The methodology of Lowe's Political Economics and the reconstruction of Classical Political Economy*

M. Forstater
Department of Economics
Gettysburg College
Gettysburg, Pennsylvania, USA

Attempting to situate the contributions of Adolph Lowe in relation to the revival of Classical Political Economy associated with Sraffa's works, the paper reviews some points of the Garegnani-Robinson debate on history, theory and methodology. Its main argument is that an adequate consideration of Lowe's analysis reopens methodological questions related to that revival. A possibility for a reconciliation between Sraffa's and Lowe's contribution is also suggested.

* I have benefitted from discussions with Robert Heilbroner, Mark Knell, Heinz Kurz, Gary Mongiovi, and Edward Nell. The usual disclaimer concerning responsibility for errors especially applies.
This paper explores issues arising in the attempt to situate the contributions of Adolph Lowe in relation to the revival of Classical Political Economy associated with Sraffa’s (1951) reinterpretation of Ricardo and the publication of *Production of Commodities by Means of Commodities* (1960). Following some introductory remarks on Lowe’s structural analysis and its relation to his methodological concerns, the paper turns to a review of the points of contention in the discussion between Pierangelo Garegnani and Joan Robinson on history, theory and methodology. It is argued that adequate consideration of Lowe’s analysis reopens methodological questions related to the revival of classical economics. In the course of the argument, those relevant aspects of Lowe’s positions which have not been as emphasized elsewhere will be highlighted, and a possibility for reconciling Sraffa’s contributions with those of Lowe is suggested.

**STRUCTURAL ANALYSIS: THE “SECOND STAGE” OF THE CLASSICAL REVIVAL**

A survey of Lowe’s contribution to the structural analysis of capitalism and its relation to the classical approach would take us back to Kiel University in the 1920s, where Lowe and his colleagues revived the treatment of production as a circular process. This entailed a critique of Boehm-Bawerk’s “linear imperialism”, but led ultimately to what Gehrke and Hagemann have called “a unique synthesis of Austrian sequentiality and classical... circularity” (1990: 24).

Key here was Lowe’s revision of Marx’s schemes of reproduction by expanding Department I into two sectors, producing for the capital and consumption goods sectors, respectively, demonstrating the analytical fruitfulness of isolating the machine tools sector in approaching questions of accumulation, employment, and structural and technological change. Of particular significance is the contribution to the analysis of fixed capital and technological unemployment in relation to the path of economic growth. This work, spanning over fifty years and culminating in *The Path of Economic Growth* (1976), has been viewed as opening the “second stage in the systematic work of reconstruction of the Classical approach”, the “first stage” being the work of Sraffa and his followers on value and distribution (Kurz, 1984: 211; cf. Hagemann, 1992: 236).

**THE METHODOLOGY OF LOWE’S POLITICAL ECONOMICS**

**THE “SECOND STAGE” AND THE QUESTION OF METHOD**

Lowe’s contributions in the area of structural analysis have always been closely related to his methodological concerns. In the 1920s, while his analysis was still conducted within the traditional deductive methodological framework, Lowe rejected the static equilibrium models of neoclassical theory as unsuitable for analyzing a system in which the most prominent empirical feature is the business cycle (1). The extension of the “prevailing analysis into a dynamic model” was thought by Lowe at the time to be the key to a more realistic theory of capitalism (1977[1965]: vii).

The idea that there exist any universal economic “laws” was abandoned by Lowe in the 1930s, when he adopted the position that economic theories are historically relative, their differences deriving primarily from the selection of data depicting structural features that represent alternative historical economic systems. Thus, conventional market generalizations such as the “law of supply and demand” were identified by Lowe as describing a very specific set of socio-historical circumstances, and hence not applicable to modern industrial capitalism. Lowe’s view was not simply that it was necessary to develop a different theory, the assumptions of which more adequately represented the structure of modern capitalism; at this stage, he began to put forward the view that the system displayed sufficient regularity for application of the traditional deductive method. It was this position which he subsequently abandoned, ultimately taking the view that historical changes in the structure of capitalist society have altered the object of economic inquiry in such a way as to necessitate the abandoning of the traditional methodological approach, and requiring that analysis henceforth be conducted within an alternative, “instrumental” methodological framework.

