

Is Economic Theory Possible?

BY ROBERT L. HEILBRONER

JUST forty years ago, as a young professor at Kiel, Adolph Lowe asked the question, “Wie ist Konjunkturtheorie überhaupt möglich?”¹—how is a theory of the business cycle possible?—and answered that it was possible because the underlying economic process was, after all, determinable and dependable. Now, after a lifetime of reflection, he asks, “How is a theory of the underlying economic process itself possible?”, and answers, to the discomfiture of his earlier self, that it is not—at least in the traditional sense of the word “theory”—for reasons which, among others, the vagaries of the business cycle illustrate. Thus, as with many another philosopher, the outcome of a long process of investigation has been to fasten on the key premise of an earlier architecture of thought as constituting not an *a priori* from which analysis could proceed with assurance, but a proposition whose validity was to be the first to be called into question.

Already by the mid-1930s this trend of thought was visible in the interstices of Lowe’s book *Economics and Sociology*. There the surface problem was to discover the mutual interests of, and the proper line of demarcation between, two rival disciplines for social analysis. But just below the surface one discerned an uneasy awareness of a fading relevance of what passed for economic theory to the complexities of the industrial process:

¹ *Weltwirtschaftliches Archiv*, 24 (1926).

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... [N]ational, social and racial canons of behavior ... obscure the single principle of money incentive. The ultimate result of all these transformations is the very opposite of the classical state of objective equilibrium; the deviations have become larger and longer-lasting, the readjustments slow and incomplete; the circular chain breaks periodically. Economic behavior has ceased to be the model of perfect social interaction.²

In the case of *Economics and Sociology* the uneasiness was resolved by making the supposed regularities of the cyclical process, rather than the linearities of the traditional "equilibrium path," the foundation for economic systematizing.³ But now, in Lowe's latest book, *On Economic Knowledge*,⁴ the premise of a dependable cycle has finally been relegated to the same limbo as that to which he had earlier assigned the idea of a "natural equilibrium," and the industrial process has been portrayed as subject to wholly unforeseeable twists stemming from its changed psychological and structural attributes. One might expect, in the circumstances, that the very act of theorizing would thereby be regretfully relinquished as well, the venerable relic of a simpler but, alas, vanished world. On the contrary, the abandonment of a belief in the empirical and historical regularities of the economic process has spurred Lowe to produce a final apologia for economic theory. Inevitably, however, its formulation—even its underlying rationale—has now changed decisively. No longer is theory to unravel for us a process, linear or cyclical, emerging spontaneously from the fixed interplay of human nature and the social and physical environment. Now theory becomes the means by which the

² *Economics and Sociology* (London: Allen & Unwin, 1935), p. 76.

³ *Ibid.*, p. 98: "[O]ur result [of placing cyclical analysis at the center of inquiry] is of even greater importance for the theoretical construction of a realistic scheme of the industrial circular flow. As long as the primary causes of the trade cycle persist, the economic process will produce its own data irrespective of other independent influences. The trade cycle will not be deflected from its typical course, and the fixed sequence of the cyclical phases represents the basic form of the circular flow and the theoretical system of coordinates of any realistic analysis."

⁴ *On Economic Knowledge: Toward a Science of Political Economics* (New York: Harper and Row, 1965). Numbers in brackets in the text refer to pages in the book.

economic process is consciously directed, or even generated, from a deliberately contrived interaction of manipulated participants and a controlled environment. As a result, the economist must abandon the luxury of an Olympian detachment from the spectacle he observes and elucidates. Willy-nilly he has been plunged into the *mêlée* and forced to become a critical actor in—more than that, a director of—the economic process.

Such a radical refashioning of the role of theory in the most “advanced” of the social sciences surely calls for comment and re-exposition. As a long-standing student and disciple of Lowe’s thought, that is what I seek to do here. Let me only say that I hope this desperately condensed, and personally interpreted, summary of the main argument of his recent work will be taken for no more than a gist of the original, to which interested readers must repair.

I

Let me begin an exposition of the argument with a brief glimpse at the state of contemporary methodology. It cannot be said that a passion for the subject is a mark of contemporary economics. Inquiries into the nature of economic theorizing, or into the relation between economic inquiry and science proper, are not only difficult to find these days but, when found, rarely exhibit that zeal for exactitude so characteristic of other branches of contemporary economics. Mainly the attempt to discover a foundation for economics rests content with a more or less perfunctory statement about the role of scarcity as an “indispensable” condition for economic science or, in more sophisticated formulations, with an exposition of the “logic of choice” that emerges as a behavioral characteristic from the fact of scarcity.

