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Dialectics, Functionalism, and Structuralism, in Economic Thought

By SIEGFRIED G. KARSTEN*

ABSTRACT. "*Structuralism*" and "*functionalism*" facilitate an analysis of the evolution of *economic thought* as a series of *cultural, institutional, and socioeconomic* challenges and responses. The *methodologies* of "structuralism" and "functionalism," like *Hegelian dialectics*,¹ to which they are closely related, do not consider thought systems or socioeconomic systems in terms of fixed and stable relationships but in the light of dynamic processes of *change*. They emphasize *communication, feedback, and continuity*. The aim of these methodologies is to facilitate the analyses of changes in interrelationships which constitute the processes of *evolution*. The economist is concerned with the theoretical analysis of socioeconomic processes. His task can be facilitated by describing and analyzing structural-functional relationships of the *economy* and its parts. However, the methodologies of structuralism and functionalism cannot be used to predict theoretical developments. At best they can be utilized to select from some set of possible alternatives.

I

THE BASIC CONTROVERSY among economists revolves around the issue of what determines the "relevancy" of a theory. Rogin argued that economic thought should be viewed in the context of the social order and the interaction of the theorist with the social scene. Theories should be evaluated according to their relevance to socioeconomic issues and to their ability to bring about the implementation of specific policies.²

In contrast, the absolutist approach, as represented by Mark Blaug,³ asserts that the evolution of economic theories is due to individual efforts to improve the state of the science, brought about by an "inner momentum" of economic ideas and by the appeal to empirical facts. The drawback of the absolutist position is to be found in the extreme emphasis on empirical facts and in disregarding future potentialities of economic theories.

Neither the absolutist nor the relativist approaches satisfactorily explain the dynamics by which socioeconomic events influence the development of economic thought. This writer is of the opinion that the evolutionary devel-

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opment of economic thought is due to the mutual interaction of past and present theories with the socioeconomic setting, which is a process that is continuous over time. The historian of economic thought needs to consider the unresolved practical and theoretical problems which are the driving forces of all developmental processes.⁴ As Popper points out, “the growth of knowledge proceeds from old problems to new problems, by means of conjectures and refutations.”⁵

Analysis and dialectics link the researcher to the phenomena with which he is concerned; they are essential to the working out of structures.⁶ The applicability of Hegelian dialectics in the analyses of the evolution of economic theories has been discussed in a previous paper. The driving force of the dialectical process is to close the gap between actuality and potentiality. Hegel thought that nothing that surrounds man is final in form; everything is subject to change and, therefore, an example of dialectical processes.⁷ The idea here is that anything, *i.e.*, as a thesis, whether subjective or objective in nature, contains or generates within itself a contradiction or reaction, the antithesis. This “contradiction never completely destroys what is contradicted but merely refashions it to suit new ends.”⁸ How can a thesis and its antithesis be applied to an idea or a theory at the same time? The answer is to be found in the process of “becoming” which resolves the contradiction, leading to the third step in the triad, the synthesis, which both abolishes and preserves the thesis and antithesis and which represents the unity of the two.⁹ The nature of dialectics is, therefore, the dynamics of change and deals with the understanding of the processes of development and evolution.

If the theoretician is influenced by the socioeconomic conditions which he faces, the historical legacy which he inherited, and by empirical facts, then “structuralism” and “functionalism” as a frame of reference for analyzing the development of economic theories are warranted. The methodologies of structuralism and functionalism, similar to the parts of the Hegelian triad: thesis, antithesis, and synthesis, are highly integrated and interrelated. What manifests itself as a function from one angle may be viewed as structure from another and vice versa. Therefore, one cannot do justice to the evolution of economic theories by concentrating exclusively on either structuralism or functionalism—a synthesis of the two is essential.

In general, a structure refers to an arrangement of parts into a system characterized by order and interrelationships. As Chase points out, science was first concerned with mechanical (ahistorical) and non-human biological structures. During the last century analyses expanded to the realm of human-biological or social structures, especially in anthropology, sociology, and lately also in economics.¹⁰

An economic system, similar to anthropological and social arrangements, represents an ordered structure of relatively stable individual units. "Structure analysis studies the configurations in which the elements of an economic system—inputs and outputs, employment and income, savings and investment, etc.—must be arranged if the transformation of the initial into the stipulated terminal state is to be achieved," as Lowe puts it.¹¹

The individual units of a structure, taken by themselves, are static in nature. However, the ultimate goal of investigations into structures is to analyze their dynamics of change and evolution. This boils down to research of the processes of change of economic institutions which is facilitated by the methodology of functionalism,¹² *i.e.*, to ascertain how economic theories evolve and how economic systems change by altering their structural form.