---

(1) See, in particular, Lowe (1926), in which he takes the position that a theory of business cycles is possible because the underlying economic phenomena from which they emanate are regular and reliable.
"HISTORY VERSUS EQUILIBRIUM"

The revival of Classical Political Economy associated with Sraffa also gave rise to a discussion of the relationship of methodology, theory and history. It will be useful to recall some issues raised in the exchanges between Pierangelo Garegnani and Joan Robinson, since they may be said to exemplify the general themes of that discussion, consideration of which might serve as a useful point of departure in highlighting the distinguishing features of Lowe's analysis.

The work of both Robinson and Garegnani has been central to the critique of neoclassical economics and the building of a positive theoretical alternative in its place. Robinson paid considerable attention to the task of wedding the theory of effective demand of Keynes and Kalecki with the analyses of accumulation and technical change of the classical economists and Marx. She became pessimistic, however, about the possibility or desirability of crafting a long-period theory of employment, and increasingly emphasized the inadequacy of analyzing changes through the comparison of equilibrium positions for historical economic processes characterized by the uncertainty of expectations and heterogeneous capital (see, e.g., Robinson, 1974; 1975; 1977).

Garegnani criticized Robinson for failing to properly distinguish between the method and the theory of the early marginalists, the method being the same as that of the classical economists and Marx. According to Garegnani, the marginalist theory is the key to understanding the notion of demand and supply equilibrium, a term inappropriate for describing the classical notion of a natural or normal position, which is not associated with the full-employment operation of the system (Garegnani, 1983 [1976]: 143-44; 1989 [1979]: 356 ff; see also 1983 [1979]).

Garegnani argued that Robinson's reliance on the uncertainty of expectations and the non-malleability of capital to explain the failure of the economy to reach equilibrium reveals her implicit acceptance of the existence of a demand and supply equilibrium (Garegnani, 1983 [1976]: 144; 1983 [1979]: 75; 1989 [1979] 350-351, 353, 359-360). She underemphasized the importance of reswitching and reverse capital deepening in the name of historical time (ibid.: 349, 353, 359), but reversible movements in time are not necessary in order to analyze changes by comparing normal positions (ibid.: 352).

In Garegnani's view, since the minimum condition necessary for any theory - logical consistency - is not satisfied by the marginalists,
We shall consider what these conditions are in some detail momentarily. But first: what was Robinson's reply to Garegnani's charge? She claimed that she didn't understand what all the fuss was about:

I am as lost to understand what this controversy is about... Garegnani prefers to attack the neoclassical position from another angle. I long since welcomed his critique and I do not understand why he wants to disallow mine (Robinson, 1989 [1979]: 361).

What Robinson failed to comprehend (or so she claimed) was that since Garegnani views the method of the classical and early marginalist schools as fundamentally the same, a methodological critique of the marginalist approach is one and the same as a critique of the classical approach he is seeking to revive. Robinson's methodological position, he warns,

if strictly applied, would... hinder the work of theoretical reconstruction. It would prevent the use and development of the firm basis for such work provided by the approach to distribution and accumulation of the classical economists. (Garegnani, 1989 [1979]: 133-134)(2)

What's more, Garegnani emphasizes that denial of the existence of conditions appropriate for the traditional method "would severely limit the possibilities of economic theory" (Garegnani, 1989 [1979]: 133-134), emphasis added; see also Eatwell, 1982; 211; Magnani, 1983: 249. But Joan Robinson and others could not see, could not accept, or did not confront head on the fact that the impossibility of theory was implied in their methodological position. Those that did accept such a fate resigned themselves to criticism, description, or even nihilism.

Here additional factors come to the fore which distinguish Lowe's argument from others that may appear to be similar. Lowe insists on taking his analysis to its logical conclusion: that economic theory in the conventional sense is no longer possible (1969a: 15; 1969b: 180; 1987 [1992]: 236; see also H. Milgate, 1966). But rather than abandoning economics to mere description, he proposes an alternative methodology in which theory plays an indispensable role, i.e. he offers a constructive alternative: instrumental analysis.

(2) Bharadwaj echoed this sentiment when she wrote that "Robinson's methodological critique could divert attention away from the difficulties that are exclusive to neoclassical theory" (1991: 99, emphasis added).

