Contextualism: The World View of Behavior Analysis

EDWARD K. MORRIS

Department of Human Development, University of Kansas

The thesis of this paper is that contemporary behavior analysis—and the behavior analysis of child development in particular—is contextualistic in world view, in contrast to its traditional characterization as being mechanistic. The contextualistic character of behavior analysis is introduced by presenting some material on the field's historical background. This material, though, is not presented in the manner of the standard account, but rather in a revised account with respect to such movements as empiricism, associationism, positivism, operationism, and pragmatism. The thesis is then developed more fully by comparing and contrasting the contextualism of behavior analysis with mechanism, both of which are analyzed with respect to five core developmental issues: (a) elementarism versus holism, (b) development as response-based change versus structural change, (c) causal versus functional analysis, (d) continuity versus discontinuity, and (e) the passive versus active nature of development. Finally, the importance of "context" in contextualism is examined and organized according to current behavior-analytic practices. Concluding commentary focuses on the salutory effects of having both behavior analysis and mainstream developmental psychology be commensurable in world view, especially with regard to such issues as cognition.

In 1942, Stephen C. Pepper published a book entitled World Hypothesis: A Study in Evidence. In that philosophically enlightened but sometimes opaque work, Pepper presented what he took to be several relatively adequate and autonomous world views—among them, mechanism, contextualism, and organicism—formulated somewhat commonsensically ac-

This paper is dedicated to Sidney W. Bijou—mentor, colleague, and friend—in celebration of the 25th anniversary of his having founded the Journal of Experimental Child Psychology. Appreciation is extended to Philip N. Hineline, who invited an initial version of this paper for a 1987 symposium conducted at the meeting of the American Psychological Association (Morris, 1987), and to Donald M. Baer, Lisa M. Johnson, Bryan D. Midgley, Hayne W. Reese, Susan M. Schneider, James T. Todd, and Grover Whitehurst, who provided helpful comments on other versions of the present manuscript. The author, however, is responsible for any remaining alchemy of argument or maladroitness of mind. Appreciation is extended also to the Harvard University Department of Psychology and to the May Institute (Chatham, MA) for their respective Spring and Summer 1988 Visiting Scholar appointments. Reprint requests should be sent to the author at the Department of Human Development, University of Kansas, Lawrence, KS 66045.
According to their respective underlying root metaphors, those being the machine, the historic event, and the living organism.

For many years, Pepper's analysis of how these world views interacted with the conduct of normal science was of little explicit consequence in developmental psychology for perhaps two related reasons. First, Pepper argued against the possibility of a strictly empiricist and logical epistemology devoid of world views (see also Lakatos, 1978; Laudan, 1977), thereby taking a position that ran counter to the logical positivism that had dominated psychology since the 1930s. And second, Hull–Spence S–R learning theory—a derivative of this logical positivism—gave rise first to dynamic social learning theory (Bandura & Walters, 1963; Berlyne, 1965; Dollard & Miller, 1950; Miller & Dollard, 1941; Mowrer, 1960; Sears, Maccoby, & Levin, 1957) and then to cognitive social learning theory (Bandura, 1977), which became the orthodox views within developmental psychology between about 1940 and 1970 (see White, 1970), stultifying other considerations—in this case, countervailing ontological and epistemological views.

Not until the early 1970s, when a major shift in orientation occurred within developmental psychology, did Pepper's analysis seem relevant. It was then that Reese and Overton (1970; Overton & Reese, 1973), among others (see, e.g., Lerner, 1976), adopted Pepper's distinctions between the mechanistic and organismic world views as a basis for understanding the tensions produced by the shift from a learning-theory-based child psychology to a cognitive-developmental one. These tensions concerned the criteria for evaluating meaningful research questions, appropriate research strategies, acceptable explanations for empirical findings, and adequate theories of development in general.

The exemplars of the mechanistic and organismic world views offered by Reese and Overton at that time were, respectively, Bijou and Baer's behavior analysis of child development (see Baer, 1970, 1973, 1976; Bijou, 1976; Bijou & Baer, 1961, 1965, 1978) and Piaget's cognitive-developmental psychology (see Piaget, 1952, 1971, 1983; see also Lerner & Kauffman, 1985). Although Reese and Overton presented mechanism and organismism with impartiality, the profession of developmental psychology since then has generally championed organismism and dismissed mechanism. Indeed, mechanism has acquired such pejorative connotations that to be cast as a mechanist can be among the gravest of aspersions.¹

¹ What it means to be mechanistic is, of course, subject to many interpretations (see Zuriff, 1985, pp. 186–192). Indeed, on the positive side, to be mechanistic is, in one sense, only to be scientific—that is, to assume that the subject matter of psychology is lawful: "Man is not made into a machine by analyzing his behavior in mechanical terms. ... Man is a machine in the sense that he is a complex system behaving in lawful ways" (Skinner, 1971, p. 202). That sort of mechanism has been and will continue to be highly productive. In biology, for instance, the triumph of mechanism over vitalism was clearly
But mechanism and organicism were only two of Pepper's world views. In the past decade, contextualism has emerged within the developmental and life-span literatures as a third alternative (Morris, 1986), promoted initially as a form of dialectics (Riegel, 1975, 1976a, 1976b) and more recently (a) as an integration of contextualism with either dialectics (Lerner, Skinner, & Sorell, 1980) or organicism (Lerner & Kauffman, 1985), (b) as an integration of mechanism and organicism (Lerner, Hultsch, & Dixon, 1983), or (c) simply as contextualism per se (Blank, 1986; Dixon, 1986); it has an affinity, as well, to developmental systems theory (e.g., Sameroff, 1983). Psychology, more generally, has also begun resonating to these and similar views, as evinced by Rosnow and Georgoudi's (1986) recent *Contextualism and Understanding in Behavioral Science* (Morris, 1988b; Taylor, 1988), where the approach has been related, as well, to transactionalism, constructionism/constructivism, and perspectivism. In none of these cases, however, should contextualism be taken as a dominant view or as not having raised criticism (see, e.g., Kendler, 1986), for the other world views still largely characterize contemporary psychology. Contextualism, though, is an exciting new alternative as psychology in all its pluralism continues to evolve as a science.

