ABSTRACT: In this essay, I explore what economic science in partnership with behaviorological science might offer in constructing a more complete science of human behavior. My focus is on institutional economists, a community of heterodox economists who have an evolutionary understanding of culture and thus a close affinity to the behaviorological view of culture. I contrast mainstream (neoclassical) economics with institutional economics, provide an overview of the latter, and suggest some topics of mutual interest: namely, the instrumental-ceremonial dichotomy, the analysis of power relations, methodological individualism, and the definition of institution augmented with the concept of macrocontingency. I conclude with a call for the cross-disciplinary collaboration of institutional economists, cultural materialists, critical Marxists, radical behaviorists, and other evolutionary/materialistic behavioral scientists.

Key words: behaviorology, cultural materialism, institutional economics, macrocontingency, Marxism, radical behaviorism, Skinner, Veblen.

In Science and Human Behavior, Skinner (1953) states that if economists would take into account the myriad of extra-economic variables of which an individual’s actions are a function, they would begin to approach a complete science of human behavior. Commenting on the traditional subject matter of economic science, Skinner observes:

Statements about goods, money, prices, wages, and so on, are often made without mentioning human behavior directly, and many important generalizations in economics appear to be relatively independent of the behavior of the individual. A reference to human behavior is at least implied, however, in the definition of all key terms. Physical objects are not goods apart from their reinforcing value. More obviously, money cannot be defined without reference to its effect on human behavior. (p. 398)

AUTHOR'S NOTE:

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In Skinner's critique of the writings in economics, the aim is not to offer an alternative theory to economists. Following Skinner, behaviorologists would point out that (a) exchange behavior and its interactions with a material and social environment is the phenomenon studied by economists (and certain other behavioral scientists), and therefore (b) its controlling contingencies need to be considered in analyzing economic relations.

Given our concern with social issues, we should endeavor to extend Skinner's thinking on economics by exploring its ramifications for improving the human condition. Accordingly, to work toward a more complete science of human behavior, we must take into account not only the behavior of the individual but the social context itself—the myriad of economic and extra-economic variables, that is, a hierarchy of levels of social interaction patterns constituting the social milieu in which the individual is behaving. At this juncture, however, we cross the conventional disciplinary boundary of the science of behavior relations and change the focus of our conceptual "macroscope" (Rosnay, 1979) from the behavior of the individual to the dynamic properties of social environments consisting of any number of reciprocally interacting individuals. We thus enter the preserves of the so-called social sciences, but with a unique and powerful approach—a well-developed science of operant behavior interpreted within a contingency-based selectionist paradigm.

Economics and Human Behavior

The abstract concepts and generalizations found in mainstream (neoclassical) economics and other traditional social sciences overlook (or at least do not speak accurately about) the contingency relations that determine the actions of individuals and groups. When behavior is addressed, the accounts are typically couched in purposive or cognitive language and almost always fail to consider the consequences that actually control behavior. One exception that has gained the attention of behaviorists in recent years is cultural materialism (e.g., Lloyd, 1985; Malagodi, 1986; Vargas, 1985a), a Darwinian perspective within cultural anthropology issuing from the work of Marvin Harris (1979). And cultural materialism continues to interest behaviorists (e.g., Biglan, 1995; Mattaini & Thyer, 1996). But even this perspective presents us with some perplexing problems. As Vargas (1985a) notes, Harris asserts that at the level of the individual, free will prevails. An inferred agency freely deciding on some course of action subverts a natural science approach to the analysis of institutions. And Malagodi (1986) points out that "Cultural Materialism's current treatment of
verbal behavior is conventionally psycholinguistic—a difference that calls for additional behavioristic infusion into... [its] theoretical structure" (p. 13).

Based on the proposition that a better understanding of the contingency relations in our social and material environment will lead to a better understanding of human behavior in that environment, I explore what economic science in partnership with behaviorological science might offer in constructing a more complete science of human behavior. Specifically, I call attention to a community of heterodox economists who have an evolutionary understanding of culture, and thus a close affinity to the cultural materialist and behaviorological views of culture. This group of behavioral scientists is referred to as institutional economists (also known as institutionalists or evolutionary economists). By adopting the behaviorological perspective on the actions of individuals, institutional economists (and other behavioral scientists) would extirpate from their analyses all notions of a self-acting agency and replace them with at least potentially observable contingency relations. Doing so would be an epochal advance for the scientific understanding of human behavior in the social environment. A case in point, this replacement would undercut mainstream economists' view of "human nature" (Homo economicus) which holds that people are inherently individualistic, competitive, and self-seeking—just those characteristics needed to "explain" the capitalist economic system.