THE APPROPRIATE APPLICABILITY OF THE LONG-PERIOD METHOD

Before turning to the details of Lowe's instrumentalism, we must return to the specification of the conditions for the appropriate applicability of the long-period method. What are these conditions? First, forces which are "persistent" or "permanent", must be clearly identifiable and distinguishable from those which are "transitory", "temporary" or "accidental" (1).

Second, there must be forces of a sufficient strength, and operating to a sufficient extent and for a sufficient duration, capable of eliminating, on average, deviations of actual magnitudes and positions (Garegnani 1983 [1976]: 133-34; 1989 [1979]: 355). Third, changes in the forces determining the long-period positions must be "sufficiently slow as not to endanger the gravitation towards the (slowly moving) long-period" magnitudes, or, if these forces should change rapidly, they must be "once-for-all changes" if we are to expect gravitation to the new long-period positions to reassert itself (Garegnani, 1983 [1976]: 132).

In addition, it is often not emphasized that proper application of the long-period method must begin with historical observation (Bharadwaj, 1990: 93; 1991: 81, 85, 88-89). From the empirically observed historical base persistent forces are identified and distinguished from transitory ones; from such perceived regularities, theoretical magnitudes and positions are conceived which actual magnitudes are said to "tend to and gravitate about" (Garegnani, 1989 [1979]: 346, 355).

It has been rightly stressed that the "distinction between market and normal position was not made in terms of a temporal division... The distinction was rather in the character of the causal forces and their effects" (Bharadwaj, 1990: 66; cf. Milgate, 1982: 22). It seems clear, however, that there is not a complete independence from the temporal dimension. The "long-period" does not refer to a long period of time, but it does refer to a period of time in which the forces that determine normal positions are "constant or changing slowly" (Eatwell, 1987: 599), "and not by frequent jumps or jerks (Milgate, 1982: 22).

1) The task of identifying, and distinguishing between, stable and transitory forces raises the question: how are we to know whether phenomena which we have been considering with some confidence to be transitory may not be part of a "new" permanent trend which is the result of structural change? As Pasinetti and Scacchi point out, in the short term this is often not possible (1987: 525). It was in this regard that Bharadwaj wrote that the "question of how to distinguish between transitory variations and variations in natural values remains open and calls for more research" (1990: 94).
24 M.

Thus, while it is emphasized that the "persistent" and "permanent" forces that ensure such requirements will be met are identified on the basis of their "qualitative intervention into the system" (Bharadwaj, 1991: 90), the qualities of "persistence" and "permanence", even if conceived of in relative terms, evidently still must be subject to conditions concerning not only the intensity and extent of their influence, but their duration as well. The point here is not that the long-period refers to a specific length of time, but rather that the method requires important assumptions regarding the pace and character of the evolution of the theory's socioeconomic data (cf. Lowe, 1935: 93ff; 1936:24).

THE LAW OF SUPPLY AND DEMAND:
STRUCTURE, BEHAVIOR, AND MOTIVATION

The ability to formulate generalizations that can serve as highest level principles may from which deduction can proceed requires that the research object exhibit some minimum degree of orderliness. The absence of such minimum order prevents, at the very outset, the generalizations necessary for the employment of the long-period method, i.e., the conceiving of the theoretical normal magnitudes and positions becomes impossible, and the above conditions for the appropriate applicability of the long-period method are not met (Garegnani, 1989 [1979]: 355; Eatwell, 1987: 599; Schefold, 1989: 25-26; Bharadwaj, 1990: 66).

As Lowe has argued, the research object of economic science (and social science in general) differs from that of the physical sciences in that the units of analysis of the former cannot legitimately be treated as "insensitive particles responding blindly though lawfully to blind stimuli" (1977 [1965]: 61). Rather, in the social sciences we deal with "purposeful actors who move only after they have interpreted their field of action in terms of their goals and their common-sense knowledge" (ibid.; see also Heilbroner, 1973: 133-134; 1991: 468-469).

In Production of Commodities by Means of Commodities, Sraffa simply states that "the surplus (or profit) must be distributed in proportion to the means of production (or capital) advanced in each industry", i.e., that "the rate of profits... must be uniform for all industries" (Sraffa, 1960: 6, emphases added). It was up to others to later elaborate the classical notion of competition as the order-bestowing force that brings about this tendency to normal profits and prices of production (see, e.g., Clifton, 1977; Eatwell, 1982; Semmler, 1984).