Yet it is clear that economics, as we know it, does not embody *any* logic of choice selected at random but a particular

kind that is presumably dictated by scarcity. This is the logic of maximization. As a recent writer on the question has described it:

Maximization provides the moving force of economics. It asserts that any unit of the system will move toward an equilibrium position as a consequence of universal efforts to maximize utility or returns. Maximization is a general basic law that applies to the elementary units and, by the rules of composition, to larger and more complicated collections of those units.⁵

I think it is fair to state that the idea of maximizing, more or less as expressed above, constitutes the bedrock on which conventional economic theory rests. The reasons for this are twofold. In the first place, no other conception of human behavior yields as precise, determinable results as does the imaginary interplay of maximizing units. Secondly, the idea of maximizing corresponds to the ideas of "making money" or "profit-seeking" that we personally experience or are told about as basic attributes of the system in which we live.⁶

Yet the idea of maximizing, when we scrutinize it closely, is a curiously difficult one. For exactly what is it that we maximize? If we answer "utility"—that elusive ether of economics—we are soon hoisted by the petard of meaninglessness; as Samuelson has said, the claim that utility is maximized "is consistent with all conceivable behavior, while refutable by none."⁷ But we face similar problems when we try

⁵ Sherman Roy Krupp, "Equilibrium Theory in Economics and in Functional Analysis as Types of Explanation," in *Functionalism in the Social Sciences* (Philadelphia: American Academy of Political and Social Science, Feb., 1965), p. 69. The article goes on to describe "functional"—i.e., goal-seeking—systems as an alternative to "mechanical" maximizing systems. However the behavior that generates the requisite feedbacks, etc., of these functional systems results from individuals and firms following the conventional maximizing courses of action.

⁶ Cf. Frank Knight, *On the History and Method of Economics* (Chicago: University of Chicago Press, 1963), p. 164.

⁷ *Foundations of Economic Analysis* (1947 ed.), pp. 91–92. Despite its title, this book is more concerned with the conditions and consequences of a "given" economic model than with establishing the roots of that model in the real world. See discussion of maximization, *op. cit.*, pp. 15, 19, and especially 21–23. There is also no consideration of the empirical validity of maximization as the acknowledged underlying behavior postulate.

to replace the “soft” word “utility” with various “harder” words, such as “returns.” For example, so far as the individual is concerned, no one suggests that he seeks to maximize his gross cash revenue, but rather that he balances the benefits thus received against the pains of earning them—a formulation that quickly leads us to the conclusion that if the individual maximizes anything, it is still “utility.” The situation is better in regard to firms where we can forget about non-pecuniary aspects and speak unambiguously about maximizing net cash income. This clarity holds, however, only for the firm in a purely competitive market. Once we enter the world of oligopoly, maximization of returns becomes an aim that can be translated into practice through the most contradictory activities—a fact that again makes the word “maximizing” disconcertingly empty of precise meaning.

Thus most attempts to find a “foundation” for economics quickly bring us to concepts that are as recalcitrant as they seem to be indispensable. It is not surprising that T. C. Koopmans, commenting on the diverse, but equally unsatisfying methodological efforts on the part of Lionel Robbins and Milton Friedman, ends his essay with the lament: “One is led to conclude that economics as a scientific discipline is still somewhat hanging in the air.”⁸

We shall return in due course to the problems raised in this very cursory introduction. The difficulties we have encountered serve a purpose for us here in setting the stage for an examination of Lowe’s work. For Lowe in fact squarely challenges the prevailing methodological approach. First, he denies the operative reliability of maximization as a working principle of economic life. And beyond that, he proceeds to locate the foundations of economics in relationships quite different from those that place maximization, in its conventional sense, at the center of theoretical concern.

Not surprisingly, therefore, *On Economic Knowledge* begins

⁸ T. C. Koopmans, *Three Essays on the State of Economic Science* (New York: McGraw-Hill, 1957), p. 141.

from a different angle of entry than is commonly encountered. Rather than commencing with *a priori*s on the scarcity of nature or the logic of choice, the work begins with a question along another line: can economics be a science? Or to put it somewhat differently, since the question is meant rhetorically, if economics is to be a science, what qualifications must it have?

Lowe begins to answer the question by taking as his definition of science that put forth by Ernest Nagel in *The Structure of Science*: a science reveals "repeatable patterns of dependence" in which various properties of a subject stand to one another.⁹ Note that this imposes none of the usual constraints on economics. A concern with "repeatable patterns of dependence" brings Lowe not to a consideration of a stingy nature and its effect on Man, but only to the much more general dependence of Man on the physical and chemical characteristics of the material world. In a word, it focuses initially on the traditional, if now sometimes overlooked, view of economics as a science of production. What is "scientific" in this Man-Matter relationship, however, are only those general laws of nature that affect human provision—of human behavior we have as yet nothing to say. Thus a part of the claim of economics to "patterns of repeatable dependence" rests on the fact that economic activity involves man with the regularities of the material world, including not least those arising from the technology by which nature is made to serve man.¹⁰

⁹ Ernest Nagel, *The Structure of Science* (New York: Harcourt, Brace and World, 1961), p. 4.