The attention behaviorists have given to economics has been confined mostly to certain concepts extracted from neoclassical economics and employed in an operant research area called behavioral economics. In a special issue of the Journal of the Experimental Analysis of Behavior devoted to behavioral economics, the editors (Bickel, Green, & Vuchinich, 1995) attribute the appeal of economics for these operant researchers to concepts and associated mathematical relations (e.g., demand curves, commodity substitution, and unit prices) that can be operationalized as choice behavior, schedule effects, delay of reinforcement, and other operant processes for the purpose of experimental analysis. Although research in the area of behavioral economics should be of interest to institutionalists (e.g., matching law studies showing the failure of the neoclassical axiom of rational behavior to predict accurately behavioral outcomes; see Herrnstein, 1990), institutional economics has a much wider scope of concern—including sociocultural variables, power relations, and social values. Following Skinner, only a few behaviorally oriented writers have examined economics from this wider-angle lens (e.g., Glenn, 1985; Lamal, 1991, 1992; Ulman, 1995, 1996). To date, only Glenn (1985) discusses institutional economics at any length. However, her discussion limits itself primarily to the view of
Clarence Ayres, a narrow technological-determinist view within this heterodox school of economic thought (see "Instrumental-Ceremonial Dichotomy" below; also cf. McFarland, 1986).

**What is Institutional Economics?**

**Institutional Economics versus Neoclassical Economics**

An appropriate way to begin an exegesis on institutional economics is to contrast it with mainstream economic theory, that is, with neoclassical economics. For Thorstein Veblen, (1857-1929), the founder of institutional economics (Tilman, 1993), neoclassical economics was not a body of scientific propositions, but a system of apologetics for vested interests (property owners). It was "premodern," according to Veblen, because it came from the old preconceived notion of natural law derived from an outmoded psychology of hedonism and was devoid of any suggestion of a Darwinian evolutionary process. Veblen insisted that to achieve the status of an up-to-date behavioral science, economics must adopt a standpoint from which its subject matter could be understood in evolutionary terms. Accordingly, he proposed that behavior be understood in terms of basic drives and propensities shaped by institutions. The origins, development, and properties of these institutions, in turn, become the proper subject matter of a truly scientific economics, an evolutionary economics. "An evolutionary theory, he further declared, must be capable of explaining in nonteleological terms the process of cumulative change through which those institutions evolve" (Ramstad, 1994, p. 365).

In a recent critical survey of institutional economics intended to be accessible not only to economists but to others who are involved in the economy at policymaking level, Samuels (1995) identifies eight principle facets of institutional economics that differentiate it decidedly from neoclassical economics: (a) social and economic evolution versus the neoclassical view of automatic mechanisms, the former implicating an explicit activist orientation toward social institutions; (b) the importance of social control and collective action, emphasizing that the market economy itself is a system of social control; (c) technology as a major force in transforming economic systems; (d) allocation of resources being ultimately determined by institutions, especially by power structures, not some abstract concept of a market mechanism; (e) economic value set, not by relative prices of commodities, but by "the processes through which the values enounced in institutions, social structures, and behaviour are worked out" (p. 574); (f) a culture shapes the behavior of its participants and, at the same time, produces certain
variations in the behavior of some participants that may in turn transform that culture (with the corollary that both individuals and culture matter, as does power, which governs who will have the greatest impact on transforming culture); (g) neoclassical economics, insofar as it functions to take things for granted, obfuscates and strengthens the existing structure of power—"a structure marked by inequality and hierarchy" (p. 574); and (h) a holistic approach that defines the economy broadly to include more than market mechanisms, emphasizing a multidisciplinary venture as requisite for meaningful descriptions and explanations of economic phenomena. To be sure, institutional economists' critique of neoclassical economics is wide-ranging, thoroughgoing, and complex (but beyond our scope to examine here; see Samuels, 1995).

Institutionalist Methodology

Atkinson and Oleson (1996) provide a concise summary of the methodology commonly employed by institutional economists:

1. The investigation should begin with a question and not an axiom.
2. Behavior must be analyzed and understood as purposeful.
3. All current situations are the result of historical processes and cumulative change.
4. The particular institutional structure must be known to understand behavior resulting from the structure.
5. History and analysis must be amalgamated in a holistic approach.
6. Evolution is a process in which purposeful artificial selection of critical factors tends to modify habit.
7. Negotiation has an important role. (p. 703)

Atkinson and Oleson discuss each of these methodological points and illustrate their application in the institutional economic literature. Concerning "purposeful" in items 2 and 6 above, it will be obvious to the radical behaviorist reader that the authors are referring to operant behavior.

Institutional Economics Today

Samuels (1995) finds that in the United States institutional economics "has been and remains the leading heterodox alternative to dominant neoclassicism in economics other than Marxism" (p. 569). There are variations within institutional economics, however. Some institutionalists consider their approach to be mutually exclusive with neoclassical economics, whereas others consider the two approaches to be mutually supplementary. At the other end of the political spectrum, some institutional economists consider their approach to be mutually exclusive with
Marxism, whereas others consider Marxism and institutionalism to have significant areas of overlap.¹ (Note: the relevance of Marxist theory for behavioral practitioners has been discussed elsewhere [Ulman, 1995]).

Samuels (1995) reports that in the last 25 years there has been a considerable renaissance in institutional economics such that today it is "rich, complex and diverse... [Moreover,] a great revitalization of institutionalism seems likely" (p. 570). He identifies a core of beliefs that unite the work of the institutional economists at both the theoretical and applied levels. In general, institutional economists and neoclassical economists differ fundamentally over the central problem in economics—how resources are allocated. In neoclassical economics the economy is presumed to be organized and guided by the market, whereas in institutional economics "the real determination of whatever allocation occurs in any society is the organizational structure of that society—in short, its institutions" (p. 571). Thus, institutional economists are principally interested in a different central problem—the distribution of power in society.