The behavioral requirements of the classical notion of competition are those stated in the "law of supply and demand" (Garegnani, 1983 [1976]: 131; Eatwell, 1982: 207; Schefold, 1989: 27; Bharadwaj, 1990: 94). This concept "should not be confused with supply and demand theory" or related to "supply and demand functions" (Eatwell, 1982: 207). The "law" here is intended to encompass both the "Law of excess profitability" and the "Law of excess demand", which state that:

(i) the output of a commodity is expanded or reduced (through entry or exit of firms) whenever excess of price over cost (including normal profits) is positive or negative (Law of excess profitability); and, (ii) the price of a commodity is raised or lowered whenever there is an excess demand or supply on the market ("Law of excess demand"). (Flaschel and Semmler, 1989: 3, quoted in Walsh, 1992: 14).

What are the structural and/or motivational factors that compel and permit such overt behavior as stated in the law to a degree sufficient to establish its regularity and reliability? The primary motivational factor thought to give rise to conduct specified by the law of supply and demand in classical theory is provided by the assumption of profit (receipt) maximization and cost minimization, or what Lowe calls the "extremum principle". This does not mean that one must take the position that the extremum principle describes an invariant, innate, and universal characteristic of human nature. One may argue, as Lowe himself long has, that behavior and motivation are socially conditioned (see, e.g., 1977 [1965]: 62). The necessary behavioral and motivational patterns may be seen as enforced by the very structure and logic of the capitalist mode of production. But explaining the behavior rather than assuming it, or rooting it in the institutional context rather than human nature, does not constitute independence from any explicit or implicit behavioral requirements, however "minimal" or "reasonable" they may

\footnote{There is an assumption of cost-minimization in Part III, but this is in the context of laying the foundation for an internal critique of neoclassical theory.}
be. To argue that there are no behavioral or motivational requirements in the classical notion of competition would be tantamount to stating that tendency to normal profits and prices of production is consistent with any and all possible behavioral and motivational patterns.

It is well-known that Lowe argues that modern industrial capitalism no longer provides the types of social and natural pressures that enforced the extremum principle in the Classical stage of early industrial society (see, e.g., ibid.: 47). It would be a mistake, however, to think that his argument stands or falls with the absence or presence of the extremum principle. In fact, Lowe argues that even if receipt maximization/cost minimization continues to be dominant, this is in no way a sufficient condition to guarantee the necessary behavior establishing the minimal orderliness required for the appropriate applicability of the traditional deductive method (ibid.: 46; 1969a: 12).

A problem arises from the fact that, under contemporary conditions, the same maximizing or minimizing incentive can result in a wide range of (even diametrically opposed) behavioral responses (Lowe, 1951: 421ff; 1977 [1965]: 47-48; 1969b: 180-181). Thus, even if motivations consistent with the extremum principle are assumed, this in no way assures conduct in accord with the law of supply and demand. It is not sufficient for the "economic man" construct to describe mere motivations; it is "behaviour in bargaining" which either conforms to or contradicts conduct specified by the law (Lowe, 1935: 52). Lowe has continuously stressed the fact that "the understanding of motives does not by itself constitute a safe basis for postulating any specific course of action as necessary, that is, causally exclusive" (1942: 436):

Unfortunately, not even in a completely rational world – in the sense of one completely motivated by pecuniary considerations – would actions in accord with our law rise to the level of causal necessity. Rather it has to be admitted that calculation of pecuniary gains often suggests behavior that sharply contradicts its propositions. From all this we have to conclude that neither an understanding of human motives in general, nor the special criterion of the pecuniary motive, entitles us to predict any one course of action as... normal. (ibid.: 437)

At the same time, it is not possible to prove that "behavior counteracting the law of supply and demand always violates the profit principle" (Lowe, 1951: 421-22). These exceptions are of a very different nature than those which arise due to motivations contrary to the extremum principle. There, ends other than pecuniary ones are selected; in these cases, motives entirely consistent with the extremum principle are expressed in conduct inconsistent with the law of supply and demand.