¹⁰ This concern with Man-Matter, and with production or provisioning, as a necessary, if not yet sufficient, condition for a definition of economics, brings Lowe into substantial disagreement with those who define it solely as a study of "choice." Boulding, for instance, in a long review of Lowe's book in *Scientific American*, May, 1965, takes the view that economic man "is more interested in decisions than in provisions. His economics rises out of scarcity simply because it is scarcity that forces him to make decisions. If there were no scarcity he would not have to make any choices. On this basis economics emerges as a generalized theory of choice." *Per contra*, Lowe would argue that the act of choice, like the act of consumption, is in itself a psychological phenomenon about which economics has little or nothing to say. The

But these material realities serve only as a series of boundary conditions or constraints on human activity, saddling it, for example, with the problems of diminishing returns, or endowing it with economies of scale. There is, however, a second area in which "repeatable patterns of dependence" can also be discerned. This is the relation, not of Man and Matter, but of Man and Man, which is to say, the necessity, in all economies above the Crusoe level, for individual acts of production or distribution to be integrated into a viable social whole.

Here the problem is quite different from that posed by nature and its laws. The functioning of an economic society requires that human activities, separated not only by the division of labor but by the various "microgoals" that its members may aspire to—be they leisure, or accumulation, or high consumption, or whatever else—be combined both vertically, in sequences of production, and horizontally, in relations of exchange. For this dependability of social relations, however, although it is as necessary as that of the physical world for human survival, we cannot look to "nature" as our guarantor. Rather, some system of social cooperation, enforced by generally observed sanctions and rewards, and coordinated by universally recognized signals, must bring about a sufficient degree of behavioral regularity for adequate social provisioning to ensue.

Thus the arrogation of a "scientific" status for economic analysis rests on two "repeatable patterns of dependence"—one the workings of nature, and the other a reliable system of behavioral coordination. But this analysis only opens, rather

psychic riches of a hermit, or the psychological problems of a Buridan's ass, do not enter into the economist's purview. Only insofar as consumption claims a known quantity of goods (or purchasable services), or when choice involves the allocation of resources or of marketable labor, does the economic problem enter. Choice is, no doubt, a creature of scarcity—although the latter is a culturally conditioned and not an absolute attribute of existence. But choice is *economically* meaningful only to the extent that it affects the provisioning problem, just as a "logic" of choice is interesting only if it follows consistent patterns, preferably of maximization. Of this, more later.

than closes, the problem of economic theory. As Lowe points out (p. 28), it suggests that economic science might quite properly follow a taxonomic orientation, concerning itself with the changing characteristics of the operation of economic systems under different technical conditions, such as preindustrial, or developing, or highly industrialized societies, or with the behavioral regularities characteristic of feudalism, laissez-faire, collectivism, etc. In fact, however, Lowe emphasizes, "economic theory, as it is laid down in textbooks or is explored at the frontiers of research, concerns itself almost exclusively with market economies" (p. 28). This suggests that economics finds its main *theoretical* challenge not in the tasks of historical description or analysis but in the exploration of the special problems of market systems. For it is here that we find a unique case of the "repeatable patterns" on which economic science rests. In market systems, in contradistinction to those obedient to tradition or command, there arises a "mysterious" synchronization of freely chosen microgoals with an apparently unchosen, but nonetheless adequate, macrogoal for the entire society. In the spontaneous dovetailing of this freely chosen behavior into a more or less successful outcome for the community as a whole lies the unique problem to which economic investigation is naturally attracted, and which in fact raises economic theory from a taxonomic effort to the status of a genuine "explanatory" science.

II

Thus regularities of behavior as they exist in, affect, and are produced by a market society become the central problem for economic theory. Lowe states these preconditions, however, only to move to his next and more important step. This is the contention that, whereas market society in its earlier states did indeed produce the kinds of behavior that satisfy the needs of traditional theory, the organized capitalism of today does not.