Throughout all of this, behaviorism in general, and S–R learning theory in particular, has been cast (and castigated) by organicists and contextualists as being mechanistic and, as such, for adhering to a world view inherently incapable of representing human development in any adequate fashion (e.g., Lerner, 1976; Sameroff & Cavanagh, 1979). Such criticisms are both right and wrong. They are wrong in the sense that Pepper presented each world view as relatively adequate and autonomous within its own metatheoretical framework, meaning also that cross-view criticisms are misplaced in that they contribute nothing to the intellectual validity of the alternative programs (Pepper, 1942, pp. 98–99). Those criticisms, though, do contribute political and emotive validity to their own programs through rhetorical style (cf. Czubaroff, 1988), which serves to remind

---

a major positive advance in the scientific (i.e., mechanistic) development of that domain of inquiry. Interestingly, though, as the self-actional, vitalist views (the first stage of scientific evolution) once gave way to the mechanistic views (the second stage of scientific evolution), so too has mechanism now given way to contextualistic, field-theoretic views in biology (the third stage of scientific evolution) (see Weiss, 1969; cf. Dewey & Bentley, 1949; Kantor, 1946; Pronko & Herman, 1982). In a like manner, physics had earlier moved from classical mechanics to the relativity of a contextualistic, integrated-field perspective (Einstein & Infeld, 1961). So too might we hope that psychology will evolve from its versions of vitalistic (i.e., self-actional, sometimes organismic) and mechanistic world views toward a contextualistic, integrated-field perspective (cf. Dewey & Bentley, 1949; Kantor, 1946; Pronko & Herman, 1982). If so, then perhaps Pepper's world views are not as individually adequate and autonomous as originally construed. Perhaps they are stages in the evolution of science toward an increasingly successful working with the subject matter—clearly a topic for another paper.
us that science is as fallible as the behavior of scientists and as fallible as the culture in which the science is embedded—an important pragmatic concern (e.g., with respect to funding, see Kaufman, 1970) and a not uncontextualistic perspective. In another sense, however, the criticisms are right by their respective internal standards, and they are devastating in their characterization of the inadequacies of the S–R tradition on that basis, albeit sometimes mean-spirited in tone.

But a problem exists in all of this: The behavior theory being criticized bears little resemblance to the actual behavior-analytic view of child development (Bijou, 1979, in press). Some distinctions between the two behavioral traditions have been made of course, but they have largely focused on relatively nonmetatheoretical issues pertaining to matters of terminology and definition, research design, theory construction (e.g., inductive vs deductive), and clinical and educational applications (see, e.g., Cairns, 1983; Stevenson, 1983; White, 1970). Fundamental metatheoretical differences have been largely overlooked or misunderstood (but see Reese, 1982, 1986).

Reciting litanies of how behavior analysis differs from the S–R learning theory tradition (or from its typical caricaturizations) typically evokes in-unison concurrence within the behavior-analytic community and serves, as well, internally important clarifying and motivational functions (see, e.g., Bijou, 1979; Horowitz, 1975; Todd & Morris, 1983). Such recitations, though, too infrequently make a substantive enough contribution toward explicating and expanding the behavior-analytic program, especially as that program contrasts with alternative views. The present paper thus seeks a more ecumenical and constructive spirit: Its thesis is that behavior analysis is contextualistic in world view, a thesis that is developed in three ways.

First, a discussion of the contextualism within behavior analysis seems appropriately begun with some historical background, because contextualism's root metaphor is the historic event. Broadly speaking, this metaphor directs us to the continually evolving character of behavior, as well as of the field of behavior analysis: Each interaction is the unique product of past activity in current context, as well as being the historical context for the next interaction. For present purposes, what it means for behavior analysis to be contextualistic can, in part, be understood in terms of its historical development, which is presented in the first section of this paper—however, not in the manner of the received view, but in a revised account. In the next section, the thesis is developed further and more specifically by comparing and contrasting contextualism with mechanism, and analyzing both with respect to their consequences for five core developmental issues: (a) elementarism versus holism, (b) development as response-based change versus structural change, (c) causal versus functional analysis, (d) continuity versus discontinuity, and (e)
the passive versus active nature of development and related issues in agent–action locutions and in the trait–situationism controversy. Finally, an overview is offered on what is meant by “context” and the role it serves in behavior analysis—for context is what gives behavior its meaning.

Establishing this thesis in full unfortunately requires more time, space, and intellectual acumen than are presently mine, but the following analysis may offer at least the patina of the rich quality and deep texture of this material. Moreover, I will not assert the contextual nature of behavior analysis dogmatically because, although I am strongly inclined to that position, who could judge the truth of it? The truth will eventually be rendered pragmatically as a matter of “successful working” among scientists interacting with the psychological subject matter—at least that is the contextual construal of this dilemma. Such an assertion would also raise difficulties because neither contextualism nor behavior analysis is any one thing. As described earlier, contextualism has been instantiated in a variety of forms and combinations, not all of them compatible on all categorical fronts—for instance, as to whether or not contextualism’s organism possesses agency and intentionality, or whether or not contextualism embraces teleological causation (see Rosnow & Georgoudi, 1986, for inconsistencies in these regards). Also, by certain definitions and under certain circumstances, behavior analysis evinces a mechanistic character (Bijou, in press; Crabb, 1988; Hayes, Hayes, & Reese, 1988), albeit a mechanism that is largely derivative, and not categorical. In any event, I probably go beyond the established philosophical and conceptual “facts” about contextualism and behavior analysis, and I admit that, but so too have the advocates of contrary views, and they have been doing so for many scores of years.

SOME HISTORICAL ROOTS

The Received View

In the standard account of the history of psychology, behaviorism and mechanism are taken to be aligned together through the legacy of Democritus’s atomism, the material and reflex side of Cartesian dualism, Locke’s espousal of an epistemological tabula rasa, and on down through the empiricist and associationist movements in philosophy, from Hume and Berkeley, through the Mills, both father and son. Then, with the founding of the first systems of psychology, Wundt’s and Titchener’s structuralism became the thesis for the antithesis of James’s and Angell’s functionalism, from which Watson’s (1913, 1930) classical behaviorism emerged, in part, as synthesis. This synthesis, accompanied by its philosophical legacies of elementarism, reductionism, environmentalism, and associationism, sought scientific credibility, first, through an admixture of Comte’s positivism and Loeb’s operationism, and then later and more
formally through logical positivism. B. F. Skinner's descriptive behaviorism of the 1930s—the neobehaviorism out of which the behavior analysis of child development evolved (e.g., Bijou, 1955)—is said to have inherited these central traits, with mechanism being cardinal.

This rendering of the history of psychology and of “behavioristics” more specifically, is largely in the tradition of E. G. Boring's (1950) *The History of Experimental Psychology* (see also Boring, 1964). However, although this account remains widely accepted, recent scholarship has questioned the narrowness and accuracy with which the lines of psychology's descent have been drawn, including the relative emphases placed on, and the inclusions of, particular individuals, schools, and systems (see e.g., Buxton, 1985; O'Donnell, 1985; Smith, 1986). Emerging from this material is a revised account of the history of behavior analysis, within which its contextualistic roots may be gleaned.

**A Revised Account**

*Naturalism and materialism.* A more accurate history of behavior analysis would trace its origins back to the naturalism of Hellenic Greek philosophy, particularly as espoused by Aristotle, the importance of which was lost in later theologically based reinterpretations of that material (Kantor, 1963). The subsequent rekindling of naturalistic attitudes toward human behavior during the Renaissance and the soon-to-come Scientific Revolution were strongly influenced by these and later theological views, especially those of Rene Descartes, who established separate paths for the psychology that followed—one path interested in the immaterial soul-cum-mind and the other interested in the material body. Neither path, though, characterizes contemporary behavior analysis, for it is neither mentalistic nor materially reductionistic, especially as the latter has been construed mechanistically within S–R psychology (Reese, 1986; Ringen, 1976). In contrast, behavior analysis is focally concerned with the field of purpose and intention (Day, 1976a), conceptualized in its own fashion—also a major concern within contextualism.

