A Behavioral Theory of Sociocultural Evolution: An Illusive Answer to the Wrong Question?

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A BEHAVIORAL THEORY OF SOCIOCULTURAL EVOLUTION: AN ILLUSIVE ANSWER TO THE WRONG QUESTION?[1]

John Langton's recent article, "Darwinism and the Behavioral Theory of Sociocultural Evolution: An Analysis" (*AJS* 85 [September 1979]: 288–309), has drawn attention to evolutionary theories in sociology and has raised several questions and issues that deserve further comment and merit closer examination. Although at points the paper seems merely a confession of our ignorance about factors that produce sociocultural evolution (we are no better, but perhaps no worse off than Darwin was), at other points it appears to be an attempt to fill this void in our understanding and to provide us with a well-formed and powerful research strategy for analyzing cumulative developments and trends in human societies. Langton's explicit goal is to develop a theory of sociocultural evolution with the "logical structure" and "explanatory power" of the theory of natural selection developed by Darwin; yet one might question whether an isomorphic theory provides an adequate explanation of sociocultural evolution or merely posits an interesting parallel between Darwin's early work and the continuing work of some social scientists.[2] I assume that Langton's behavioral theory is an attempt to advance our understanding of processes that produce cumulative changes in the technology, information, and structure of human societies, and therefore I feel compelled to comment on what appear to be major shortcomings inherent in this theoretical approach to the problem.[3]

[1] I would like to thank Bruce Mayhew, Robert Miller, A. P. Smith, and an anonymous reviewer for their most helpful comments on the issues raised in this comment and on its style of presentation.

[2] The author's statement that "sociocultural systems evolve in a Darwinian manner" (p. 295) is either a very broad analogy (e.g., both have a random and a systematic component) or a serious distortion that ignores the major features of the technological and information-accumulating capacities of human societies.

[3] This is not the first time that the law of effect has been offered as a solution for the major problems confronting theories of sociocultural evolution. The interested reader should consult the comprehensive treatment of the subject by Houghton (1976). It is Houghton's contention that theories of sociocultural evolution would benefit immeasurably if they incorporated a focus on individuals, their reinforcement contingencies, and other aspects of Skinnerian behavioralism.

The first critical flaw in Langton's behavioral theory is its failure to consider adequately intersystem processes, intersystem competition, and major social-environmental transactions and exchanges. Employing Lenski's (1970) terminology one is struck by the fact that although the paper does consider certain aspects of the process of *intra*societal selection (extinction), it never addresses questions of *inter*societal selection (extinction) and consequently never comes to grips with the complex problem of determining the relationship between "choices" made by individuals or groups within a system and the survival chances of the system as a whole. The fundamental task that has engaged evolutionary theorists has not been to determine why people do or do not do certain things but rather to explain the differential survival of different (types of) systems under varying conditions and to determine the probable relationships between different social arrangements and technologies and the survival chances of societies. Why do some systems or types of systems survive and prosper (that is, become more frequent or come to constitute a greater proportion of human societies) while others vanish, disintegrate, or come to be incorporated into larger systems (see, e.g., Lenski 1970)? This question is not addressed or answered by theories of psychological reinforcement. It is not surprising that important macrosystem parameters affect the relative rates of reinforcement for different possible behaviors in a society, but the reinforcement does not directly determine the survival chances of individuals, groups, or societies that engage in these activities. Hence, the relationship between actions that are psychologically reinforcing and system survival is unspecified. If one recalls Pareto's (1963) classic distinction between the "utility for" and the "utility of" a community, it can be seen that the two are often at odds with one another. Actions that individuals within a society find enjoyable, rewarding, or reinforcing may not contribute to, and may in fact lessen, the survival probability of the social system of which they are a part. As a first step in identifying factors that contribute to cumulative change and developments in human societies, one must first identify factors that affect their survival and persistence (Segraves 1974). The behavioral theory ignores this aspect.