Furthermore, the order-bestowing properties of the law of supply and demand are not unleashed as a result of simple conformity of individual conduct to the behavioral stipulations of the extremum principle, but rather arise from the regular behavioral patterns resulting from the aggregate of individual behaviors of all market participants (Lowe, 1935: 60-61; 1951: 411-412). Lowe stresses that all individuals must not only themselves obey the extremum principle, they must expect others to do so as well (ibid.: 415n10).

Each and every act of material provisioning entails a sequence of sub-activities requiring a "chain of interlocking decisions" (Lowe, 1942: 439-40). For decisions, or, perhaps more precisely, behavior to interlock in this manner, each market participant must be able to predict the response of all other participants to their own decisions or behavior (ibid.: 442, 446; 1951: 412). Otherwise there will be no reason to expect that one's actions will result in the intended outcome. For Lowe, then, behavioral patterns consistent with the law of supply and demand require not only the intention of individuals to behave in conformity with the law, but their expectation that others will behave likewise (1977 [1965]: 47-48; 1969b: 180-181).

All of these conditions, as well as others required for the establishment of the behavioral patterns necessary for the reliable operation of the law of supply and demand, imply for Lowe a system exhibiting a very specific concatenation of structural features. Stabilizing expectations, for example, require a technological structure of production enabling quick responses to changing market conditions:

The faster the required adjustment can be carried out, the nearer to the present are the relevant future dates, and the smaller the danger that uncalculable events will interfere... It stands to reason that the reverse is true of a highly immobile system, where adjustment takes considerable time, with the result that the relevant dates are shifted to a distant future, and where the input of large indivisibilities raises the total costs of adjustment. (Lowe, 1951: 429; cf. 1969a: 13-14)

High degree of elasticity of production for Lowe is a relatively more appropriate description of the technical structure of "the liberal society of early capitalism" than that of modern industrial society (1935: 59; 1977 [1965]: 68ff; 1969a: 11ff). Small scale, labor-intensive production carried out by independent producers with low (and other) capital costs, operating at low levels of (relatively slowly
changing) mechanization, makes for greater mobility and therefore a higher degree of adaptability to market variations (ibid.). The large scale production of modern industrial capitalism, on the other hand, with its huge fixed costs, highly mechanized capital-intensive methods, rapidly changing technologies, long-term financial obligations, and thus an highly specialized capital equipment, is characterized by great immobility and thus an inability to make quick adjustments (Lowe, 1935: 57, 87-88, 109, and passim; 1977 [1965]: 68ff). Furthermore, Lowe views these differences as being at the root of a whole series of social and institutional transformations that form nothing less than the "reorganization of the Western social system as a whole" (1935: 128).

As a result, extra-systemic factors, or "escapements", which historically served to compensate for system instability, are no longer capable of meeting this task (Lowe, 1977 [1965]: 65-66, 77-78).

IS MODERN CAPITALISM A DIFFERENT, BUT STABLE, SYSTEM?

Some of those who have been central in the reconstruction of the classical approach have acknowledged that contemporary conditions require the theorist employing the long-period method to go back to the ground level of historical observation on which scientific generalizations are based. They recognize that the object of economic reasoning is not invariable and that changing conditions must be taken into account. Scheffold, for example, has stated that:

Great traditional causes for fluctuations - such as bad harvests, wars, changes in fashion - still exist, but they have to be supplemented by endogenous economic factors, speculation in particular. They were only cursorily analysed by the classical economists because their discussion seemed to belong not to the core of pure theory but to applied economics, if not to economic history... We can thus see that the theory of "natural prices" - or as it is better to call them - prices of production remains topical, although the mechanism of "supply and demand" and the forces of competition may have changed as much as the relations governing distribution since the time of the classicals. (Scheffold, 1989: 27-28)

Bharadwaj has put forward the view that the "perception of the classical writers was probably too simple for today's more complex world of finance and monopoly capital" (1991: 96). It was in this regard that she wrote:

Today, we have reasons to believe that uncertainty and expectations plays a different role in advanced capitalist economies from that envisaged by the classical writers and with the expanse of financial capital and financial developments, the objective basis for the formation of expectations and the corresponding behavioral premises are now perhaps altered. We need to discover the objective bases of different states of expectations and we need to know what systematic objective outcomes arise from these different states of expectations (Bharadwaj, 1991: 95, original emphasis).