*Empiricism and associationism.* The role of British empiricism and associationism in the history of behavior analysis requires revision as well. With respect to empiricism, John Locke's epistemological *tabula rasa* never negated organismic structure and function as sources of individual differences, within or across children, nor did it negate the private or inaccessible aspects of what we speak of as feeling, thinking, or consciousness. Likewise, neither does behavior analysis. Biology, for instance, is taken to participate in all psychological activity—it serves as an ever-evolving context that is necessary though not sufficient for behavioral development (see Delprato, 1979; Kantor, 1947; cf. Lehrman, 1953; Lewontin, 1976; Schneirla, 1966). Behavior analysis also self-consciously acknowledges psychological privacy (Schnaitter, 1978), as
well as psychological activity within the skin, accepting the latter as a proper though difficult domain for analysis (Skinner, 1945, 1974). Moreover, biology, privacy, and all behavioral relations are taken as the historical context for subsequent behavior, which brings some sense of an evolving rationalism to the behavior-analytic account of child development in what is otherwise viewed as a strictly empiricist endeavor.

Behavior analysis is also not philosophically or psychologically associationistic (Branch, 1977). Associationism represents a reductionistic and, in one sense, a "molecular" view in which fundamental and universal atomic elements of the mind—now, formally instantiated as stimuli and responses—are taken as "things" that exist in nature. Multiplied out through contiguity in time and succession, the S-S and S-R associations are then said to produce and explain complex behavior. In contrast, behavior analysis adheres to a "molar" perspective in which elementary stimulus and response units do not exist on an a priori basis. The biological reflexes notwithstanding. Rather, behavior is characterized in terms of evolving, codefining classes of stimulus and response functions in context—said interrelationships being the "structure" of behavior (see Bernstein, 1982; Thompson & Zeiler, 1986). In this latter view, the extension of behavioral structure in space or in time is irrelevant to its molarity. That is, the physical size of the members of the functionally interrelated stimulus and response classes is not a defining characteristic of behavioral structure—behavior ranges from salivation to grand insaturation. Also, behavior analysis does not restrict the functional relationships between classes of stimuli and responses to temporal contiguity, but rather enriches them by accepting relationships that exist at a temporal distance, but without the physiological or mental "aether" needed in mechanism to link them in contiguity (Marr, 1983). In sum, only at the molar level does behavior take on meaning (see Day, 1980; Krechevesky, 1939; Verplanck, 1954, on the gestalt-like nature of behavior analysis).

Structuralism and functionalism. With respect to the first schools and systems of psychology, behavior analysis is properly aligned with functionalism (cf. Dewey, 1896; James, 1890; Mead, 1934), especially in its emphasis on the utility and adaptiveness of mind and consciousness—now, behavior. This does not mean, though, that behavior analysis views structural concerns with antipathy (see, e.g., Catania, 1972), for at issue is not the correctness of structural versus functional analyses, but rather the nature of the questions asked and the use to which the answers are put. That the province of structural analysis is generally within the purview of cognitive psychology, and that of functional analysis within the purview of behavioral psychology, has unfortunately resulted in the respective correlation of structural and functional concerns with the disputatious dualism of cognition and behavior, thereby pitting structural and functional analyses against one another in a dogma eat dogma world. As in biology,
structural and functional analyses should not stand in opposition or conflict. They are a false dichotomy whose concerns are orthogonal to the cognitive-behavioral dichotomy, a false dichotomy itself within contextualism.

The issues involved here are, of course, vastly more complex than just characterized. For instance, within contextualism, differences between structural and functional concerns are actually matters of the observer’s temporal perspective and the duration of events, for behavior is never static, but always active. Nonetheless, disentangling the two analytic dimensions from cognitive psychology and behavior analysis illustrates that even when cognitive and behavioral developmentalists may be differentiated by their respective concerns over structure and function, those concerns are nondefining of the two orientations and are amenable to analysis from either perspective (Catania, 1973, 1978).

**Behavioral biology.** As the material to this point suggests, little of what has been taken to be the history of behavior analysis is exactly so. Indeed, contemporary behavior analysis actually owes less to the history of psychological science than to developments in biology, especially as they evolved from the work of Charles Darwin (1859, 1871, 1872) (Boakes, 1984; Herrnstein, 1969). This heritage yields today a behavior analysis that adheres (a) to continuity across species in biology and behavior, without denying the possibility of principles unique to humans (Skinner, 1938, p. 424; see Hayes, 1987): (b) to parsimony in seeking an account of behavior at the level of behavioral systems in context, avoiding the tendency to explain by naming (Ryle, 1949); (c) to research practices derived from Claude Bernard’s (1949) work in experimental medicine, not from the social sciences (see Thompson, 1984); (d) to a view of behavioral adaptation in terms of “selection by consequences” in a manner analogous to natural selection (Skinner, 1981); and (e) to philosophical pragmatism, which is elaborated below.

**Positivism, operationism, and pragmatism.** Under the influence of the Vienna Circle (Carnap, 1935; Popper, 1959), positivism and operationism of the sorts promoted earlier by August Comte and Jacques Loeb became an institutional characteristic of psychology during the 1930s (see, e.g., Stevens, 1939). The message seemed clear at the time: If psychology were to be a real science, it would have to develop objective definitions for its subjective terms, and exclude that which was not logically or linguistically definable from its subject matter. The methodological behaviorism that grew out of these views, though, had several deleterious effects on psychology (Moore, 1980, 1981, 1985). First, although ostensibly objective, the movement did not satisfactorily resolve the mind body problem because the mind was still presumed to exist, albeit outside the realm of scientific psychology, thereby restricting the domain of the psychology to be explained (Moore, 1981; Skinner, 1974). Second, operational definitions and positivistic philosophy became so narrow that
terms lost their ordinary-language meaning, thereby restricting the character of the behavior that could be understood to an arid truth-by-agreement (Deitz & Arrington, 1984; Skinner, 1945). And third, too much of the movement ignored the involvement of the scientist in science, thereby restricting the proper account of science as the behavior of scientists and the products thereof (Skinner, 1956, 1957, pp. 418–431; Smith, 1986). These are matters of epistemology that cannot be glossed over with the veneer of objectivism (Day, 1983).