The concept of function was first employed in mathematical analyses by the renowned mathematicians Leibniz and the Bernoulli brothers. Gottlob Frege, in his search for a foundation of arithmetic from logic, extended the concept of function from mathematics to linguistic philosophy—he saw philosophy essentially as a study of language.¹³ Marshall, discussing Frege, states: "First, functions, in contrast to objects, have a particular capacity to link together the parts of complete wholes. Secondly, functions, unlike objects, can exist only as parts of complete wholes."¹⁴ That is, for Frege functions are incomplete, they serve as logical bonds for structures, and they can occur only in combination with structures.¹⁵

Following Frege's application of function to linguistic philosophy, the use of the concept spread to anthropology and sociology. "T. Parsons regards the concept of function as all-important Its crucial role is to provide criteria for the importance of dynamic factors and processes within the system."¹⁶ The economist is interested in examining the complex relationships which constitute, together with institutional factors, the economy, as a functional unit.¹⁷ As such, functionalism stresses

relations and activities as against terms or substance, genesis and development as against intrinsic character, transformations as against continuing form, dynamic patterns as against static organization, processes of conflict and integration as against formal composition out of unchanging elements.¹⁸

Lowe, in essence, refers to it as force analysis, with special significance to market systems. "Structure analysis is only preliminary to *motor or force analysis*."¹⁹

Functionalism refers to the relation of a part to a whole, to be specific, to the consequence of a role player, an institution, or a value system for the functioning of a system.²⁰ It can be conceived of in two ways, either as an ongoing process, or as means to an end,²¹ as also Lowe sees it. In the latter

instance, functionalism is a concept for the analysis of social or economic dynamics. It can be used to explain why economic theories or orders persist despite internal or external pressures for change or why they react to forces of change in an adaptive manner, *i.e.*, the explanation of dynamic equilibrium.²² The processes of structural change in a socioeconomic system may be rooted in Adam Smith's concepts of the division of labor and the resultant specialization and exchange. These lead to greater differentiation of socioeconomic organizations as evidenced by greater differentiation not only in occupations, specialists, and socioeconomic groups or classes but also in the accompanying institutions. In the words of Gurwitsch, "by his work, man transforms his sociohistorical world, whose transformation reverberates on man, transforming him."²³

Functional-structural analysis leads to institutional economics, which embraces the Darwinian concept of change. As David Hamilton points out, the classical economists accepted the general pattern of "mechanical or repetitive change in accordance with fixed eternal laws of social mechanics."²⁴ They accepted the economic order of the day as a natural self-equilibrating one. In contrast, the institutional school holds that all change is developmental, that "the economy is at all times undergoing a process of cumulative change, and that the study of economics is the study of process."²⁵ In structural-functional analysis, "mechanistic thinking is replaced by concepts of wholeness, organization, and dynamics."²⁶

Piaget's analyses of structures, defined as having a definite pattern consisting of analytically separable and distinct parts, the interrelationship of which is dominated by the general character of the whole, permit dynamic analyses of the evolution of economic theories. Three key elements are involved: wholeness, transformations or feedback, and self-regulations.²⁷ These will be discussed in the following sections.

II

THE CHARACTERISTIC of "wholeness" does not merely represent a simple juxtaposition of previously available elements. It yields a rational perspective of relations between important elements. For example, economic theories, as abstract or analytical structures, exist as parts of a more concrete or universal structure such as society or a school of thought.²⁸ It is "structuralism," as discussed by Piaget, that assists one to account for changes within a given paradigm or theory.

