scepticist consumers will be jumping all over the map.

An instrumentalist consumer. It is not always clear what instrumentalist consumers might do since the truth of their theories of their utility functions supposedly does not matter. They might act *as if* they liked their purchases when indeed they detested them. As long as their social role does not change, one could predict that the instrumentalist consumers might continue to buy the bundle of goods that is most useful for their chosen careers. Any change in career will be accompanied by a change in the consumption pattern [see again pp. 150–2].

These crude examples should be sufficient to demonstrate the potential role for methodology in the explanation of decisions within the domain of neoclassical theory. When it is recognized that one's utility function is not known *a priori* and must be learned, it must also be understood that an appreciation of methodology is necessary to explain the pattern of behaviour in the competitive process of Hayek and Lachmann. In the typical neoclassical model two individuals with identical utility functions, identical incomes, and facing the same prices, would choose the same bundles of goods. The examples above show that this conclusion fails to hold if they try to learn their (identical) utility functions using *different* learning methodologies.

The methodology of stable markets and convex preferences

If it is now recognized that Hayek's view of the competitive process gets to the heart of the neoclassical market then it should also be easy to see that his view runs parallel with my alternative view of the decision-maker. Hayek's view, unlike neoclassical economics, does not depend on the actual achievement of an equilibrium. It depends on the progressive learning that must take place by virtue of the presumed stability of the market in question. Hayek did not actually try to explain how individuals learn what is necessary to make a market decision. Instead, he took

inductive learning for granted. The same thing could be said for the traditional neoclassical theory of the consumer. While convexity of preferences is usually explicitly asserted or assumed, no discussion is provided to indicate how the individual learns which bundle will actually maximize his or her utility. If the individual's preferences are actually convex, then I would suggest that the individual's learning process is taken for granted because neoclassical theorists also take inductive learning for granted. If they do not, then there is no reason to believe that the individual will ever be maximizing his or her utility. If my claims are correct then we can safely predict that much methodological work still must be done even within the otherwise successful neoclassical theory of decision-making.

NOTES

- 1 The view that people learn inductively is a variant of the doctrine of Inductivism which I discussed in Chapter 1, note 5. According to this view whenever one collects any fact needed to obtain the required inductive proof, one is learning. Over three centuries ago this view of knowledge and learning was considered the essence of enlightenment since it countered those who required religious authority for knowledge claims. Unfortunately, the logical foundation for the enlightened view was undermined by the late-eighteenth-century arguments of David Hume and others who noted that such a view of learning leads to an infinite regress. If all knowledge must be based only on the facts, then it calls into question how we learned that knowledge must be inductively proven. Whatever our answer, it begs a question of methodology which must also be inductively proven but this leads to a further question requiring an inductive meta-methodology, and so on. But worse, given this infinite regress, even when the knowledge is true, there may be no way to prove it true. Failure to prove its truth, inductively or otherwise, does not prove the knowledge is false [see further Boland 1982a, Chapter 11].
- 2 Israel Kirzner invited me to contribute to a book of essays honouring Professor Lachmann [Kirzner 1986]. The remainder of this chapter is based on my contribution, parts of which are reprinted here by permission of New York University Press.
- 3 See again the discussion of Inductivism in note 5 of Chapter 1.
- 4 I discussed this view of knowledge in note 20 of Chapter 2.
- 5 Instrumentalism, as it is practiced in neoclassical economics, views theories as *useful instruments* either for understanding the economy or for assisting policy-makers. The key element of Instrumentalism is the view that theories should not be judged on whether they are true or false but on whether they are useful for the purposes at hand. Policy-makers are only required to act *as if* their theories are true. See further Boland [1979a; 1982a, Chapter 9].