Much of psychology has continued in the mold of this operationism and positivism, but not without protest, most commonly from phenomenologists, Gestalt psychologists, psychoanalysts, humanists, and now hermeneuticists. Contrary to the received view, however, contemporary behavior analysis is also critical of such scientism. Specifically, behavior analysis adheres to a psychological, not a logical epistemology (Smith, 1986, pp. 259–297), with a line of descent from the inductive positivism of Francis Bacon (1889; see Smith, 1986, pp. 259–297) and Ernst Mach (1960; see Day, 1980; Marr, 1985; Skinner, 1945; Smith, 1986) and from analytic philosophies reflected in Ludwig Wittgenstein’s (1953, 1958) later work (Arrington & Deitz, 1986; Day, 1969a; Deitz & Arrington, 1984; Morris, 1985a). In these views, the problem is not how to make subjective terms objective by a priori logical definitions and operational, linguistic conventions, for the subjective–objective distinction is a false one. Rather, the problem is how to discover and describe the historical and current context in which subjective terms are spoken, because context is what gives those terms their meaning (see Day, 1976b; Malcolm, 1977; Skinner, 1945, 1957). Behavior analysis never ruled out the subjective and private as a subject matter; rather, it accepts such activity as behavior in context. This epistemology, then, has a phenomenological, even hermeneutical, quality to it that belies the mechanistic distinction between the knower and the known (Day, 1969a, 1969b, 1977, 1988; see Giorgi, 1975; Kvale & Grenness, 1967).

What this analysis begs, of course, is a truth criterion. That, though, is found in pragmatism. Not only did William James establish functional psychology, but he was also central, along with Charles S. Peirce, in developing pragmatism both as a philosophy and as a method for defining truth and value (James, 1907; Peirce, 1923, 1940). In the hands of James and Peirce, as well as of John Dewey (1896) and G. H. Mead (1934), and as influenced by the biological concept of adaptiveness, pragmatism takes knowledge to be relative, with absolute truth a categorical impossibility. Simply put, “knowing” refers to behavioral relations, and behavioral relations are a function of their historical and current context.

2 As Ira Gershwin might have lyricized, had he known more about the philosophy of science, “You say Popper and I say Pepper.”
"Knowing the truth" can never step outside of itself (i.e., outside the stream of behavior) for some absolute evaluation because that evaluation, too, is a behavioral relation in context, and so forth. Under this pragmatic philosophy, the criterion for knowledge and truth is "successful working," which again reflects a psychological, not a logical or linguistic, epistemology. Within behavior analysis, this criterion is spoken of as "effective action," whether in basic or applied research or in conceptual analysis (see Day, 1980, pp. 234–237, 1983; Hayes & Brownstein, 1986; Lamal, 1983; Skinner, 1974, p. 31; Zuriff, 1980, 1985, pp. 257–261).

**Conclusion**

Although this revised account of the history of behavior analysis is insufficiently developed, the lines of descent show a decided contextual lineage, much different from the mechanistic heritage that is commonly presumed—if the account has not been overly "presentist." As for contextualism itself, it was literally born of the pragmatism of Peirce, James, Dewey, and Mead. Indeed, contextualism may be said to be the modern instantiation of philosophical pragmatism. These lines of descent, though, are more hints and suggestions than direct argument that behavior analysis is contextualistic in world view. For the latter, let me turn to the next section of the paper in which the typical rendering of Pepper's view of mechanism is contrasted with the contextualism of behavior analysis, especially with respect to the consequences these two views have for several core developmental issues.

**MECHANISM AND CONTEXTUALISM**

According to the mechanistic world view, as presented in the developmental literature (see, e.g., Overton & Reese, 1973; Reese & Overton, 1970), behavior and environment are reduced, respectively, to responses and stimuli, both existing as primary, universal, unchanging, discrete elements out of which the whole of development in all its complexities and qualities is built. As for causation, the elements are said to act on

---

1 Although "successful working" is contextualism's pragmatic theory of truth, to adopt the behavior-analytic "effective action" version of this truth criterion—as in, for instance, effective "prediction and control"—is not necessarily to adopt contextualism as a world view. "Successful working" and "effective action" are not precisely interchangeable (Reese, 1984), though both are still beyond the arid truth-by-agreement.

2 For more thorough treatments, see Kantor's (1963, 1969) two-volume, The Scientific Evolution of Psychology, which presents a historical treatment of the development of a natural science of psychology; Day's (1980) chapter, "The Historical Antecedents of Contemporary Behaviorism," which covers the philosophical lineage of radical behaviorism more specifically; and Smith's (1986) Behaviorism and Logical Positivism: A Reassessment of the Alliance, which clarifies the psychological, as opposed to logical, epistemology of the neobehaviorists—Tolman, Hull, and Skinner. For other treatments of the history of behaviorism, see Boakes (1984) and O'Donnell (1985).
one another as do physical forces, the results of which are chain-like connections between, or sequences of, stimuli and responses. Causation flows from stimulus to response in a manner that is immediate, contiguous, and efficient. The truth criterion of these causal mechanisms is correspondence: Given that knowledge in mechanism is knowledge about the nature of a realist ontology, the truth of that knowledge is found in the correspondences across domains of the activity of the machine or in predictions between what is said about the machine (e.g., hypotheses) and how the machine operates (e.g., confirmations). Finally, according to the mechanistic view, the developing organism and its responses are characterized as being passive and inherently at rest. They are “being”—not at all “becoming.” Mechanism’s locutions are nominal and thing-based.

As for the world view of contextualism, it will be introduced more inductively and elaborated on more fully in the material to follow. For present purposes, however, a brief description will suffice. In contextualism, behavior occurs in context and must be studied as such, for context gives behavior its meaning (i.e., its function)—the whole is primary, the elements are derived as abstractions or constructs. The meaning of behavior emerges from the ever-evolving historic context (i.e., through historical causation) and is instantiated in the current context, as the present becomes past for subsequent behavior—hence the root metaphor of the “historic event” for the ongoing act-in-context. In the historic event, change is categorically given, thereby making the ontology of the psychological present both active and evolving, and obliging epistemology to be forever relative. Because knowledge about the world is never final, but rather inductive, inferential, and conceptual, the criterion for truth is the ever-pragmatic “successful working.” Finally, behavior is characterized as active and inherently developmental (evolutional) in nature. It is never “being,” but always “becoming.” Contextualism’s locutions are verb-based and active.

With mechanism and contextualism now sketched, some of their consequences for core issues in developmental psychology are compared and contrasted, thereby illustrating further the contextual nature of contemporary behavior analysis. Before beginning, however, let me offer one caveat: The main thesis of this paper—that behavior analysis is contextual in world view—does not yet find broad, explicit acknowledgment within the field of behavior analysis, even in the most informed of presentations (e.g., Branch, 1987; Michael, 1985; E. P. Reese, 1986), but neither is the thesis novel (see, e.g., Hayes, 1986, 1988; Hayes, Hayes, & Reese, 1988; Morris, 1982; H. W. Reese, 1982, 1986). In general, though, the perspectives and arguments used in making the present case may be implicitly found in, and are supported by, the mainstream behavior-analytic literature. To be specific, not only does this material characterize

Enough background and academic fastidiousness. Let me turn to the consequences of mechanism and contextualism for five core issues in developmental psychology (see also Morris, 1988a), the first of which is elementarism versus holism.