Complementarity between Institutional Economics and Behaviorology

Next, with the hope of stimulating interest in such aforementioned collaborative efforts, I will discuss some additional examples of institutionalist theorizing and suggest how behaviorology might contribute to institutional economics and vice versa. Four topics of importance to both disciplines will be examined: the instrumental-ceremonial dichotomy, the analysis of power relations, methodological individualism, and the definition of institution augmented with the concept of macrocontingency.

Instrumental-Ceremonial Dichotomy

A major theme within institutional economics is the instrumental-ceremonial dichotomy. Because it is a central analytic concept in institutional economics, how the instrumental-ceremonial dichotomy is construed is paramount in our appraisal of the institutionalist paradigm. Veblen theorized from the anthropological literature of his time that humans are endowed with two antagonistic drives or propensities: a prosocial drive for the betterment of the community and a

¹ Between 1930 and 1960, in the Texas School of economics (University of Texas at Austin), the academic environment from which institutional economics emerged, Clarence Ayers and a Marxist-oriented economist, B. E. Hale, debated the proper alternatives to neoclassical economics (Phillips, 1989). As one Texas School graduate put it, "Ayers was the 'thesis,' Hale was the 'antithesis,' and the students were the 'synthesis'" (Phillips, 1989, p. 29).
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predatory drive for invidious distinctions. Since the early 1900s, the Veblenian dichotomy has evolved in both its use and analytic character (Waller, 1994). In Veblen’s (1899/1953) original formulation, the dichotomy (initially termed the technological-institutional dichotomy) was treated as two behavioral categories. That is, Veblen analyzed two kinds of behavior: technological behavior, actions warranted by matter-of-fact knowledge, and institutional behavior, actions that are past-binding and resistant to change. Technological behavior is the source of prosocial change whereas institutional behavior maintains the status quo in the interest of invidious distinctions. Waller (1994) comments that “neither the ontological nor the analytic status of these concepts is expressly discussed by Veblen; consequently, usage by his followers has varied considerably” (p. 368).

Clarence Ayres, a leading institutionalist scholar in the quarter century following World War II, combined Veblen’s economic analysis with Dewey’s instrumentalism so that technology (instrumental behavior) became linked to Dewey’s instrumental valuation and institution became identified with ceremonial aspects of behavior. In Ayres’s interpretation of the Veblenian dichotomy (e.g., Ayres, 1962/1978), it is the particular social behavior itself that is either ceremonial or technological (instrumental). Waller (1994) notes the similarity in the two formulations: “Like Veblen, Ayres sees technological aspects of behaviour as causing change and ceremonial aspects of behaviour as inhibitive of change” (p. 369). But he also notes an important difference: “In Veblen, institutions and technology are categories into which behaviour or aspects of behaviour might fit. With Ayres, these categories become aspects of all behaviour that the analyst seeks to reveal” (p. 369). In Ayres’ formulation the categories became subject to reification, and institution became equated with ceremony—the implication being that, in contrast to technology, all ceremonial behavior/institutions are necessarily inhibitive of social change.

Some institutional economists have since argued that the dichotomy should be understood as a descriptive framework for analyzing cultural processes rather than as characterizations of types of behavior (Waller, 1994). However, Glenn (1985), discussing the reciprocal roles between behavior analysis and institutional economics, follows Ayres in favoring the latter interpretation. As Glenn characterizes this dichotomy, “technological behavior is the foundation of economic progress, while ceremonial behavior is the stumbling block, built on

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2 Ramstad (1994) observes that, although Veblen’s instinct psychology has been discarded, his “discussion of epistemological and methodological issues has lost none of its relevance and that his dichotomy provides insight into a host of contemporary issues” (p. 367).
legends and mores that mitigate against the evolution of culture” (p. 18). What this view implies for progressive cultural change is quite simple: encourage technological behavior and discourage ceremonial behavior. Unfortunately, such a solution, both in analysis and for social policy, is not so easy.

Institutional economists focus on altering institutional arrangements, not on modifying the behavior of individuals (see “Methodological Individualism” below). Floyd McFarland (1985), a former student of Ayres, observes that in sharp contrast to Ayres’s dichotomy, Veblen views, not an attribute of behavior, but the entire complex of institutions as outdated and ill-suited. Hence there is always an institutional “lag.” Accordingly, Veblen’s perception of institutions is far more radical than that of Ayres. Thus, Ayresian “institutionalists reject Veblen’s, and Marx’s, class analysis, thinking instead in terms of political pluralism [and gradual reform]. . . Nothing revolutionary, in the sense of social upheaval, is envisioned” (p. 101). Beyond this limitation, McFarland (1986) identifies incisively the fatal flaw in Ayres’s (and hence, in Glenn’s, 1985) formulation of the instrumental-ceremonial dichotomy:

The simple lumping of all aspects of behavior into the dichotomous conception of technology-institutions makes either verification or falsification impossible. If one looks with favor on whatever is taking place, one celebrates the triumph of technology; if one dislikes the trend of events, one simply laments the dominance or cussedness of institutions. To disciples, Ayres is never wrong. (pp. 622-623)

Waller (1994) credits J. Fagg Foster, a major contributor to the development of institutional economics, with an improved formulation, one that avoids the problem of reifying the two categories. Foster redefined the concept of an institution so that it has both ceremonial and instrumental aspects. Simply treat “all behaviour as part of a cultural process and the categories of the dichotomy as constituent elements—simultaneously present in all behaviour (at least potentially)—to be teased out by the analyst” (Waller, 1994, p. 369).