The crucial point here is not that organized capitalism somehow interferes with the freedom of occupational choice, or movement, or with the free act of economic participation. It is rather that the general incentive of the actors—the behavioral force directed toward their substantive ends—is no longer strictly enjoined, as it is in classical market society. This incentive, or “action directive” in Lowe’s term, on whose strict observance ultimately rests the orderliness of the aggregate provisioning process, is in fact none other than the maximization principle. It is expressed here, however, not in terms of a certain psychic state of satisfaction to which marketers “naturally” tend, but as a *set of behavioral rules* which they are forced to obey. Buyers must go to the cheapest market, sellers to the dearest; and there each must seek to complete his economic transaction at a price that represents the greatest economic advantage of which he is aware (p. 36). Lowe calls this behavioral pattern “the extremum principle”; from it indeed there follows—in a market of pure competition—the Paretian optimality situation in which each has maximized his provisions to the degree that the preferences of others allow.

This all-important governor of an orderly economic market process is encapsulated in the so-called law of supply and demand. The law, whose tenets are familiar enough to every freshman economics student, is usually taken as a generalization concerning *actual* “normal” economic behavior. Lowe’s position leads him instead to scrutinize the behavioral *requirements* for such a law to operate. One of these is extremum behavior, as above defined. A second requirement is a certain interpretation of future developments, abbreviatedly known as stabilizing elasticities of expectations. Only when the buyer or seller expects that a new level of prices will continue (or return to former levels) will his buying or selling behavior be appropriate for the law to yield its expected results. It is well known that the expectation that a change in prices will continue in the same direction will induce behavior contrary to that required by the law.

But the critical proposition is yet to follow. It is that conditions making for the economic behavior required by the law of supply and demand were in fact present during the era in which the classical conception of the market originated, whereas today's conditions lead to kinds of behavior incompatible with its normal operation. For this crucial contention Lowe relies mainly on two sources. Turning to the "business reports, autobiographies, correspondences, and governmental bluebooks" of the era of the industrial revolution, he finds a "widespread tendency toward the systematic extremum incentive . . ." (p. 45). This in turn can be traced back to a still deeper-lying socioeconomic constellation of forces.

The combined pressures of mass poverty, of social isolation of the individual in a competitively organized civil order, and of a cultural climate in which economic success had become the prime source of power and prestige make it easy to understand that the extremum principle became the supreme maximum of market behavior (p. 69).

But it was not alone unbridled acquisitiveness coupled with the sharp proddings of need that provided the behavior requisite for a determinate economic system. Lowe finds as well reason to believe that the existing technical conditions also promoted a framework of expectations conducive to the appropriate action patterns. Here the main consideration is the small scale of the capital required for the budding manufacturing operations. In a passage cited from Adam Smith, Lowe cites the "stock" which will be promptly "withdrawn" if conditions prove unpromising and which will be as promptly reoffered if conditions improve (p. 72). He infers the prevalence of a highly mobile and fluid capital structure, in which working capital available on short notice from dealers is of more importance than heavy fixed equipment. Such a flexible state of affairs would contribute importantly to a quickly adjustable economic system in which deviations or "convulsions" in trade are short-lived, and where, accordingly, short-run time horizons and stabilizing expectations should prevail.

By way of contrast, Lowe confronts us with the condition of the psychological action directives and the state of expectations in the present stage of capitalism. The old-fashioned extremum principle has yielded to a bewildering variety of behavioral possibilities. Since the point is an important one, I shall quote at length:

Attitudes such as the striving for fixed rates of return or business policies directed toward maintaining rather than increasing the value of assets or the share of the market seem in many a large corporation to take precedence over, or to modify in significant ways, the traditional struggle for maximum profit. These "homeostatic" tendencies are strengthened and at the same time transformed by the concern of modern business with public relations and also by its growing regard for wider social interests. No less striking as a symptom of new attitudes is a certain insensitivity on the part of major consumer strata to price fluctuations over time or to price differentials for physically homogeneous products at one and the same time. There the traditional incentive of minimizing expenditure seems to give way to a preference for routinized purchases of branded goods at favorably located sellers (p. 47).

To this growing looseness of the extremum principle as a behavioral guide Lowe adds a second characteristic of the contemporary economy. This is the high order of technical specificity and the large bulk of its fixed capital assets, with the ensuing reluctance—or inability—to establish the short run as the relevant profit horizon. To quote again:

Not only does [the] growing "viscosity" of the industrial market exclude the short run as the proper horizon for calculation, but the diversity in the technical and organizational setup of agriculture, industry, and trade precludes the selection of any one time span as a basis for a general maximization rule. Indeed, practically any output decision must today be justified as satisfying some standard of pecuniary advantage duly interpreted. In other words, considering the state of uncertainty in the modern industrial market, opposite actions such as increasing or decreasing output, raising or lowering prices, can be defended in one and the same situation as the most promising step for profit maximization (pp. 47–48).