These positions, it should be emphasized, do not amount to an abandonment of the long-period method. The recognition of the necessity to continuously be involved in the essential first step of observing historical tendencies obviously could lead to the position that historical-structural change compels the economic theorist to alter the content of the categories of "permanent" and "transitory", without abandoning the method. In other words, the persistent phenomena may be changing, but persistent phenomena are still identifiable, and distinguishable from transitory phenomena. If these and the other conditions required for the appropriate applicability of the long-period method are being satisfactorily met, then it can still legitimately be utilized (5). This was in fact the position held by Lowe from (roughly) the thirties through the fifties (see 1935; 1936; 1942; 1951; 1952). While convinced that structural changes in the system had resulted in alterations of the objective determinants of the behavioral and motivational patterns required for the validity of traditional economic "laws", Lowe insisted that capitalism was still a "system and not a mere aggregate of incoherent bargaining transactions" (1935: 129).

Since the end of the fifties, however, Lowe has explicitly rejected the argument that the historical changes entailed in the transformation from the classical stage of early industrialization to modern industrial capitalism are indicative of no more than a shift from one kind of stable system to another (see, e.g., 1969b: 181). Rather, the "deductive method [is] inapplicable... [because] neither the macro-movements of modern markets nor the underlying micro-patterns of behavior exhibit the degree of orderliness that is essential for scientific generalization" (ibid.: 180).

Lest it be thought he is making the argument that the modern industrial system is characterized by complete disorder, Lowe proposes that we conceive of a continuum of observations leading from "perfect
order” to “perfect disorder”. It does not then follow, he states, that this is also a “continuum of decreasing scientific tractability”:

Rather the scientifically inexpedient range lies somewhere around the middle of the spectrum, since both extremes are open to deductive and stochastic generalizations (1969a: 4).

Thus it is not an extreme randomization which is the focus (see also Lowe, 1987 [1982]: 237). In the case of expectations, extreme uncertainty, as Keynes noted, may even result in a relatively order-bestowing outcome in the sense that under such conditions it may be presumed that convention will rule the day (Keynes, 1964 [1936]: 148, 152-53).

NECESSARY AND SUFFICIENT CONDITIONS FOR THE TRADITIONAL METHOD

Discussions of Lowe’s methodological contributions often focus on this thesis that the regular behavioral and motivational patterns upon which scientific generalizations depend can no longer be relied upon. In Lowe’s “inclusive concept of order”, however, the ability to identify reliable phenomena is a necessary but not sufficient condition for the appropriate applicability of the traditional deductive method (1969a: 15). It is also required that the macro-outcomes of such behavioral and motivational patterns be consistent with society’s macro-goals (Lowe, 1969a: 6, 7).

This is a position which is certainly foreign to the traditional method, and not just among its orthodox practitioners. Milgate, for example, has argued that Keynes was mistaken in stating (in a 1934 radio speech) that there is no “significant sense” in which the capitalist system is self-adjusting:

There is in fact an important and significant sense in which the capitalist economy is self-adjusting. It is quite clear that according to the traditional long-period method the economy will always tend to produce an objective outcome. (Milgate, 1982: 191-192)

It is this extreme state, and not the intractable middle range, that Garegnani refers to when he writes: “Uncertainty...could even be conceived as favoring the process of gravitation...in so far as it rendered expectations more responsive to present experience” (1989 [1979]: 351).

The system works; it produces an objective outcome. But what is an “objective outcome”? Is failure to meet the conditions for social reproduction, and hence the collapse of the system, an objective outcome? If so, then we have lost all meaning of the notions of social reproduction and conditions of reproduction. That may be why Keynes said there is no significant sense in which capitalism is self-adjusting.

But clearly Milgate is only expressing the view that theorizing about an economic system is separable from whether or not that system produces an outcome which is consistent with society’s goals. One thus supposes that if society does not approve of the outcomes economic policy will be undertaken. This, of course, is the traditional distinction between positive and normative economics.