Both the "thesis" of the Hegelian triad and the "wholeness" of a structure correspond to Kuhn's concept of a paradigm which he defines as an "accepted

model or pattern," closely related to his ideal of a normal science.²⁹ The latter he envisions as research which, based upon past scientific achievements, leads to the formation of a field of study acknowledging the science as the basis for further practice and permitting its "scientists" to resolve problems or "puzzles."³⁰

Particular schools of economic thought such as mercantilism, Physiocracy, classical, institutional, or Keynesian economics could be representative of a given thesis or structure. Specific economic theories could also be considered as both theses or structures—for example, bullionism, Ricardo's theory of rent, Malthus' population thesis, the labor theory of value, and marginal utility theory, to mention a few. However, any thesis or any structure can be incorrect or incomplete, or claim an undue amount of generality or be faultily applied.³¹ All potentialities of a theory are never realized at the time in question, and, therefore, out of an inner necessity, drive toward another state of realization.³² As Popper points out, one never knows whether a given theory or hypothesis is absolutely true; there is no such thing as certainty or sure and finite evidence. Everything is based on assumptions. "Examples abound of economists giving up assumptions at all levels doubting the accuracy of the methods of measurement, querying statistical series, questioning theorems and deductive steps."³³

Where does "functionalism" enter the picture? "Function is understood to refer to a condition or state of affairs that is the resultant of the operation of the relevant structural unit."³⁴ Functionalism analyzes the interrelatedness and interdependence of patterns within a given socioeconomic theory or system. It emphasizes the interaction of factors toward the maintenance of the socioeconomic unit or in meeting its requirements. As Krupp points out, functionalist theory assumes a paradigm "to have a basic organizing principle of goals and self-regulating mechanisms."³⁵ In essence, one assumes a unity of goals for the paradigm, a general purpose for the system of thought that gives it a direction (including all parts of the paradigm); the postulated goal becomes fundamental for the maintenance of the system.³⁶

Specific macro- and microeconomic policies such as full employment, price stability, and a satisfactory rate of economic growth, as mandated by the Employment Act of 1946, are, generally speaking, the result of a specific economic structure. Similarly, issues of competition, regulation or deregulation, income redistribution, economic security, defense, energy, etc., are also brought to the fore by a specific socioeconomic structure. However, these policies or issues can also be viewed as structures in themselves with functional effects on the socioeconomic system that gave rise to them. For example, the present crisis of stagflation is at least partially the outcome of values and

policies (function) of our socioeconomic structure. However, these results will bring forth changes in the socioeconomic system. Michael Harrington is of the opinion that "the crisis is structural in nature; its solution therefore must be structural."³⁷

To be sure, economics has always operated toward certain ends, whether one considers mercantilist policies, the controversy between the Banking and Currency Schools, classical economics, or contemporary macro- and micro-economics, especially with regard to welfare economics or the theory of value. One can argue, for example, that the bullionist policies of the mercantilists, once they had achieved their goals of primitive accumulation and the furtherance of a strong national State, were no longer relevant to the changing conditions and requirements of the times in question. As a result the opposition to mercantilist thought grew, through the criticisms of Hume, North, the Physiocrats, Adam Smith, and others, culminating in the classical system, a higher form of economic structure.

III

"TRANSFORMATIONS" ARE INDICATIVE of the fact that a paradigm or body of thought must by its very nature also be *structuring*. One is, therefore, faced with a constant duality, namely, a body of thought "always being simultaneously structuring and structured."³⁸ Efforts to gain insight into economic phenomena by changing or modifying the variables under consideration will change the science itself. Friedman takes the position that "any theory is necessarily provisional and subject to change with the advance of knowledge." . . . "Progress in positive economics will require not only the testing and elaboration of existing hypotheses but also the construction of new hypotheses."³⁹ That is, any theory can only be complete in the abstract; but it is incomplete in the real world.

Both "transformations" and "antithesis" may be regarded as reactions against the incompleteness or incorrectness of established theories, *i.e.*, structures or theses. How do "transformations" or the "antithesis" manifest themselves in the normal course of economic analysis? It is the interrelational aspects of structure and function which provide the requisite feedback mechanism.⁴⁰ Here one might consider the roles of controversy and reaction, the incompleteness and testing of theories, as well as the processes of conflict, reflection, mediation, refinement, and elaboration.⁴¹ This is what keeps economic theories and socioeconomic systems viable and progressive.⁴² In the methodology of functionalism, the existence of a function is also indicative of the occurrence of "dysfunction, which implies the concept of strain, stress

and tension on the structural level, provides an analytical approach to the study of dynamics and change."⁴³ "Dysfunction may be defined as any function that lessens the adaptation or adjustment of a unit to its setting."⁴⁴ The interplay of transformations and functions inherent in a structure manifests in a similar fashion as the antithesis in the Hegelian triad.