This progressive deterioration of the conditions insuring predictable behavior patterns can of course be traced a considerable distance back into the nineteenth century. The amelioration of living conditions and the satiation of acquisitive appetites, as well as the stiffening of the capital structure, can be observed at least as early as the era in which Marx wrote. How did it happen then that the system as a whole maintained an essential orderliness, and that economic theorizing, however wide of the mark in instances of specific predictions, was yet not so far from observable reality as to be discarded out of hand?

The answer, according to Lowe, lies in the presence of "escapements," which together with the prevailing behavior patterns and the existing state of technology define the matrix within which the economic process unfolds. These escapements—such as a wave of suitable inventions, a population impulse, or geographic expansion—provide sufficient "extrasystemic" stimulus to override and correct the disequilibria that might otherwise be produced by sluggish action directives or cramping technical constraints (pp. 65–66, 77). Throughout the period of maturing capitalism, just such escapements, in the form of rising population, a steady stream of innovations, and not least, wars, provided the necessary external boost.

It was extra-systemic forces making for continuous growth that reduced the risks of investment and created an expectational climate conducive to maintaining self-balancing tendencies, at least over the long run. In focusing attention on these tendencies, neo-classical Economics maintained a hold, even if a tenuous one, on the real world (p. 78).

Only when the pressure of these extrasystemic forces came to a halt in the late 1920s did we discover what the growing internal changes in behavior and technical structure could mean in terms of the massive dysfunction of the Great Depression. As a result we see in every Western economy the

expansion of controls and public demand whose function—at least to the economic theorist—is to serve as a substitute for the “automatic” escapements of the late nineteenth century.

What does this trend of events mean for economic theory? It is clear that the results of contemporary predictive attempts have been highly unsatisfactory. Lowe instances the sorry record of economic forecasts starting with the erroneous expectation of a post-World War II depression, down through the miscalculation of the Korean inflation, the failure to read the 1958 recession correctly, the premature concern about a general decline in 1962. No one would deny that the short-run forecasting ability of economics is still very poor and that its ability to predict drops off precipitously over longer stretches of time. This Lowe attributes mainly to the weakening behavioral regularities of the system, and to its inflexible technical structure.

But a still more fundamental question is posed. In the new environment of organized capitalism, is it still meaningful to speak of economic “theory” as a method of predicting future states of the economic system from the knowledge of an initial stage and of the prevailing patterns of action? According to Lowe, it is not. The volatility of the microunits’ motivations leads to paradoxical consequences not only for economic theory but for economic policy. As Lowe writes:

[T]he contemporary dilemma—a dilemma no less frustrating for practice than it is for theory—can be precisely stated. If it is true that economic theory can be built only on observations of or speculations about actual behavior, and if it is also true that, to be amenable to theoretical generalizations, the patterns of actual behavior must be regular and stabilizing, the prevailing variety of conflicting action directives and the climate of expectational uncertainty are incompatible with any theory, and there can then be no scientific knowledge on the primary level. The dilemma can be stated in another way. We do have an economic theory, but it refers to situations in which there is no practical need for theoretical guidance, since the automatism of the system assures that all goes well. However, once this automatism begins to fail, scientific prediction turns into an indispensable

condition for restoring the viability of the market process. But with the failure of the automatism the empirical basis for such prediction—the regularity of micro- and macro-movements—seems lost (p. 98).

III

The dilemma requires for its solution nothing less than the recasting of theory, making it explicitly and deliberately an arm of practice, and consciously adapting it for an economic model in which the previous foundation for theory—known behavior patterns—are lacking. This task leads Lowe into a still closer examination of the formal principles of traditional theory. In a highly original section he examines the mechanical, engineering, and organismic analogies and metaphors contained in traditional economic conceptualizing—that is, the more or less explicit borrowing for the purposes of economic abstraction of various features of classical mechanics (e.g., atomism, least action, or the conservation principle), or of engineering feedback systems (e.g., demand and supply adjustments), or of biological-organismic conceptions (e.g., the long-term evolution of economic systems).

All of these models—a “hybrid” version of which underlies traditional theory—offer certain valid insights into the market interaction of the human particles, but they still leave open the question of the extrasystemic, environmental forces that give rise to the particular microactivities with which theory is to deal.¹¹ And since these external forces are neither im-

¹¹ What the traditional models show with considerable clarity is that the supposed good working order that emerges spontaneously from their interplay of free economic particles is a misconception of the problem. “Indeed the market as envisaged by traditional theory is in good working order, but it is far from ‘free’ in the sense of resulting from spontaneously chosen modal micro-goals. Rather the choice of goals is imposed on the individual marketer by a very peculiar state of his environment. Conversely, experience during the laissez-fair stage of industrial capitalism demonstrated only too clearly that increasing spontaneity of decision-making by no means guarantees the good working order of the market. Rather the need for securing the minimum of stability required for continuous provisioning has made it imperative to counteract such spontaneity by contrived pressures of economic policy” (p. 132).

mune from historical change, nor so all-powerful that they make it impossible for any individual to resist them, the hybrid model at best describes economic processes over a highly limited range of experience. Once we exceed that range—roughly the age of the industrial revolution, when the environment came as close as it ever did to providing precisely the pressures needed for obedience to the canons of economic extremum behavior—we are faced with the problem of how to deal theoretically with the economic system that evolved out of this virtually closed and self-sustaining state of affairs.