In sum, a survey of the institutional economic literature since Veblen’s pioneering work reveals that the ontological status of the instrumental-ceremonial

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1 The conclusion Dugger and Sherman (1994) reach about the relationship between Marxism and institutional economics is noteworthy:

The clearest convergence between modern Marxists and modern institutionalists is on two basic points: (1) a nonreductionist relational or holistic view of ideas, structures, and the individual; and (2) a nonstatic historical or evolutionary view of society as a process. The clearest differences . . . are in the areas of class versus power and in the notions of what kind of conflicts lead to revolutionary changes. (p. 126)

Notwithstanding these differences, Cornforth’s (1977) chapter, “Institutions and Political Power,” provides an enlightening institutional analysis of the relationship between class and power.
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dichotomy ebbs and flows between two polar interpretations: "from descriptive categories to reified universal aspects of human behaviour, though rarely are the polar extremes explicitly adopted" (Waller, 1994, p. 369). This ambiguity has generated a great deal of criticism of the dichotomy and its constituent terms, causing it to undergo much conceptual scrutiny. Standfield's (1989) criticism is especially penetrating:

Ceremonial suggests that ritualistic symbolic activity is somehow the focal point of the analysis. In fact, ceremonial in this sense is epiphenomenal; ritualistic activity merely expresses . . . the underlying phenomenon of power and its invidious exercise. The word technological tends to bring to mind the tools and at best the techniques of production. However, for Veblen the technological aspects had more to do with . . . the way of thinking, or the predisposition toward matter-of-fact problem solving. (p. 86)

Encouragingly, recent discussions of the instrumental-ceremonial dichotomy in the institutionalist literature (e.g., Brinkman, 1997; Dugger & Sherman, 1997; Edgren, 1996; Watkins, 1998) appear to be advancing a Darwinian view of cultural change similar to that of cultural materialism (albeit Harris's work is rarely if ever cited) and critical Marxism (e.g., Sherman, 1995; Wright, Levine, & Sober, 1992) and increasingly compatible with the science of behaviorology. In particular, the notion of two *types* (or forms) of behavior, instrumental and ceremonial, is losing favor. From the behaviorological perspective, as E. A. Vargas notes, "ontological assertions, when based on behavioral topographies, rest on a slippery slope angled to the circularity pit until the events responsible for those actions are discovered" (personal communication, November 25, 1997). With reference to cultural materialism, he adds that Harris shows how seemingly "ceremonial" actions are actually "instrumental" when we consider the consequences that control them and not merely their form or their antecedent control. For example, in *Cows, Pigs, Wars and Witches: The Riddles of Culture*, Harris (1974) provides several cases illustrating how the downstream consequences of ceremonial behavior may benefit a culture. The upshot of this discussion of the instrumental-ceremonial conundrum is to suggest that its resolution calls for the cross-disciplinary collaboration of institutionalists, cultural materialists, critical Marxists, radical behaviorists, and other evolutionary/materialistic behavioral scientists.

**Analysis of Power Relations**

As one sociologist commented, *power*, like *love*, "is one of those phenomena which are both highly relevant and at the same time difficult to define"
In neoclassical economics, however, the issue of economic power is shrouded in "marketplace" abstractions. As Rothschild, (1994) explains, the change from classical to neoclassical economics in the second half of the nineteenth century was accompanied by a shift of focus from linkages between economic processes and other aspects of sociopolitical phenomena to mathematically-based equilibrium theorizing. "'Political Economy' turned into a . . . narrowly specialized 'Ecometrics' which—attracted by the methods and achievements of mechanical physics—aims at modeling . . . the equilibrium of free market exchanges and production processes" (Rothschild, 1994, p.175).

In contrast, power has always been a central concept in institutional economics. However, no single definition of power exists among institutionalists. Typically, as Bartlett (1994) observes, power is restricted to social interactions where some individuals have the ability to affect the actions of others. But even when limited to social interactions, the term power encompasses a wide variety of relationships in a broad range of contexts such as power exercised by market actors, power over nonmarket social choices, or power over personal values (also referred to in Marxist literature as ideological control). In general, power from the perspective of institutional economics seems consonant with Skinner's (1953) conception of economic control:

The power to wield economic control naturally rests with those who possess the necessary money and goods (positive reinforcers). The economic agency may consist of a single individual, or it may be as highly organized as a large industry, foundation, or even government. It is not the size of the structure which defines the agency as such, but the use to which the economic control is put. (p. 400)

Skinner's focus, of course, is on variables (contingencies manipulated by sociocultural agencies) that control the actions of the individual, whereas institutional economists focus on the institutional arrangements that make power available.