Lakatos states that once a theory is formulated, it will be criticized, tested, and improved upon. "A bold theory always challenges some theory in the extant body of science; but the *supreme* challenge is when it not only claims that the challenged theory is false but that it can explain all the truth-content of the challenged theory."⁴⁵ Popper asserts "that we do not start from observations but always from *problems*—either from practical problems or from a *theory which has run into difficulties*."⁴⁶

These problems may well originate in practical problems. Thus the practical problem, "What can be done to combat poverty?", has led to the purely theoretical problem, "Why are people poor?", and from there to the theory of wages and prices, and so on; in other words, to pure economic theory, which of course constantly creates its own new problems. In this development the problems dealt with—and especially the unsolved problems—multiply, and they become differentiated, as they always do when our knowledge grows.⁴⁷

Since the facts of technology and of the social sciences that apply to human nature and to economic, social, and political institutions are constantly subject to change, conclusions, *i.e.*, structures or theses, which are based on such data must be revised in both the quantitative and qualitative sense. For example, as a result of econometric testing the Keynesian and monetarist models have undergone substantial modifications. But the replacement of a thesis or structure by another implies the existence of an alternative, or something capable of modifying the original structure or thesis. Durkheim would say, had he written on economics as science, what makes economics possible is that the causes of economic facts and theories are to be found in preceding economic facts and theories, by facilitating the establishment of genuinely economic causal relations.⁴⁸

The history of economic thought provides examples of reactions to and transformations of established theories, *i.e.*, structures and theses. The intriguing question arises, of course, why there exist different schools of economic thought? The *Methodenstreit*—the controversy between the historical school and classical and neoclassical economics—may serve here as the typical example. The historicists questioned the employment of the deductive method of analysis in economics and denied that economic laws, established on the basis of a few postulates, could have universal validity.

Malthus' population thesis, which gave classical economics the subsistence wage doctrine, was a reaction to Godwin's perfectibility thesis. In a similar vein, J. B. Say set out to clarify Adam Smith, and Menger dedicated himself to the healing of a sick theory.⁴⁹ J. S. Mill's domination of the science necessarily led to a reaction against established hypotheses, for his model was devoid of empirical relevance to facts and did not represent a technique for solving significant problems, *e.g.*, less than full employment being assumed away.⁵⁰

Buchanan charges that the classical economists were primarily concerned with the improvement of their institutions. An understanding of the latter, and hence of their potentials, was of secondary importance. They were prejudiced toward reforms.⁵¹ This attitude is indicative of the limitations which the classicists imposed upon themselves. The labor theory of value, the emphasis on supply and neglect of demand, the theories of capital and interest, for example, resulted in many difficulties for classical political economy. The failure of assumptions to extend over elements that came to need explanation made the system vulnerable to attack.⁵²

As a more specific example, one might consider the controversies in the literature about the validity of the labor theory of value and the neoclassical theory of value and distribution. With the classical theory of value as a starting point, *i.e.*, as a thesis or structure, the limitations, inconsistencies and reactions to dangerous radical implications as well as the desire to justify the capitalist system became apparent. These can be taken to constitute "transformations" or "antithesis" to the labor theory of value, culminating in the neoclassical theory of value and distribution. Bronfenbrenner takes the position that both the neoclassical and the Ricardo-Marx traditions are viable theories which deal with the problems of value and distribution. He anticipates that the new structure or thesis which will be emerging out of all these controversies will result in a better understanding of capital and distribution theory and will, therefore, represent an improvement over existing theories.⁵³

IV

THE THIRD KEY ELEMENT in Piaget's structure is the one of "self-regulation" with the attributes of self-maintenance and closure.⁵⁴ It implies that the transformations that are inherent in a structure do not result in a completely new paradigm. This is in contrast to Kuhn who sees the transition from one paradigm to another as a discontinuous and non-cumulative process brought on by a sudden and unstructured crisis or revolution. For Kuhn, a new theory is "seldom or never just an increment of prior theory," but is the result of

a basic reconstruction of the field from new fundamentals.⁵⁵ Lakatos criticized Kuhn's scientific revolutions as being irrational and a matter of psychological processes void of quantitative verification. Each Kuhnian paradigm has its own standards making rational comparisons impossible. For Lakatos, Kuhn's method of scientific change from one paradigm to another is a mystery, a kind of religious change.⁵⁶

Self-regulation or the new structure is the result of the working out of transformations. The new structure or synthesis contains its past, present, and future, in elements that have been superseded, elements that have been preserved, and elements that are still unrealized potentialities.⁵⁷ Popper refers to this as the principle of correspondence.