This problem leads Lowe beyond the traditional model to the formulation of a new theoretical analogue capable of explaining more adequately the relation of theory and actuality in the present. A specification of theoretical prerequisites adequate for the environment of early capitalism must somehow be transformed into one more closely congruent with the attributes of mature capitalism. To put it differently, the structural attributes and environmental conditions which could be taken as fixed and neutral in the theoretical models appropriate for early capitalism must give way to a new conception in which structure and environment themselves become subsumed as active, nonneutral factors in the economic processes of industrial capitalism. But this explicit inclusion of the environment rules out the critical conception implicit in traditional theory—that of a fixed mode of economic behavior. For if we once admit the environment as a changing and active factor, it is impossible to believe that microactivity will thenceforth remain unchanged.

To sum up, the environment of growing affluence, of large-scale units, and of widened horizons of uncertainty progressively weakens the reliability of extremum action and negative feedbacks on which was built the stability of the system, both for the participants and for the observing economists. Hence, both practice and theory fall into the peril of indeterminacy. But both can be rescued, albeit at a very considerable price: “[T]he principle of unlimited micro-autonomy must yield to a new

operational principle of decision-making" (p. 130). And, "Economics as a medium of passive contemplation, observing and systematizing autonomous processes, [must be] converted into *Political Economics*, namely, into an instrument of active interference with the course of these processes" (p. 91).

IV

The new operation principle by which determinancy is to be restored both to theory and to reality is designated *Control*.

As a principle, Control is not to be confused with the existing controls that already seek to stabilize affairs. "It is of the essence of the latter," says Lowe,

that they take the behavior of the micro-units for granted, confining themselves to modifying the natural and institutional framework within which micro-actions take their course. . . . In contrast, Control as here understood refers to a public policy that concerns itself with the shaping of the behavioral patterns themselves—by influencing the purposive and cognitive motivations of the actors immediately, or in a roundabout way through reorganization of the system's structure (p. 131).

This deliberate introduction of Control gives rise to a new phase of economic theory in which participation is indissolubly melded with observation. This Lowe calls Political Economics.

But the explicit elevation of Control, with its inextricable concern for the goals of economic activity, also works a fundamental change in the nature of theory itself. With the rejection of behavior as a fixed datum, it is no longer possible for the economist to rely on the hypothetico-deductive method traditional to economics, in which we extrapolate from a given state, through the postulate of fixed behavioral responses, to a successive state. Now that behavior has been explicitly relegated to the unknowns and that Control has been explicitly moved from the background, where it resulted from the quiet pressures of environmental conditions, to the foreground of

conscious policy-making, a new "logic of goal-seeking" is required. This Lowe finds in the replacement of the traditional deductive process with a new "Instrumental" approach.

By Instrumentalism Lowe means *the use of economic reasoning*—that is, knowledge about technical constraints, laws of production, structural or other incompatibilities in the provisioning process, etc.—*to infer behavior patterns appropriate for the achievement of deliberately selected terminal states*. Thus the destination of the economy ceases to be the unknown which is deduced from an initial state by the application of standard economic responses to given stimuli, and becomes instead the postulated *datum* which serves as the goal to which successive stages of technical interlocking and behavioral response must be adapted and accommodated. The Law of Supply and Demand, for instance, now ceases to be an *a priori* of human behavior which can be applied in all market situations and becomes instead a set of "instructions" to be followed by sellers and buyers if a desired goal of "market equilibrium" is to be attained. In similar fashion the propensity to consume would cease to be a behavioral constant to be mechanically used for the determination of the multiplier and becomes a pattern toward which consumer behavior must be guided, provided that such and such a multiplier is needed to achieve a certain economic macrotarget.

This introduction of political direction into the very heart of economic theory changes the theoretical procedure in still other ways than in inverting the established chain of syllogisms. It destroys once and for all any claims to timelessness for economic theory, instead explicitly relating each act of theorizing to the particular constellation of events for which it is intended. This follows because each act of inference in the instrumental chain can be verified only when the desired terminus is in fact achieved or missed. Thus, as the data of environment change, or as knowledge of behavioral stimuli improves, the theoretical work of the economist must change *pari passu*.