A second problem with Langton's theory is its failure to distinguish clearly between specific and general sociocultural evolution (Lenski 1970). The former denotes the changes and developments that take place within a particular society (its history, if you will), while the latter denotes the combined impact of internal processes, environmental transactions, and intersystem competition on the composition of the population of human societies. The historical record and prehistorical traces indicate that most societies fail to survive because of conflict or competition with others. Thus, by directing attention to the reinforcement contingencies within particular societies, Langton's behavioral theory fails to consider factors

which may be responsible for the basic trends in the population of human societies as a whole. Theorists who have attempted to determine the role of such factors as conquest, population pressure, and environmental degradation in producing basic changes in the characteristics of the populations of human societies have advanced our understanding of the process of sociocultural evolution; Langton's notion that the law of effect and reinforcement produces a march of progress (more effective arrow tips, etc.) has not. Since these external factors may in fact greatly structure the reinforcement contingencies within particular societies, we may do better to examine them directly rather than concentrate on an intermediary process by which they might be translated into human action (White 1949).

A third difficulty with Langton's conceptualization of sociocultural evolution arises from his extreme individualization of society and his atomization of culture. Langton's theory implies that societies are little more than aggregates of individuals locked in a "struggle for reinforcement," and that cultures are mere congeries of traits. As such it fails to consider adequately constraints on individual and group choices, and, more important, it ignores the fact that cultures and technologies evolve in complexes that evidence at least some degree of internal consistency (Wilkinson 1973). Given that human societies are in large measure systems of information and information processing where information is often stored and processed outside human crania, it is difficult to accept the notion that technologies and culture traits are simply a la carte items on cultural menus which can be selected independently by presumably autonomous actors. The constraints that the environment and the structure of information in human societies place on individual choices (and genius) led one evolutionary anthropologist (White 1949) to conclude that a better understanding of the process of technological and informational change would be achieved by ignoring the constants of human intelligence, wants, and desires and focusing instead on the systemic relationship between ideas and information in the system. One would be better off, he argued, if, when studying human cultures, one proceeded as if human beings did not exist! More recently it has been argued that, even in formally organized systems directed by individuals attempting to realize specific goals, the environment (broadly conceived) acts on the information and material organization of the systems independent of the subjective intentions and experience of the directing individuals (Hannan and Freeman 1977).

The autonomy of individuals and groups is further compromised by the fact that reinforcement contingencies are subject to manipulation by elites within societies, and even elites are limited by the technology and resources available to them and by the presence of or threat of competition with other elites. In class societies the majority of a society's members

find their choices constrained to varying degrees by elites, and though elites are often in a better position to maintain or increase their level of reinforcement, there is no guarantee that some other elite will not mobilize its resources more effectively, having stumbled on, invented, or harnessed some more effective technology or organizational procedure. The fact that competing elites find their activities reinforcing gives no added insight into this process and adds no information for predicting its outcome.[4] The outcome of such a conflict would in all likelihood be determined by their respective capacities to mobilize energy and information and not by the relative enjoyment they receive from their behavior. Therefore, although one would appear to be on firm ground in assuming that individuals and groups would opt for positively reinforced over punished or nonreinforced behavior, in the abstract, even this assumption must be greatly qualified in order to account for the major constraints that social and environmental factors put on choices and activities.

Perhaps the most damaging criticism that can be raised against the behavioral theory is the fact that ultimately it offers a constant process as an explanation of differences. The law of effect is presumably a constant operative in all human societies at all times. If all human societies are systems consisting of aggregates of individuals choosing from cultural menus and alternative behaviors and technologies so as to maintain, if not increase, their level of reinforcement, why do some societies survive and others not? Why do some choices and technologies succeed and others fail? Can the differential mortality of different (types of) societies be explained on the basis of this law? As a constant aspect of all societies it provides no information for discriminating between systems in terms of their survival chances or for predicting the relative success of systems in competition.[5] There is much evidence that hunter-gatherers found their societies and life-styles much more enjoyable and "reinforcing" than do the average members of agrarian societies, but the hunter-gatherer systems gave way because they could not mobilize comparable amounts of energy, information, and manpower and hence could not successfully com-

[4] Bruce Mayhew has called to my attention the more general charge of Hebermehl (1976), who argues that the vacuity of concepts like reinforcement and the triviality of the law of effect are often concealed by elaborate technical apparatus and hypothetical-mathematical models which make it difficult to see that little, if anything, is being said.