For example, Schumpeter, in his analyses of business cycles, argued that time series map the path of equilibrium points and neighborhoods, each succeeding one at a higher level than the preceding one, descriptive of an evolutionary process which was essentially spurred by the innovator.⁵⁸ With regard to the evolution of capitalism, Schumpeter believed that the feudal ages, especially scholastic thought, contained all the germs of capitalism, which developed slowly but steadily by small increments.⁵⁹ Classical economics evolved due to the fact that earlier more simple structures or theses (feudalism, mercantilism) were no longer functionally viable and became untenable.

It is always possible to question a structure or a thesis and what it asserts about reality. As a result a higher level structure or thesis will evolve which again will be subject to testing. To assume differently would be to admit the existence of an absolute limit to knowledge.⁶⁰ For example, the duopoly models of Cournot, Bertrand, and Edgeworth still appear in analyses of imperfect competition in microeconomics texts.

It is difficult, if not impossible, to define a current structure and its transformations, the prevailing functions and dysfunctions, a present thesis and its antithesis, or a new structure or synthesis. How can one assert which of all possible relations currently constitute a structure and its transformations or a thesis and its antithesis? Even if the latter's existence is assumed, how can a correct new structure or synthesis out of a set of possible alternatives be selected? It is doubtful whether a meaningful structure or thesis and their corresponding transformations or antitheses can be defined before a new structure or synthesis has been established.⁶¹ The new direction, *i.e.*, new structure or synthesis, will at least in the short run be influenced by the "normal" state of affairs in the science, the value structure of society, *i.e.*, it will depend on the questions to be asked, the intent of the investigator or of leading interests.

Only after events have taken their course will a meaningful application of "structuralism," "functionalism," or Hegelian dialectics, as methods of research into the interrelatedness of various theories and other factors and their development, be possible,⁶² especially if the present and the future can be viewed in terms of an extended past. Clemence and Doody, with regard to Schumpeter's model, took the position that a "synthesis can be attempted only after the returns are in,"⁶³ *i.e.*, after empirical verification.

Ben Seligman's approach of defining a structure or thesis and making predictions of what might happen in the future, may serve as an approximation to an evolving new structure or synthesis. However, such predictions will have to be tested against reality and will most likely be subject to modifications.⁶⁴ Lakatos posits that "the history of science has been and should be a history of competing research programmes."⁶⁵ Popper proposes to "proceed by a method of *selecting* anticipations or expectations or theories—by the method of trial and error elimination." . . . "A good explanatory theory is always a bold anticipation of things to come."⁶⁶ Lowe sees the task in terms of his instrumental analysis, the logic of economic goal setting. His approach is teleological in nature in that it defines the present state of the economy, the goal it should seek to attain, and how to achieve it.⁶⁷

By emphasizing different sets of socioeconomic conditions, a given structure or thesis may assume different forms and thus give rise to emphasis upon different policies or perceptions of goals and hence to different paths of development. Adam Smith, emphasizing welfare, liberty, and agriculture, looked upon mercantilism as a system of restrictions and as a tissue of doctrinal fallacies. Schmoller, on the other hand, being concerned with the problems of political consolidation and the elimination of particularism, thought of mercantilism as a system of liberation. For Marx, whose orientation was toward social revolution, mercantilism represented a stage in the development of capitalism.

V

THE PURPOSE of this study was to investigate the applicability of "structuralism" and "functionalism" to economic analysis and its affinity to the Hegelian dialectical method. As long as the science of economics is subject to change, "structuralism" and "functionalism" can facilitate the understanding of present and past economic theories and their resultant applications. The economist's task is to describe how the economy works, how its individual parts or theories relate to each other, and why the system maintains or adapts itself. As with dialectical processes, one of the fascinating tasks seems to be

the identification of structural and functional processes in the science.