Lowe analyzes this theoretical work needed for an economy of Control in a threefold way: first, as the political problem of defining goals; second, as the scientific step of elaborating the "path" of the system from a given to a terminal state; and third, as the administrative problem of securing the requisite microbehavior to achieve the desired end. For societies that retain economic microautonomy as an independent high-ranking value the crucial variable amenable to public manipulation will be that of expectations. Lowe suggests that modified extremum behavior (not too different perhaps from that blend of profit-seeking and "statesmanlike consideration" characteristic of the more public-minded large corporations today), guided by government policies planned to stabilize the general business outlook, may permit a reasonable degree of social control during these years in which we grope our way toward "the next stage in which the social process will be the manifestation of responsible action rather than an inexorable sequence of events" (p. 160).

V

It remains only to add a few comments and observations on the main theme of Lowe's book.¹² These must surely begin with some reflections on the essential thesis of the work—that the erstwhile determinacy of economic behavior has weakened to such an extent that it is no longer capable of supporting a superstructure of traditional theory.

It may well be that this central thesis will prove as difficult to verify or refute as the Weber-Tawney hypothesis. Like the latter, Lowe's contention has a *prima facie* plausibility—but

¹² I have omitted entirely any consideration of a long central section on Instrumentalist foreshadowings among the major economists from Smith to Keynes, as well as any mention of a final section where Instrumentalism is applied in the paradigmatic cases of stabilization and balanced growth. For these and many peripheral matters the reader must have recourse to the book itself.

again like the Weber-Tawney hypothesis, it is far from an uncontestable proposition. Take, for instance, Lowe's assumption about the prevalence of extremum behavior during the industrial revolution. It is true, of course, that the general level of affluence was then much lower than now, and as a result we would expect a corresponding sharpening of economic appetites. And yet the matter is not cut and dried. There were not only the avaricious manufacturers, but the gentlemanly farmers, and not only the starving working class, but a well-to-do middle class with whom we must reckon. In fact, we know very little about actual modes of behavior in that period, but it is likely that extremum actions were liberally interlaced with other kinds of action directives.

Nor can we assert without hesitation that the expectations of businessmen were mainly stabilizing in an earlier era. It is true that Adam Smith talks of "dealers" in capital, and describes as being of some significance a pin factory employing only ten men; but it is also true that large amounts of capital were already "sunk" in the great textile establishments of Arkwright and Strutt, and in the works of Boulton and Watt and of Wilkinson. For such large capitalists, at least, the horizon of planning and the immobility of capital were probably not too different from that in similar industries today. Moreover, the "bubbles" and panics of the eighteenth and early nineteenth centuries hardly argue for a general stability of expectations, but rather for a sense of uncertainty not too different from that of today.

Turning to the present, I would similarly qualify the sharp contrast between yesterday and today explicit in Lowe's formulations. It is admittedly difficult to find classic maximizing activity in certain key areas of the economy such as the short-run behavior of large corporations, but if we look to other areas—agriculture or small business or the labor market—we can still observe traditional patterns in operation. More than that, predictions based on the assumptions of traditional theory still yield acceptable results in many cases: location

theory, for instance, quite accurately predicts the movement of capital according to the principle of maximum economic advantage; generalizations based on the assumption of declining demand curves yield useful results in market analysis; and the theory of comparative advantage, itself founded on an assumption of maximizing behavior, enables us to project roughly accurate flows of international and interregional trade.

If contemporary extremum behavior is not quite *passé*, neither are all current expectations adversely affected due to the immobility of capital. It is true that the large firms of today are typically saddled with vast quantities of fixed capital, but it is also true that they enjoy large cash flows that allow them to reshape the direction of their economic efforts within short periods—the prime instances being conversion to war, or in time of peace, the adaptive efforts of the chemical companies. Moreover, studies show that the capital-output ratio in the economy at large has been falling—that is, that a given dose of capital yields a larger flow of output than formerly. This too argues against, rather than for, an increasing immobility of capital.

Such observations make me wish to soften Lowe's contrast between a "deterministic" past and an "indeterministic" present. We do not yet live in a world in which Macy's can ignore Gimbel's, or in which men seek to buy dear and sell cheap, or where corporations act without thought of maximizing profits. On the other hand it is equally undeniable that consumers no longer buy to take the last penny of advantage, and that corporate "maximum" profits become increasingly defined in terms of long-run market power rather than in terms of short-run money income. In a word, we seem to span two worlds, one of the past to which established theory applies, and one of the future, to which Instrumentalist considerations are more germane, and our situation is rendered doubly difficult in that we are willing neither to rely on the appositeness of traditional theory nor to consign ourselves to the ministra-

tions of Control. Indeed, it may be that the most striking contrast between past and present (so far as economic behavior is concerned) lies not in the altered environment but in the changed public view of that environment, especially in the growing public unwillingness to tolerate a degree of instability once accepted without complaint.