In short, both disciplines could profit greatly from a collaborative effort addressed to an institutional/behaviorological analysis of power relations. To adequately cover the issue of an interdisciplinary approach to power relations would go far beyond the scope of my essay. I can merely suggest such efforts here. For further discussion of power from the viewpoint of behaviorists, see Biglan (1995) and Vargas (1975); of institutionalists, see Klein (1987); of Marxists, see Isaac (1987); of cultural materialists, see Harris (1994).

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Methodological Individualism

From its inception, institutional economics has rejected the conception of human behavior found in mainstream economics. In 1906, Veblen observed that in orthodox economic theory the human being

has neither [cultural] antecedent nor consequent. He is an isolated definitive human datum, in stable equilibrium except for the buffets of the impinging forces that place him in one direction or another. . . . When the force of the impact is spent, he comes to rest, a self-contained globule of desire as before. (Veblen, 1906/1993, quoted in Dugger, 1992, p. 79)

Institutionalists clearly discount the study of human behavior in isolation from the cultural context. Specifically, they reject the *methodological individualism* endemic to neoclassical economics: “its practice of treating individuals as independent and self-subsistent, possessing given preferences” (Samuels, 1995, p. 572). As Dugger (1992) states:

If the investigator begins explaining human behavior with the individual and not the institution, he shares the subjective preconceptions of the neoclassicist, perhaps better known as methodological individualism . . . “the doctrine that only individuals are real, societies and groups are not, and therefore all explanation must be based ultimately on statements or laws about [individual] human behavior” [quoting Diesling, 1971]. (p. 78)

In contrast, institutional economists argue that “individuals and culture are mutually interdependent and that the . . . concept of a ‘market’ is a metaphor for the institutions which form, structure and operate through it” (Samuels, 1995, p. 572). Hence, institutional economists analyze

the social forces which condition and channel the formation of markets and the exercise of individual choice and behaviour; the institutions which constitute and operate through markets; the economy understood as a system encompassing more than the market and undergoing systematic evolution, in part due to institutional and technological change; and, inter alia, the factors and forces actually operative in the economy. (Samuels, 1995, p. 572)

Unlike neoclassical economics, cultural variables are of pivotal importance in institutional economics. (For a thorough treatment of culture in institutional economics, see Jennings & Waller, 1995). Given this concern with culture, it would seem that cultural materialists and institutional economists would also have much to share. However, as mentioned, significant interchange between them has yet to occur.

In their explications of the methodological differences between institutional and neoclassical economics with respect to human behavior, it is heartening to
read what some institutional economists say about Skinner's science of human behavior—particularly in Dugger's work. He relates that "the institutional approach takes the psychological perspective of behaviorism" (Dugger, 1992, p. 77). Referring to Skinner's (1971) operant analysis of preferences, Dugger (1992) writes:

Behaviorism grounds the roots of human action in institutional structures ... rather than in individual preferences, which are ... derivative or unreliable due to their introspective or subjective nature. But behaviorism is not void of preconceptions ... [It] preconceives individual preferences, when they must be used in an analysis, as largely derived from the cultural-institutional milieu. ... Hence, an explanation of human behavior should start there—with how that milieu has evolved and with how it affects and is affected by the behavior of individuals. (pp. 77-78)

Characterizing the social context in which economists study human behavior, Dugger's (1992) comments suggest further compatibility between institutional economics and behaviorology:

Institutional economics can be understood as a set of concatenated theories or pattern models composed of institutions as building blocks, with behaviorism as the psychological foundation. In contrast, neoclassical economics can be understood as a set of hierarchical theories or predictive models composed of individual firms and individual consumers as the building blocks, with subjective or methodological individualism as the psychological foundation. (p.78)

Another institutional economist, Geoffrey Hodgson (1994), relates that equally problematic is the obverse of methodological individualism, methodological holism: "the proposition that all social phenomena are explicable only in terms of social structures, social institutions, or social culture" (p. 64). Where methodological individualist explanations reduce to the exclusive matter of individual parts, methodological holist explanations reduce to the exclusive matter of the social whole. Hodgson elucidates a nonreductionistic alternative to both methodological individualism and methodological holism:

The purposes of an individual could be partly explained by relevant institutions, culture, and so on. The latter, in their turn, would be partly explained in terms of other individuals. But these individual purposes and actions could then be partly explained by cultural and institutional factors, and so on, indefinitely. (p. 66)

Of course, "individual purposes and actions" can be interpreted behaviorologically as human operant behavior.
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To the extent that behavioral researchers—particularly those in the area of behavioral economics—adopt the conceptual framework of neoclassical economics, imbued as it is with the problem of methodological individualism, to that extent their analysis of human behavior will be inherently limited. This is not to convey fault with the research methods or empirical findings of behavioral economics. Rather, to borrow from Malagodi (1986):

> The issue in question is the often implicit notion that a thorough knowledge of our experimental facts and principles rather automatically enables us to “see similarities” between what has been isolated under controlled conditions in the laboratory or the applied setting and what occurs in the culture at large. (p. 5)

The main point is that the two disciplines, behaviorology and institutional economics, operating conjointly, can avoid the problem of reductionism (methodological individualism or methodological holism) and, at the same time, enrich one another by providing more complete accounts of human behavior within the cultural context. (For a critical Marxist discussion of the problem of methodological individualism, see Wright, Levine, & Sober, 1992)

**Augmenting the Definition of Institution**

Another important area for collaboration would be the further refinement of the institutional economists’ basic unit of analysis, the institution, by incorporating our basic unit, the operant. A behaviorological elucidation of the concept of an institution may (a) allow institutional economists to make a fine-grained analysis of the actual controls on the actions of participants in an institution; (b) provide behaviorally-oriented investigators with a larger unit of analysis, one that incorporates the actions of participants who constitute an institution, ranging from a family unit to a multinational corporation; and (c) serve as a bridge to facilitate mutually beneficial interdisciplinary collaboration.