**Elementarism versus Holism**

Mechanistic theories of development are said to adhere to elementarism, as opposed to holism, and to represent children and their environments as but collections of materially fundamental, atomic response and stimulus elements. Complex action is then but an associative compounding of the basic elements and their interrelations, in which identical response elements and identical stimulus elements are taken, respectively, to have identical meanings or functions—such is the character of a machine. In both cases, the whole can always be reconstituted in terms of its parts because the parts are unchanging.

But this is not the behavior-analytic view—for at least two reasons. First, *behavior* is the unit of analysis, not the spatiotemporally defined response or “muscle twitch” (Skinner, 1931, 1935; see Thompson & Zeiler, 1986). A response per se is a physiological and anatomical entity, such that the analysis of behavior in terms of responses alone would be elementaristic at best and reductionistic at worst—superficial in either case. In contrast, behavior is a dynamic, synergistic, and active interrelation, not a thing, in which a response is but one component. The unit of behavior includes not only responses, but more importantly the functions of those responses, along with their interrelated stimulus functions in current and historical context (see Bijou, in press; Skinner, 1935, 1938; Kantor, 1959). The behavior-analytic view, then, is holistic in that neither responses nor stimuli have psychological meaning, function, or significance in themselves, but only in their interdependent relationships with one another and their context, through which they are codefining features of behavior. Behavior analysis knows no fundamental, atomic stimulus or response elements definable a priori or out of context. The stream of behavior and its lines of fracture are fluid and ever-changing.⁵

⁵ In Skinner’s words, “As it stands, I’m not sure that ‘response’ is a very useful concept.
The second reason why the mechanistic depiction of development is not the behavior-analytic view pertains to the form–function distinction and their interrelationships. Given that responses and stimuli have no psychologically inherent meaning or function, then physically identical responses and stimuli need not have the same meaning or function across or within individuals (Baer, 1982). Indeed, they can never have precisely the same meaning given that the contexts of each individual’s history, and hence the function of the present circumstances, are unique and ever-changing. Relatedly, physically dissimilar responses and physically dissimilar stimuli can have respectively similar meanings or functions (i.e., be members of the same stimulus and response class). Thus, individual differences in form–function relationships are ubiquitous across a lifetime, and the process–achievement, means–end relation between them is a highly dynamic one (cf. Kantor, 1933).

In sum, inherent in this contextual characterization of behavior analysis is a holistic quality in which neither responses nor stimuli have meaning unto themselves. Rather, meaning is an emergent property of their interrelationship within their historical and current contexts, all of which constitutes a dynamic unit of analysis.

**Development as Response-Based Change versus Structural Change**

A second consequence of the mechanistic and contextualistic world views pertains directly to what it is that develops. From the mechanistic perspective, development comprises changes in responding across chronological age. It represents a continuous, linear succession of cause and effect, wherein changes in responding are reducible to, and exactly predictable from, their prior immutable forms. In contrast, the contextual character of behavior analysis focuses on development as the ongoing evolution of interrelationships among stimulus and response functions in context—the interactions being mutual and reciprocal, and constitutive of behavior’s structure. In this sense, development refers to broad generalized changes in the organization or structure of the behavioral relations (i.e., changes in “acts,” not in mere responses, see Lee, 1987).

This approach to structure has been characterized as a behavioral system (Delprato, 1986; Ray & Delprato, in press) or integrated field of factors (Kantor, 1959)—a view that is receiving increased conceptual and empirical attention (see, e.g., Bernstein & Brady, 1986; Lubinski & Thompson, 1986; Sidman, 1986a, 1986b; Wahler & Fox, 1982). From this perspective, the analysis of behavior is an analysis of its sequential patterning across time (sequential analyses) and/or among its concurrently

---

Behavior is very fluid; it isn’t made up of lots of little responses packed together. I hope I will live to see a formulation which takes this fluidity into account” (Evans, 1968, pp. 20–21).
interrelated stimulus and response functions in context (concurrent analyses). Such analyses thereby largely require multiple-response research methodologies not only for relations among Ss and Rs, but also for relations among Ss and Ss, and Rs and Rs—no matter what the level, from dispositional analyses of personality (Lubinski & Thompson, 1986), to psychopathological symptomology (Kazdin, 1982), to sequential dependences in clinically significant behavior (Reid, Patterson, & Loeber, 1982), to response substitutions, both normal (Bernstein & Ebbesen, 1978) and deviant (Wahler & Fox, 1982), and to the distribution and organization of operant behavior in laboratory contexts (see, e.g., Collier, 1982; Henton & Iversen, 1978; Rachlin, 1982).

As an important aside, the "mutualism" among the relations within the behavioral structure not only stresses that development refers to changes in response functions, but also to changes in stimulus functions. It is a psychological fallacy to conceive of the environment as if it were an extant physical thing to which children must somehow accommodate their responses throughout their lifetimes. In contrast, in the behavior-analytic view, the behavioral (psychological) environment develops in mutual, reciprocal interaction with the behavioral (psychological) organism—there is no parsing of development into child and environment as separable causes, or into the mental and the environmental. Not only does contextualism go beyond dualistic accounts of development in which the environment is represented in the mind, but it also goes beyond environmentalistic accounts in which a realist physical environment is taken to be external to behavior (see also, Gibson, 1979). Instead, the stimulus function of the environment is part of, or internal to, the unit of behavior. In contextualism, child and environment, and stimulus function and response function, evolve, develop, and stand in a largely systematic, that is, a structural, interrelationship with one another (Dewey, 1976; Waddington, 1975; see Pronko & Herman, 1982).

Unfortunately, the term "structure" suggests that behavior has a static, thing-ness quality to it, whereas the contextual implications of behavior analysis are quite the opposite, so let me comment further. The behavioral system is a fluid, ongoing, living system. As such, the structure of behavior—that is, the interrelated stimulus and response functions in context—has not only evolved to the point of the psychological present, but it continues to evolve as present becomes past for more present. Through this, the historical context is altered for the next interaction, and so forth. Put differently, the behavioral structure adapts by assimilating and accommodating changes in stimulus and response functions, the dynamics of which are organized according to the basic behavioral processes or
principles which keep the system from becoming dispersive. This is an active, organized system, one in which development is not derived, but in which development is categorically given (see Delprato, 1980). Indeed, both contextualism and behavior analysis are inherently “developmental” in this sense.

Causal versus Functional Analysis

In mechanism, the scientific task is an analytic account of behavior in terms of antecedent–consequent, if–then relations, that is, in terms of contingent and contiguous cause-and-effect between independent and dependent variables (see Russell, 1953). As a conceptual and experimental tactic, such parsing is central to the methods of contemporary psychological science, just as the parsing of behavior into the three-term contingency (i.e., discriminative stimuli, operant responses, and reinforcing stimuli, that is, SD→R→SR) has become central to behavior-analytic practices (e.g., control of the developmental process, cf. Baer, 1973).