These reflections bear on the rationale, rather than on the relevance, of Instrumentalism. They touch as well, however, on the practicality of the objective of Instrumentalist Control. As we have seen, Lowe gives short shrift to programs that constitute the "escapement mechanisms" of contemporary capitalism, since these are based on the expectation of traditional system-stabilizing behavior, and urges in their place programs that will set out directly to reshape behavior itself.

In fact, however, the contemporary mechanisms, such as fiscal policy, monetary policy, etc., work fairly well during periods of economic calm. This suggests that the theoretical premises on which they are constructed are not wholly wide of the mark, and that traditional theorizing continues to have both importance and reliability during "normal" times. There remain, of course, the all-important abnormal times when behavior is unreliable and when standard actions taken on the expectation of standard responses can backfire. Presumably, however, at just such moments of crisis, the government—even though operating on traditional theoretical assumptions—resorts to "crash programs," "emergency measures," etc., whose purpose, albeit unwittingly, is indeed Instrumental in aiming to restore normal stabilizing activity.

Whether or not such programs, informed by a traditionalist view of the economic process, will be powerful or persuasive or adroit enough to realize their intended results is a moot point. But it is likely to remain moot, even under the aegis of an avowedly instrumental approach. For Instrumentalism asks us to substitute one kind of prediction—the prediction of the effect on economic activity of a certain political program—for an older kind of prediction—the attempt to foresee the effect

of supposedly "fixed" behavioral patterns within a given set of conditions. The old system may be untenable because we know that its behavioral postulates are unreliable. But the new kind of prediction involves us in an attempt to make cause-effect statements about social processes as to whose outcome we can do little more than guess. The links between policy and behavior, between signal and cognition, between stimulus and action, are still so little understood that the guidance of a better "basic" theory may not offer much by way of better practice. Indeed, the likelihood is that the policies of a government following the ideas of Instrumentalism would probably vary but little from those based on traditional economics—at least, so long as one macrogoal of the planners was to preserve the market system itself.

But must Instrumentalism restrict its programmatic ideas to those that rely on the unreliable stimuli and signals by which a government authority might try to manipulate its marketers? Might not Instrumentalism be used more effectively to promote control by command rather than by persuasion?

The question raises difficult issues, of which Lowe is thoroughly aware. By elevating microautonomy to the status of a macrogoal in itself, Lowe admittedly limits the practical research of Instrumental theory to those adjustments, such as stability or balanced growth, for which the requisite marketing behavior can, with some good fortune, be adduced. On the other hand, other goals, perhaps of greater significance in the long run—the radical redistribution of income or the substantial curtailment of property rights or the de-commercialization of large areas of life—may lie quite beyond the limits of market adjustment. In a word, there are apt to be important objectives that would require the abrogation of the market mechanism for their achievement, and which are ruled out of reach by the elevation of microautonomy to a cardinal position in the hierarchy of goals.

Lowe is concerned with this possibility and with the fact that powerful forces making for social change and for administra-

tive centralization may cause the demands of the future to exceed the adaptive capabilities of a market society. If this is so, then Instrumentalism may indeed be taken over by the protagonists of a command system, and its relevance to a society of microfreedom forgotten.

Yet in admitting the possibility that a microautonomous society may not survive the stresses of the future, Lowe also offers a theoretical insight on which may be built the strongest possible "last ditch" defense of the values which such a society seeks to preserve. In a sense, the final import of Lowe's book is the possibility of a new alternative to the time-honored ways in which economic societies have maintained that minimum of orderliness without which the provisioning chain would be broken. Tradition, command, and the marketplace have hitherto provided the pressures by which the individual has been subordinated to the community. Now Lowe offers a fourth way—the regularization of behavior through the use of the faculties of reason, welded, to be sure, to the remaining only partially tamed forces of acquisitiveness, power, prestige, etc. For it is Lowe's implicit hope that a new understanding of the requirements of economic order—not only on the part of the directing authorities but equally on the part of the obliging economic citizens—can provide a new basis for that voluntary discipline that must come from all if it is not to be imposed on all.

Thus the plea for Instrumentalism is not merely a plea for a reconstitution of economic theory. It is also a weapon specifically forged for the preservation of "free" societies, to whatever extent their freedom proves to be historically viable and morally defensible.