At the onset we must ask, What exactly is an institution? *The Encyclopaedia of the Social Sciences* lists a multitude of definitions, but the common core is that institutions “fix the confines of and impose form upon the activities of human beings” (Hamilton, 1932, p. 84). For Veblen, *institution* meant simply widespread social habits. Neale (1987), a contemporary institutional economist, provides a more refined definition. An *institution* is identified by three characteristics: *people doing*, people engaged in observable activities; *rules*, giving the activities repetition, stability, and predictable order; and *folkviews*, participants’ statements explaining or justifying the activities and the rules. According to Neale, “rules are identified by ordering the doings into repetitive event sequences. [One] observes and records...
what happens [so that one can,] . . . after a number of observations, state that in such-and-such a kind of situation this person will do this-and-such and another will do thus-and-so" (p. 1182).

To infuse the analysis of contingency relations into the analysis of institutional relations, let us consider the concept of the macrocontingency. In 1978, I suggested that behaviorists begin to examine "those enormous controlling variables that operate at the institutional level of analysis . . . [which] might be called 'macrocontingencies'" (Ulman, 1978, p. 62). I proposed the macrocontingency as a conceptual tool for analyzing all kinds of sociocultural phenomena, but did not offer a functional definition of the concept. Subsequently, Sigrid Glenn (1986) provided a functional definition of what she called a metatontingency, defined as "the unit of analysis describing the functional relations between a class of operants, each operant having its own immediate, unique consequence, and a long-term consequence common to all the operants in the metacontingency" (p. 2).

Although Glenn's concept of metacontingency is widely cited in the behavioral literature, I find serious problems with it. First, it seems difficult to impossible to identify unambiguously and nonarbitrarily "the long-term consequence common to all the operants in a metacontingency" operating in the flux of real, complex social phenomena such as in the case of poverty (Ulman, 1996). What, for example, is the long-term consequence responsible for the social condition of poverty? Second, as defined, the metacontingency denotes only one particular configuration of contingent relations where in actual cultural settings the possible configurations of social contingencies are essentially limitless. Moreover, not all consequences have functional significance, and some events that follow behavior may have functional significance but are not consequences (see postcedent below). So a special term for a particular configuration of consequences seems unwarranted. Third, the concept of the metacontingency is tainted by the teleological notion of a collection of operants somehow being propelled forward in time toward a long-term consequence that has yet to occur. Just how this process is supposed to operate is not explained. Fourth, the term metacontingency itself is problematic. The prefix meta implies something situated behind, beyond, or transcending (as in metaphysics) whereas macro means long in extent, of long duration, or inclusive and contrasts with micro (as in micro- and macroeconomics). The difficulty here is that meta suggests a discontinuity between contingency relations that engage the actions of an individual and those that involve the actions of others. Macro does not suffer from this connotative problem (i.e., going from micro to macro appropriately suggests a continuum).
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Macrocontingency may be defined as a set of differing actions (topographies) of different individuals under common postcedent control. Postcedent refers to events that follow actions. In operant terminology, postcedents that increase the actions they follow define reinforcing events; those that decrease the actions they follow define punishing events; and those that have no effect on the actions they follow are neutral or ineffective (and therefore do not exert postcedent control). Because this matrix of two-term contingency relations that defines the macrocontingency may involve any number of individual or collective actions—verbal as well as nonverbal and covert as well as overt—under the same postcedent control, the complexity of the contingency relations constituting a macrocontingency is unlimited. That is, the flexibility of the definition of the macrocontingency allows for descriptions of real correlated actions among any number of individuals and with any degree of complexity. Hence, as defined here, the concept of a macrocontingency is elastic—expanding or contracting with increasing or decreasing complexity so as to describe the actual material conditions as can best be determined from an empirical analysis of the nexus of contingency relations (consequences and other events) constituting the real sociocultural phenomenon under investigation. Due to practical constraints, of course, an analysis of a sociocultural phenomenon may need to be more conceptually than empirically based, in which case the positing of the macrocontingency as the controlling variable replaces notions of control by some ethereal inner or transcending (meta-) agency.

Continuing with our proposed functional analysis of the institution concept, in place of rules (i.e., "orderly event sequences"), we can now substitute the term macrocontingency without fear of distorting the basic idea of Neale’s definition of institution. By assuming that “orderly event sequences” are due, not to rules, but to macrocontingencies—including verbally-governed interactions among individuals—we avoid reifying the concept of rules (see Vargas, 1988). At the same time, we do not posit the existence of any new principles of behavior.