[5] If individuals choosing behaviors and technologies on the basis of reinforcement is the universal process that produces sociocultural evolution, what produces differences in evolutionary developments? Are there better choosers in some groups than others (a "great man" or a racialist explanation)? Do some individuals choose the wrong reinforcement? Are some environments more reinforcing or more likely to reinforce technological innovation? Factors such as these would have to be invoked to explain differences or change. In introducing these factors, one would, of course, be introducing the major explanatory *variables*.

pete with agrarian systems. The basic trend in the population of human societies has, therefore, shifted away from hunting and gathering to more powerful technologies and not to more enjoyable ones. One reason Langton may have overlooked this problem with his behavioral theory may be the inherent ambiguity of the term "reinforcement." At some points he is clearly using the term to refer to psychological reinforcement; yet at other points it appears to take on the broader meaning of environmental feedback and the consequences of different activities and technologies for the survival of individuals, groups, and societies that engage in or employ them. This seems to suggest at times that the environment reinforces some systems and activities by according them higher survival probabilities. This stretches psychological reinforcement beyond its legitimate conceptual elasticity. The explanatory power of environmental feedback and the differential survival probabilities of different forms of technology and social organization should not be confused with reinforcement and the law of effect. Employing the stretched concept of reinforcement, one might be tempted to conclude that a group of individuals were extinguished when they *chose* to be punished by a wave of cavalry, a hail of spears, a drought, a famine, or an epidemic disease![6] When the concept is expanded, a number of variables are unwittingly introduced into the theory, and they serve to increase the theory's plausibility.

Before closing, it should be noted that Langton's individualization of the process and his atomization of culture may have resulted from an attempt to avoid reifying or hypostatizing metaphysical "forces" in the evolutionary process (Harris 1979) in order to develop a concrete, empirical theory of sociocultural evolution.[7] This is indeed a worthy motivation, but Langton's procedure for accomplishing it entails a number of pitfalls and difficulties. The fact that much system activity is realized in or through the activities of individuals should not be taken as an indication that the individuals are aware of or understand the implications or consequences of what they are doing, and it should never be taken as an indication that they as individuals are in control (the anthropocentric illusion). Langton's theory implies that evolution is merely the aggregation of individual choices, and it implies that individuals, therefore, control the process of technological change and sociocultural evolution. This reduc-

[6] The role of disease in affecting the outcome of major military conflicts has been touched on by Zinsser (1935), and McNeill (1976) implicates sociocultural-disease interactions in a number of major trends in social development and organization.

[7] It may also be merely a reflection of an ideological-epistemological bias in the discipline which assumes that individuals are autonomous actors exercising "free will," and that societies and social structures are only aggregations of these individually motivated activities. It has been argued that theories which are immediately plausible and "obvious" are often only paraphrases or transcriptions of the dominant ideologies of the systems from which they emerge (Mayhew 1980, 1981).

tionistic tendency is itself regrettable since it ignores a number of macrosystem and intersystem factors which have been alluded to above, but the notion that reinforcement is the key to understanding sociocultural evolution leads Langton to even further reduction. According to Langton, a major breakthrough in the understanding of sociocultural evolution will be achieved when we penetrate the crania of individual actors to determine why people find reinforcers reinforcing. "At the 'theoretical' level, the behavioral theory will be incalculably enriched when someone discovers why, from a physiological standpoint, reinforcers and aversive stimuli have the effects they do" (p. 308). In what ways, we might ask, will this help us explain why some systems survive and others do not?

In summary, it would appear that Langton may have given an illusory answer to the wrong theoretical and empirical questions concerning the evolution of human societies—an answer which, if accepted, would not only make us think we had answered questions that are still unresolved, but would seriously deflect and misdirect future research on the evolution and development of sociocultural systems.

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