"Structuralism" and "functionalism," however, cannot be used to prove or to predict theoretical developments. As Chase puts it, they cannot be employed as "a *causal sequence* with a directed or deterministic teleology, *but rather a process of selection from among some set of possible alternatives.*"⁶⁸ In the words of Leontief, "true advance can be achieved only through an iterative process in which improved theoretical formulation raises new empirical questions and the answers to these questions, in their turn, lead to new theoretical insights."⁶⁹

Structural-functional analysis, as applied to economics, is based on the assumption that economic theories as part of an economic system are systematically interrelated and that ordered relationships among economic variables or institutions are discernible.⁷⁰ However, this classification "as a function or a structure depends in part on the point of view from which the phenomena concerned are discussed. What is a function from one point of view is a structure from another. The concepts of consumption and production are . . . examples. . . ." ⁷¹ As Dahrendorf expresses it, structural-functional analysis is here to stay. Any critique of and changes in the methodologies involved represent efforts of refinement and not attempts to discard them.⁷²

Notes

1. For a discussion of the applicability of the dialectical method of analysis to the evolution of economic theories see my previous report "Dialectics and the Evolution of Economic Thought," *History of Political Economy*, Vol. 5, No. 2 (1973). The two articles can be profitably read together.

2. Leo Rogin, *The Meaning and Validity of Economic Theory* (New York: Harper & Brothers, 1956), pp. 1-13.

3. Mark Blaug, *Economic Theory in Retrospect*, rev. ed. (Homewood, Ill.: Irwin, 1968), pp. 3-4.

4. Ludwig Landgrebe, "Das Problem der Dialektik," in *Marxismusstudien*, Vol. 3, Iring Fetscher, ed. (Tübingen: J. C. B. Mohr, 1960), p. 2.

5. Karl Raimund Popper, *Objective Knowledge* (London: Oxford Univ. Press, 1972), p. 258. Popper agreed that ideas and theories evolve in dialectical contexts. He interpreted some of his own methodologies as ". . . improvements and rationalizations of Hegelian dialectical schema . . ." (p. 297). He objected to Hegel's notion that the divine consciousness, working through man, assures that the evolution of theories is automatic and self-changing. For Popper the evolution of ideas proceeds by man consciously positing hypotheses, testing, criticizing, and correcting them (p. 300).

6. Nicholas Georgescu-Roegen, "Methods in Economic Science," *Journal of Economic Issues*, Vol. 13, No. 2 (1979), p. 322; Jean Piaget, *Structuralism*, Chaninah Maschler, trans. and ed. (New York: Harper and Row, 1971), p. 124.

7. Georg Wilhelm Friedrich Hegel, *System der Philosophie, Erster Teil, Die Logik*, Vol. 8 of *Sämtliche Werke*, Hermann Glockner, ed. (Stuttgart-Bad Cannstatt: Friedrich Frommann Verlag, 1964), pp. 190-92.

8. Bertell Ollman, *Alienation* (Cambridge: Cambridge Univ. Press, 1971), p. 57.
 9. Hegel, *op. cit.*, Vol. 2, *Phänomenologie des Geistes*, pp. 22–23, 73, 94–98.
 10. For a detailed discussion see Richard Chase, "Structural-Functional Dynamics in the Analysis of Socioeconomic Systems: I: Development of the Approach to Understanding the Process of Systematic Change," *American Journal of Economics and Sociology*, Vol. 38, No. 3 (1979).
 11. Adolph Lowe, *The Path of Economic Growth* (Cambridge: Cambridge Univ. Press, 1976), p. 17.
 12. Ralf Dahrendorf, *Pfade Aus Utopia* (München: R. Piper & Co. Verlag, 1974), pp. 228–33.
 13. Robert Sternfeld, *Frege's Logical Theory* (Carbondale and Edwardsville, Ill.: Southern Illinois Univ. Press, 1966), p. 30; Rulon Wells, "Is Frege's Concept of Function Valid?" *Journal of Philosophy*, Vol. 60 (1963), pp. 720–22.
 14. William Marshall, "Frege's Theory of Functions and Objects," *Philosophical Review*, Vol. 62 (1953), p. 382.
 15. *Ibid.*, pp. 376–77.
 16. Alan W. Eister, "Function," in *A Dictionary of the Social Sciences*, Julius Gould and William L. Kolb, eds. (New York: The Free Press of Glencoe, 1964), p. 278.
- Parsons attempted to facilitate dynamic analysis of stable structures. "Functional analysis" or "structuralism-functionalism" has since found many applications in anthropology, sociology, psychology, and also in economics. See, for example, Robert K. Merton, *Social Theory and Social Structure* (New York: The Free Press, 1968); Talcott Parsons, *The Social System* (Glencoe, Ill.: The Free Press, 1951); A. R. Radcliffe-Brown, *Structure and Function in Primitive Society* (New York: The Free Press of Glencoe, 1963).
17. Robert P. McIntosh, "Ecosystems, Evolution and Relational Patterns of Living Organisms," *American Scientist*, June 1963, p. 247.
 18. Horace M. Kallen, "Functionalism" in the *Encyclopedia of the Social Sciences*, Edwin R. A. Seligman and Alvin Johnson, eds., Vol. 6, 1963, p. 523.
 19. Lowe, *op. cit.*, p. 17.
 20. Dahrendorf, *op. cit.*, p. 264.
 21. Kallen, *op. cit.*, p. 524.
 22. David Silverman, *The Theory of Organizations* (New York: Basic Books, 1971), pp. 58–67.
 23. Aron Gurwitsch, "Social Science and Natural Science," in *Economic Means and Social Ends*, Robert L. Heilbroner, ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1969), p. 49.
 24. David Hamilton, *Evolutionary Economics* (Albuquerque, N.M.: Univ. of New Mexico Press, 1970), p. 4.
 25. *Ibid.*, p. 17.
 26. Walter Weisskopf, "Reply to Professor Fischer," *Journal of Economic Issues*, Vol. 16, No. 1 (1981), p. 196.
 27. Piaget, *op. cit.*, pp. 8–16, 97.
 28. Chase, *op. cit.*, pp. 295–96.
 29. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (Chicago: Univ. of Chicago Press, 1970), p. 23.
 30. *Ibid.*, p. 10.
 31. Joseph Alois Schumpeter, *History of Economic Analysis* (New York: Oxford Univ. Press, 1954), p. 111.
 32. Herbert Marcuse, *One-Dimensional Man* (Boston: Beacon Press, 1968), p. 222.
 33. Pedro Schwartz, "Back to Popper. A Criticism of Recent Fashions Among Historians