Next, let us consider the third component in Neale’s definition of institution, foliewiews. According to Neale (1987), foliewiews provide information needed to participate intelligently in the activities of the community. They justify the activities or explain why they are going on, how

4 Use of the term postcedent enables behaviorologists to make more precise analyses of contingency relations. Just as antecedent refers to events that precede behavior, only some of which may be controlling variables (e.g., discriminative stimuli), postcedent refers to events that follow behavior, only some of which may be controlling variables (e.g., reinforcers). Both terms simply designate the time relation between actions and events. Consequence has a more restrictive meaning; effects produced by behavior. Furthermore, not all consequences are controlling variables (see Vargas, 1985b).
they are related, what is thought important and what unimportant in the patterns of regularity. Folkviews, like rules, can be discovered by observation. (pp. 1182-1183)

Folkviews are not presumed to be inherently truthful, however. Rather, "what one wants to know is how the ideas of a culture interpret events and explain the world around them" (Neale, 1987, p. 1183). Neale's qualification here suggests an analogy: the folkview is to the macrocontingency in an institutional analysis as the form of the verbal operant is to the contingency in a behaviorological analysis. Just as tacts may vary from being "objective" or "true" (pure) to "subjective" or "wishful" (distorted) (see Skinner, 1957/1992, ch. 6), we should presume that folkviews may likewise vary in the veracity with which they describe institutional situations, depending upon the substrate of controlling macrocontingencies. Importantly, the behavioral regularities reported by the participants describing the institutional situations in which they are involved, as well as the controlling macrocontingencies, are at least potentially verifiable by direct observation.

An essential feature of Neale's (1987) operational definition of the institution is that

the components of an institution may be observed, but an institution itself cannot be observed as a whole. Rather, what one can observe are activities of people in situations. A situation is the total relevant context in which a participant in a society finds himself at any moment. It includes the social rules and the cultural folkviews as well as the physical or natural environment and it is "structured" by the prior acts (verbal as well as physical) of the participants and others. (p. 1184)

In short, "each constituent of an institution can be observed, or can be stated as testable predictions of event sequences: (1) people doing; (2) the rules [macrocontingencies], including the situations in which they are followed; and (3) the folkviews [supposedly] explaining the rules" (Neale, 1987, p. 1185). However, we do not assign any special ontological status to folkviews. They are nothing more than verbal behavior and as such are amenable to an operant analysis to determine the variables of which they are a function.

The intent of this suggested behaviorological refinement of the concept of the institution is to help advance a more comprehensive unit of analysis for the study of sociocultural phenomena, one that incorporates the analysis of contingency relations. At this stage one might ask, What is the point? Institutional analysis is certainly quite removed from the operant laboratory and does not seem to have immediate application for the behavioral practitioner. Nonetheless, from the basic-science standpoint alone, Skinner (1953) expresses the need to expand our focus:
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The interchange within a group and the heightened effect of the group upon the environment may be studied within the framework of a natural science. They need to be explored further before we accept the proposition that there are social units, forces, and laws which require scientific methods of a fundamentally different sort. (p. 312)

From the applied standpoint, there is a growing demand among behavioral practitioners for institutional-type analyses, but some behaviorally oriented authors resort to cognitive explanations (possibly by default). For example, in his chapter "Coercion: A Two-Level Theory of Antisocial Behavior"—a synthesis of the research on the development of antisocial and aggressive behavior of young people—Snyder (1995) calls attention to the need to integrate data at both the microsocial and macrosocial levels. Sadly, Snyder suggests that to deal with the complexity of behavior in the social environment we need to adopt cognitive accounts. A similar need is expressed by Biglan (1995) in his book on cultural change: "cognitive . . . aspects of attitudes can be understood in terms of relational frames" (p. 82). However, it remains unclear how a speculative analysis based on relational frames differs significantly from a cognitive explanation. Combining an institutional analysis with an operant analysis incorporating the concept of the macrocontingency would eliminate the need for investigators of sociocultural phenomena to resort to cognitive accounts or other explanatory fictions that play host to the notion of an agency within. Furthermore, it would be a natural way for researchers in behaviorology to promote collaborative relationships with those in institutional economics, a discipline with close affinities to the science of contingency relations.

Conclusion

Although institutional economists have their own journal (the Journal of Economic Issues) and their own professional organization (the Association for Evolutionary Economics), many seem to have opted to try to reform mainstream economics—a discipline that is abstract, deductive, ahistorical, has a flawed view of human behavior, and essentially ignores cultural evolution. Because of this incommensurability, it appears that institutional economists have about the same likelihood of reforming mainstream economics as radical behaviorists have of reforming mainstream psychology—dominated as it is by the cognitive paradigm and hypotheses about an initiating agency within—or, for that matter, evolutionary biologists of reforming "creation science." Arguably, time spent on attempting to reform the practices of a community based on an incommensurable
paradigm is time taken away from advancing the science based on one's own paradigm.