Contextualistically, however, the analysis of behavior proceeds differently. As suggested in the previous section, it focuses first on the general function of behavior as adaptation, and second on the general structure of behavior as the systematic interrelation of stimulus and response functions in context. Within this perspective, the typical notion of efficient cause-and-effect relationships between dependent and independent variables, or between antecedents and consequents, gives way to an integrated-field perspective of functional interdependencies. In the latter, “cause” loses any essential meaning when causation becomes the entire field of currently interdependent factors necessary for understanding behavior (cf. Einstein & Infeld, 1961).

This contextual view comports well with the approach Skinner (1931, 1935) took in his early analysis of the generic nature of stimuli and responses, in which he emphasized the organization of codefining and interrelated stimulus and response classes, not their temporally antecedent and consequent relations. When viewed in terms of classes of events, stimulus and response functions stand in direct interrelationship with one another, a view that contrasts with conceptualizations of the unit of behavior as a temporal ordering of independent and dependent variables, which is how they appear from the standpoint of observers, but not from the standpoint of the events themselves (i.e., their codefining functional relationships and the mutual evolution of those functions over time). Indeed, characterizing behavior in terms of independent and dependent variables and making the former into “causes” has more to do with the behavior of scientists than with the functional interrelations under study.

In contrast, others have sometimes sought to solve the problem of dispersion by merging contextualism with organicism (see, e.g., Lerner & Kaufman, 1985).
Similar issues arose in behavior analysis when respondent and operant units of analysis were abstracted out of the generic stimulus and response classes, and with the concommitant organization of the stimulus function—response function interrelationships along a temporal dimension (i.e., the S→R reflex and the SD→R→SR three-term contingency) (Skinner, 1938). In making these abstractions, behavior analysts represented the two units in terms of antecedent–consequent, independent–dependent causal relationships, foregoing the earlier view of behavior as a systematic correlation of stimulus and response classes (or functions). The relative success of such parsing has unfortunately led some behavior analysts to overlook their own context theory of meaning and to be "conditioned" into a more mechanistic view than their actual metatheoretical allegiances should allow. Thus, although such causal analyses are not necessarily categorical in behavior analysis, some tension clearly exists with respect to the mechanistic view these units imply (Baltes & Reese, 1977; Midgley & Morris, in press).

The preceding notwithstanding, current trends in the analysis of behavior have a more contextualistic flavor, especially with respect to the structure of behavior (e.g., Bernstein, 1982), the concommitant necessity of more systems-like research strategies (e.g., Delprato, 1986; Henton & Iversen, 1978; Ray & Delprato, in press), and an emphasis on integration and synthesis, as well as analysis (e.g., Thompson & Zeiler, 1986).

**Continuity versus Discontinuity**

With respect to the character and course of development, the mechanistic model views development as a process of continuous, quantitative change in responses over time, as opposed to qualitative discontinuous change in behavior. Development, then, occurs in linear succession of cause and effect in which changes in responding are, in principle, exactly predictable and reproducible from prior responding and its causes. All of this follows straightforwardly from the foregoing descriptions of the mechanistic world view.

In contextualism, however, change is categorical—behavior is never static. And, given that change occurs in the context of an ever-unique historical context, then behavioral development is discontinuous in the sense that the behavioral structure of functional relationships undergoes qualitative reorganization with each interaction. As mentioned previously, neither responses nor stimuli have meaning unto themselves, but only through their interrelationships with one another and their context; the whole is more than the sum of its material constituents. Thus, when one the systems of functional stimulus–response interrelations changes—a ubiquitous character of "becoming"—then the general character of the entire behavioral structure changes. Such change may facilitate or inhibit subsequent development, hence grounds again for denying the pernicious
aspects of philosophical empiricism attributed to behavior analysis. In any event, in the sense that these changes in functional interrelations represent a reorganization of the behavioral structure, then developmental change is of a qualitative, novel, and discontinuous sort.

Two seemingly paradoxical consequences fall from this view. First, the categorical position with respect to discontinuity does not deny continuity in the sense that behavior, constituted of stimulus and response functions in context, is continuously active. That is, behavior is emergent and its development proceeds as a continuous process. Second, adhering to discontinuity might seemingly require that development be characterized in terms of qualitatively discrete stages, but this is not necessarily so. Behavior, as a historic event, evolves on a moment-to-moment basis, reflecting a dialectical process of change and interchange within its structure (Krapfl, 1977). These changes are indeed qualitative and novel, but typically inappreciably revolutionary for the usual concept of developmental stages to have significant meaning. Still, behavior may display organization on different levels (see Thompson & Zeiler, 1986), where at some point the concept of stages may have sufficient heuristic descriptive and predictive value to warrant formalization. In any event, the typical stage concept is derived from contextualism’s discontinuity—it is not categorical to it.

The Passive versus the Active Organism

A fifth and final issue on which the mechanistic and contextualistic world views converge is on the passive versus the active nature of development. Within the mechanistic account, causation is characterized in terms of the effects of efficient independent causes on dependent material—material that is otherwise at rest. Stimuli and responses are taken to be linearly sequenced as cause and effect, a view sometimes represented in the behavior-analytic literature in terms of the “responsive” organism (e.g., Baer, 1976; see Reese, 1976). This is not to say that mechanists do not talk about bidirectional causality, but such talk is usually about back-and-forth linear causality—from the effects of the environment on responses to the effects of responses on the environment, and so forth. Research on child effects on adult behavior (see, e.g., Bell & Harper, 1977), for instance, is not inherently contextualistic; it can be construed in mechanistic sequences of weak reciprocal interactions as well, and usually is.

As described earlier, even though the unit of behavior in behavior analysis is parsed into stimuli and responses, the focus is on their functional interrelations in context. More importantly, those functional relations stand in a strong reciprocal interaction or better—in Dewey and Bentley’s (1949, p. 108) terminology—in a *transactional* relation with one another:
they are mutually defining and implicative. From this perspective, both stimulus and response functions contribute to behavior, and behavior may thus be said to be active, not passive. This view is pertinent to two interrelated problems within psychology: The locutional problem of speaking about behavior in agent–action terms and the problem of traits and situations. the latter of which is a pseudo-problem within contextualism. Both of these are discussed below.

The locutional problem. To put the contextual construal of the active–passive problem in an organism-based locution, children are said to be the active agents of development through the unique, individual meaning they give to their behavior, that is, to the stimulus functions they give their environments and to the response functions they give their activities—all through the action of the child on the environment. Development, though, may also be put in an environment-based locution, where the environment is said to be the active agent through the unique, individual meaning it gives to behavior, that is, to the stimulus functions it gives to stimuli and to the response functions it gives to child activity—all through the action of the environment on the child. The first locution, though, makes the environment appear passive, which it is not, while the second locution makes children appear passive, which they are not.