of Economic Thought." (Paper presented at the Allied Social Science National Convention, New York, December 1977), p. 19.

34. Chase, *op. cit.*, p. 297.

35. Sherman Roy Krupp, "Equilibrium Theory in Economics and Functional Analysis as Types of Explanation," in *Functionalism in the Social Sciences*, Don Martindale, ed. (Philadelphia: American Academy of Political and Social Science, 1965), p. 65.

36. *Ibid.*, pp. 70–72.

37. Michael Harrington, "Lecture Two," in *The Economy: Three Views*, The M. L. Seidman Memorial Town Hall Lecture Series, Robert M. Cooper, ed. (Memphis, Tenn.: Southwestern at Memphis, 1980), p. 31.

The question of values, goals, and policies takes on added dimensions with rapid technological change. Rifkin argues that the entropy law is ushering in a revolutionary search for new human values and new institutional structures. He considers energy to be the basis not only of all life but also of all human culture, which in turn affects values and goals. For example, he posits the thesis that the Renaissance, the period of enlightenment, was not the primary cause of the industrial revolution. The latter came about through the necessity of moving from an energy environment based on wood to one based on coal, which in turn radically altered the way of organizing life in Western Europe. Jeremy Rifkin, *Entropy* (New York: Viking Press, 1980), pp. 68–77.

38. Piaget, *op. cit.*, p. 10.

39. Milton Friedman, *Essays in Positive Economics* (Chicago: Univ. of Chicago Press, 1966), pp. 41–43.

40. Chase, *op. cit.*, p. 298.

41. Georg Wilhelm Friedrich Hegel, *Wissenschaft der Logik, Zweiter Teil*, Vol. 5 of *Sämtliche Werke*, Hermann Glockner, ed. (Stuttgart-Bad Cannstatt: Friedrich Frommann Verlag, 1964), pp. 341–42.

42. Dahrendorf, *op. cit.*, p. 273.

43. Merton, *op. cit.*, p. 107.

44. Marion J. Levy, Jr., "Structural-Functional Analysis" in the *International Encyclopedia of the Social Sciences*, David L. Sills, ed. Vol. 6, 1968, p. 24.

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Land and Land Use in American History

FOR HIGH SCHOOL American studies classes, the Robert Schalkenbach Foundation is developing a series of self-contained lesson materials about the role land and its use have played in American history. Written by Stan Rubenstein, a social studies teacher for more than 20 years who is now again interim director of the Henry George School of Social Science in New York, and edited by Pat Aller, assistant director of the foundation, each lesson lists theme and subtheme, concepts, performance objectives and related texts. After a one-page summary of historical background, three activities are given, in which students follow directions and answer questions.

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