But Lowe emphatically rejects the approach that neglects consideration of macro-outcomes at the ground level of theoretical analysis as “a radical positivism interested only in the explanation and prediction of movements ‘wherever they might lead’” (1969a: 7). Furthermore, he believes that “primary interventions” — traditional liberal utilitarian policies — are no longer adequate to address the inability of the market system to result in goal-adequate outcomes (Lowe, 1969b: 169, 188-189). For Lowe, the separation of positive and normative “can no longer be justified;... recent developments demand the conscious integration of the analytical and normative aspects” (1967: 180). This is accomplished within the instrumental framework; the practical, relevant purpose of economic reasoning is present from the very outset. In fact, economic reasoning begins with the goal(s) to be achieved.

Rather than taking only the initial conditions as given and addressing theory to predicting outcomes, Lowe proposes that we also take as given a pre-determined end-state: a vision of the desired outcomes. The task of theory is the identification and formulation of the technical and social means by which those ends might be achieved, the behavioral and motivational patterns necessary to enact those means, the environmental context(s) capable of inducing these patterns, and the requisite controls for the establishment of the environmental context(s). Such is the role for economic theory: not determining the ends — the macro goals — but rather devising the means for their attainment.

(7) If not, then where do we draw the line? At five, ten, or twenty-five per cent unemployment? At what level of income inequality? Lowe long ago gave up the belief that mere persistence of the system is sufficient evidence for the reliability of autonomous market forces (1935: 89-90), taking the position that only massive state intervention and other exogenous stabilizers have prevented its collapse.
TOWARDS A GENERAL THEORY AND THE RESTORATION OF DEDUCTION

The instrumental method is thus a regressive procedure (Lowe, 1977 [1965]: 143-144). Beginning with the stipulated macro-goal, engineering rules are employed to identify the path by which such a goal may be attained. It is at the next stage that the behavior is identified which is necessary to set such a path in motion. Motivations capable of inducing such behavior are then set out. Finally, the environmental and institutional structures capable of stimulating these motivations are identified, and brought about through various forms of public control. The procedure is therefore independent of any behavioral assumptions (Lowe, 1969a: 23-24, 1969b: 182).

Such independence from behavioral assumptions necessarily broadens the range of application of economic theory. We have seen that Lowe believes the long-period method is appropriate for the special case in which the actual motivational and behavioral patterns exhibited in a system provide orderliness of a particular type and sufficient degree necessary for its application. Historically, these conditions were satisfied during the classical stage of early industrial capitalism when external natural and social pressures emanating from a specific constellation of structural features enforced such motivational and behavioral conditions. Lowe's instrumentalism encompasses this special case, as well as every other potential case in which the actual motivational and behavioral patterns do not satisfy these conditions (Lowe, 1969a: 32).

In this sense, Political Economics may be seen as a general theory of economic structure and behavior. Since the traditional method is no longer possible, it might be thought that deduction itself is rendered obsolete. But through the conscious recreation of the conditions appropriate for its application, the possibility for powerful economic reasoning of precisely this type is recaptured. Lowe's analysis thus provides the foundation for "the restoration of deductive theory" (Lowe, 1992: 326-27). Since the conditions are established by design and control, Lowe refers to the alternative replacing the traditional method as the instrumental-deductive method, "the core of Political Economics" (Lowe, 1969b: 179).

SRAFFA AFTER LOWE: THE PRACTICAL SCIENCE OF POLITICAL ECONOMICS

If the "second stage" in the reconstruction of a modern classical alternative were to include such a methodological reconsideration as is being put forward here, where would this leave the "first stage", which has been framed in the long-period approach? Let us go back to Sraffa. In Parts I and II of Production of Commodities, Sraffa makes no explicit assumptions concerning behavior. He merely states that there "must" be a uniform rate of profits "for all industries" (1960:6). For some, the tendency to uniformity follows directly from "institutional facts" of the capitalist system, "quite apart from any behavioral considerations" (e.g., Nell, 1984: 147). Others have sought to provide an underlying explanation of this tendency through the elaboration of a distinctly classical notion of capitalist competition, defined "more in terms of economic behaviour" than its neoclassical counterpart (Semmler, 1987: 540).

In the instrumental-deductive framework, however, Sraffa's contributions fall within that part of the theoretical work which precedes any behavioral considerations, while following the stipulation of societal goals. Such an incorporation of Sraffa into the instrumental framework may then be a crucial part of assuring that a reconstructed Classical Political Economics might be, as has always been intended, an eminently practical science.

BIBLIOGRAPHY