Unfortunately, neither organism-based nor environment-based locutions capture the essence of contextualism, in which stimulus and response functions are mutually defined by their transactional relationship, for the two locutions align too closely with the organismic and mechanistic world views, respectively. Not only are these two locutions misleading, but, to compound the problem, their grammatical forms seem easily acquired and spoken in ordinary English or in “Standard Average European” (Whorf, 1956). The latter may be a consequence of the disposition of our grammatical structure to agent–action syntax, to agent nouns (i.e., organisms, traits, structures, representations—and the environment) reified from verbs, adverbs, and adjectives (actions and their qualities), and to the priority of things and agents over action and change. In contrast, our language offers few fluid, nonawkward, or easily understood grammatical structures for speaking contextually; hence such talk is difficult for speakers and writers, and often obscure to listeners and readers (sic). English grammar and syntax simply seem mismatched with the subject matter of psychology (Hackenberg, 1988; Hineline, 1980; Lee, 1988; see Whorf, 1956).

The deep structure of organism-based locutions no doubt has had its benefits for the organization of social order and moral responsibility that

---

7 For further commentary on the transactional nature of contemporary behavior analysis, see Pronko and Herman's (1982) “From Dewey's Reflex Arc Concept to Transactionalism and Beyond” (see also Keehn, 1980).
emerged in the Renaissance; likewise, the deep structure of environment-based locutions had its benefits for the subsequent conduct of naturalistic inquiry that emerged from the Scientific Revolution. Interestingly, the organismic and mechanistic world views largely inherent in the two locutions overlap considerably with the respective character of the first two stages of scientific evolution—the self-actional and the mechanical (see Dewey & Bentley, 1949; Einstein & Infeld, 1961; Kantor, 1946; Pronko & Herman, 1982). At this point in the history of psychology, however, our language's lack of a deep structure for speaking contextualistically may be hindering the emergence of the third stage of scientific evolution—the integrated-field stage—with its underlying contextualistic world view. At the very least, the linguistic inadequacy is hindering fruitful interchange between behavior analysts and developmental psychologists, who, with their respective environment- and organism-based locutions, seem to identify very different subject matters and causal schemes, thereby obscuring their common interest in "development."*

In any event, in arguing for the active character of behavior, the behavior-analytic position is not that children are self-actional, autonomous agents. Likewise, though, neither do (or should) behavior analysts assert that the environment is an autonomous cause, the practical utility of the latter notwithstanding (Hayes & Brownstein, 1986). The tension here between these views of causality is at the heart of the trait–situationism debate, in which are embedded the locutional problems described above, as well as some of the logical characteristics and flaws with the nature–nurture issue so closely aligned with the presumed contrast between developmental psychology and behavior analysis.

The trait–situationism problem. From a contextual perspective, stimulus functions and response functions develop historically and exist simultaneously with respect to one another, and are defined in terms of each other in context. As such, stimulus functions have no more "control" over behavior than do response functions—the two are interdependently

* Verplanck (1954) has commented astutely on how differences in locution and vocabulary have produced unfortunate misunderstandings about Skinner's experimental and conceptual analyses:

Because of the existence in Sherrington and Pavlov of sets of data of the kind [Skinner] believes are needed [for his system], he has adopted many of their terms and applied some of their laws in defining behavior. As a consequence, he has been misinterpreted. In his choice of terminology, Skinner has assured that his work and those of his followers will be read easily by the followers of Hull and Guthrie and only with emotion, if not with difficulty, by those who have selected the organismic-field-Gestalt-force family of words to work with. Skinner's conditioned responses seem to many readers just as mere as those of Pavlov or Hull, with the extraordinary result that he has been classed with Hull rather than with Tolman, with Guthrie rather than with Lewin, in his general position. (p. 307).
and mutually defining. A situation does not compel a response to occur except through a child's historically derived response functions for that situation, but neither does a child compel a response to occur except through the situation's historically derived stimulus functions for the response. Thus, situations do not possess independent or inherent power to control behavior any more than children possess independent or inherent power for such control. Both are products of unique, ever-changing interactional histories, a point commonly misunderstood in appraisals of behavior analysis (see, e.g., Bowers, 1973).

Interactions may display qualities attributable to personal or situational control, depending on how the interactions are viewed or investigated, but those attributions are merely shorthand conventions derived from an overemphasis on organismic and mechanistic thinking, as opposed to a contextual world view. What is most objectionable here, though, is the reification and causal status given to the child as a relatively autonomous, active agent, as per organicism, or to the situation as a relatively autonomous physically stimulating force, as per mechanism. Behavior, of course, can be predicted on the basis of information about children or about the situations in which they find themselves, but the ability to do so does not thereby bestow causal power on either. Attributions of such causal powers have more to do with the behavior of scientists than with child development. To assert that such power exists at all moves the analysis of behavior away from the contextual account it requires in contextualism.

Summary

To this point in the paper, a case has been developed that behavior analysis is contextual in world view, as opposed to being mechanistic, by examining, first, its historical development and, second, some consequences of its contextualism for five key developmental issues. The presentation of this material has been highly conceptual in nature, perhaps even ethereal for the empirically minded child psychologist; thus, let me focus the third and final section of this paper on a more concrete, operational sense of "context"—wherein context is what gives meaning to behavior.

THE CONTEXT IN CONTEXTUALISM

Within the past decade or so, psychology has shown an increased interest in "context." This is evinced not only in psychology as a whole, where much of this focus has been on an ecological orientation (Gibbs, 1979; Wicker, 1983), but also in its various subdisciplines, for instance, in studies of social psychology, personality, language, and development (see Rosnow & Georgoudi, 1986), and in specific empirical research areas, such as memory (Jenkins, 1974; see Marr, 1983), perception (Gibson,
In most of these domains, context usually refers to the contextual and multiple determinants of behavior, that is, to broad, complex, and numerous antecedent causes, and to the interplay of the various concurrent levels at which behavior occurs (e.g., personal, social, and cultural; see Bronfenbrenner, 1977, 1979). Although "context" often provides more facade than facts in these cases because of its lack of specificity and precision, these moves to broaden the scope of psychology seem obviously quite right and quite necessary.

To give contextual determinants their due, however, is not necessarily to embrace contextualism as a world view (see Valsiner & Benigni, 1986, for parallel problems with the ecological perspective). Such determinants can be handled mechanistically, as well, in the sense that all causes have contexts. Within this latter world view, any sophisticated and thoughtful analysis of behavior would of course incorporate multiple, complex, and interlocking mechanisms, as well as inhibitory and facilitory servomechanisms, as illustrated, for instance, in the S–R model of learning (Hull, 1952) and in the currently fashionable computational models of cognitive science (see, e.g., Block, 1980, 1981; Haugland, 1981). In contrast, within contextualism, context of a different and more specific sort is categorical: Context imbues behavior with meaning—the meaning of behavior emerges from its context. Behavior is not the mere interplay of materially defined stimuli and responses, but rather is represented by strong reciprocal interactions among stimulus and response functions in context—where those functions emerge from their context and from nowhere else.