From a more global view, I suggest that the mentalism promoted by mainstream psychology and the abstract, deductivist, rational-choice, equilibrium model promoted by neoclassical economics (i.e., atomistic buyers and sellers in the omnipresent competitive marketplace) are both essential ideologies for maintaining the status quo of power relations in the world today. Psychology informs us that the problems people face in daily living originate in their psyches (also, that behavior tagged as deviant is in need of adjustment to the prevailing norm) and neoclassical economics informs us that the competitive economic system called capitalism is the natural state of affairs for the duration of human existence. In either case, it would be naïve for us to underestimate the powerful influence these mainstream currents have on our culture. But cultures can change and change abruptly in profound and largely unanticipated ways (e.g., the precipitous disintegration of the Soviet Union).

To make a more complete science of human behavior available for cultural selection in the future, we need to develop an alliance of paradigmatically compatible behavioral scientists committed to progressive social change. We can learn much from the institutional economists, at least as much, I venture, as we have from the cultural materialists. In exchange, we can offer the institutional economists what we have learned in our efforts to try to build an enduring scientific community based on the premise that selection by consequences is indeed the causal mode of all life forms—biological, behavioral, and cultural (Skinner, 1981). To promote collaboration, I would first stress to institutional economists that the science that Skinner initiated is their basic science. As Vargas (1994) expressed eloquently:

All behavioral sciences target the same phenomenon—the behavior of organisms in relation to their world and their body. Each behavioral science, however, approaches the analysis and explanation of behavior differently. Economists, for example, concentrate on behavioral relations that involve goods and services and their exchange values. . . . Behaviorology’s scope is broader, since it encompasses any action within any setting, either that of an individual or group, and deals with the value of any consequences. Since the operant is our basic unit of analysis, our analysis of behavioral phenomena begins with the contingent relations between actions and postcedent events. But we share the same domain of phenomena with the other behavioral sciences. (p. 21)

Toward this goal, it would be important to clear up any misconceptions institutional economists may have about Skinner and the science he established. For example, Hodgson (1993) states, “The behaviourists import mechanistic
scientism into the study of human action: for them, all is mechanical cause and effect" (p. 227). Hodgson fails to distinguish between (a) early mechanistic stimulus-response behaviorism introduced by J. B. Watson in 1913 and perpetuated by methodological behaviorism and (b) contemporary radical behaviorism contributed by B. F. Skinner. Additionally, Hodgson faults behaviorism for ruling out any consideration of purpose and intention in accounting for human behavior. But Skinner (1974) is clear on this issue: "A stimulus-response formula has no answer, but operant behavior is the very field of purpose and intention" (p. 55).

Second, I would urge that both disciplines continue to reach out to other marginalized behavioral scientists who operate on the basis of the same materialistic selectionist principles. This would exclude neo-Hegelians, Marxist or otherwise, who are selectionistic but also are philosophical idealists. Likewise, it would exclude materialists who are mechanistic/positivistic, not selectionistic, theorists. Obviously, behavioral scientists who are both selectionists and materialists (but not mentalists/cognitivists) would be included. As suggested earlier, institutional economists might find fruitful ways of collaborating with cultural materialists, just as behaviorists have for several years now. And as I argue elsewhere (Ulman, 1995) and as Dugger and Sherman (1994) aver from the standpoint of institutional economics, we should also reach out to paradigmatically compatible Marxists.

Biological scientists must struggle against so-called creation science in defending selectionism at the biological level, that is, natural selection. In defense of selectionism at the sociocultural level, behavioral scientists must struggle against agencyism—the reification of a mentalistic construct or attribute into an agent that directs behavior from within the organism (Vargas, 1994)—a position that not only characterizes mainstream psychology but is also endemic throughout the social sciences. Hence, to the extent that our mutual concern is the study of contingent relations between actions and other events, I suggest that radical behaviorists are natural allies of institutional economists as well as of other selectionistically oriented behavioral scientists such as critical Marxists and cultural materialists. What is needed from a behaviorological perspective are the conceptual and empirical analyses of the macrocontingencies that control social behavior embedded in the historical and current economic and material conditions.

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3 Cultural materialists are not enamored of neoclassical economics. For instance, Harris (1981) writes about the shortcomings of contemporary mainstream economics—as he calls it, "the new dismal science"—in relation to the problem of poverty (discussed in Ulman, 1996).
of our culture. As the result of building collaborative efforts upon a behaviorological foundation, perhaps the artificial walls that currently separate ontologically compatible behavioral sciences may soon begin to come down.

Recognizing the potential for this natural alliance, how can we promote a professional convergence with social scientists who share our selectionist natural science perspective, such as the institutional economists? Three concrete actions come to mind: First, we could submit manuscripts to journals outside of our basic science discipline (e.g., the *Journal of Economic Issues*) explaining behaviorology as the basic science of behavior relations (including the social relations) that constitute institutions. Second, we could invite representatives from other paradigmatically commensurate disciplines to speak at our meetings. Finally, we could reach out organizationally to selectionistically oriented natural scientists in other disciplines, both biological and sociocultural—possibly forming an interdisciplinary association to promote cross-fertilization through mutual scientific inquiry. I offer these ideas with the hope of generating some constructive discussion and interdisciplinary collaboration in the face of a cultural context that is profoundly at odds with our efforts. The task is daunting, yet, in the final analysis, if humanity is to survive the growing world economic, social, and ecological crises, it will do so only with the guidance of a more complete science of human behavior.

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