Within behavior analysis, context can be organized into the historical and the current, each of which serves distinctive functions. The function of the historical context—both phylogenetic and ontogenic—is to establish what stimulus and response functions may occur in behavior, whereas the current context—its structure and its function—establishes what particular behaviors can and will occur, respectively. And, of course, all three contexts interact to affect and change one another over a lifetime.

The Historical Context

With respect to phylogenetic history, it is not only the source of (a) species-typic boundaries and preparedness in biological structure, but is also the source of species-typic boundaries and preparedness in behavioral function through the inheritance of (b) the basic behavioral processes (e.g., reinforcement and operant behavior) and (c) the initial relationships

As a matter of historical note, these concerns over context are hardly new, for they were an integral part of much important psychology of an earlier era (e.g., Barker, 1968; Brunswik, 1952; Koffka, 1935; Kohler, 1929; Titchener, 1910; Tolman, 1932).
among stimulus and response functions (e.g., unconditioned respondents and unconditioned reinforcers)—as well as a source of variability in all three domains. Given a phylogenic history, ontogenic history then begets the subsequent individual-typic boundaries and preparedness in biological and behavioral form and function, and variability in both.

With respect to behavioral form and function, in particular, the ontogenic history has been a fundamental and explicit characteristic of behavior-analytic research on such topics as adult–child social interaction history (e.g., Redd, Morris, & Martin, 1975), reinforcement schedule history (e.g., Weiner, 1981, 1983), and the integration of independently acquired response repertoires (Epstein, Kirschnit, Lanza, & Rubin, 1984; Epstein, Lanza, & Skinner, 1981)—all of which elucidates sources of intra- and interindividual differences.

Overall, then, historical causation is central to behavior analysis, for the historical context establishes the form and function of behavior as the context for subsequent behavior (see Skinner, 1981).

The Current Context

Given that the historical context functions to establish what behavior may occur, the particular behavior that will occur and that can occur depends, respectively, on the actualizing and enabling character of the current context. What will occur (or be actualized) depends on the behavioral function of the current context; what can occur (or be enabled) depends on the physical structure of the current context. As for the latter, the structure of the current context exists materially as the biological organism (i.e., the child’s anatomy and physiology), the environment (i.e., the environment’s physical ecology), and as changes and variability in both, thereby enabling what behavior can (or cannot) physically occur. In turn, the function of the current context actualizes behavior by imbuing stimuli and responses with their dynamic and ever-evolving functions (i.e., their meaning).

Albeit sometimes conflated with multiple causation and the structure of the current context, the function of the current context has been an implicit consideration within behavior analysis for many years. For instance, concerns about the function of the current context were extant in Skinner’s (1931) “third variables” (e.g., deprivation, fatigue, drug effects), Kantor’s (1946, 1959, p. 95) “setting factors,” Bijou and Baer’s (1961, p. 17) “setting events,” Goldiamond’s (1962, p. 295; Goldiamond & Dryud, 1967, pp. 74–75) “state” and “potentiating” variables, and Gewirtz’s (1972) “contextual determinants.” The importance of such functions, however, has recently become a more explicit concern, as evidenced both in conceptual analyses and in basic and applied empirical research on, for instance, “setting events” (Bijou & Baer, 1978, pp. 26–28; Wahler & Dumas, in press; Wahler & Fox, 1981, 1982), “establishing operations”
and "establishing stimuli" (e.g., McPherson & Osborne, 1988; Michael, 1982), the "conditional stimulus control" character of the relationships involved in stimulus equivalence (Sidman, 1986a, 1986b), and "function-altering, contingency-specifying stimuli" (e.g., "rules," Blakely & Schlinger, 1987; Schlinger & Blakely, 1987). The relationships to which these terms refer are not all identical; for instance, some terms refer to the effects of context on the eliciting function of stimuli (both conditioned and unconditioned), others to effects on the discriminative function, and still others to effects on the reinforcing function (both unconditioned and conditioned). These relationships are organized more generally here, though, as the "function" of the current context, in that they all function in one manner or another to imbue, potentiate, or actualize the functions of stimuli and responses for behavior.

**Summary**

In light of the foregoing discussion, behavior analysis can be said to adhere to a context theory of meaning—the context being both historical and current. Context, though, has typically been controlled for within behavior analysis, both as a source of variation due to the historical context (e.g., species and individual history) and of variation due to the structure (e.g., current biological and physical parameters of the organism and experimental setting, respectively) and function of the current context (e.g., deprivation and instructions). As a consequence, context has not until recently been an explicit character of the behavioral unit of analysis or a subject matter for experimental analysis in its own right. Rather, it has been taken as a source of variation to be held constant.

This relative inattention given to context, as opposed to the "contingencies of reinforcement," has contributed to the appearance that behavior analysis represents the child as but a "black box," and usually an empty one at that—both biologically and psychologically (Todd & Morris, 1983). The current concern over context, however, begins to clarify a source of such misunderstandings from outside the field, and to encourage from within the field an increased scope of analysis for phenomena that behavior analysis is said to have dismissed or overlooked—phenomena that heretofore have largely been the province of the rest of developmental psychology and that have been explained in other conceptual systems. Among the latter are phenomena described and explained in terms of the structure and function of the personality (e.g., traits) or in terms of cognitive structures (e.g., schemas and rules) and processes (e.g., expectations and perception) (see Baron & Perone, 1982; Harzem, 1984). Contextualism offers a fresh new perspective on these issues, a point touched on in closing.
CONCLUSION

The present characterizations of behavior analysis, of contextualism, and of behavior analysis as contextualistic remain, of course, unfinished and underdeveloped. Indeed, for mechanists and organicists alike, the argument may seem merely to have translated mechanism into a contextualistic language without having actually presented contextualism as an alternative view. Moreover, contextualism itself rests on a slippery slope—it seems forever about to slide into organicism or into mechanism (Pepper, 1942). Nonetheless, I trust that the foregoing analysis has elucidated the contemporary behavior-analytic metatheory as being clearly nonmechanistic in world view, at least to the point that some version of contextualism is the only viable alternative among Pepper's world hypotheses.

The implications and import of this argument, of course, extend in more directions than a conclusion can contend with. One specific point, however, seems worth making—it has to do with the consequences of the current moves of both behavior analysis and developmental psychology toward contextualism, and of how these moves will affect the analysis of cognition as process and as product. I raise this issue because cognition is generally taken to be pivotal to distinctions between behavior analysis and developmental psychology—it is said to be something behavior analysis overlooks.

For the past 20 years, behavior analysis and developmental psychology have largely been speaking across world views, or across cognition as process as opposed to content, or hardly speaking at all (Morris et al., 1982). Developmental psychologists, for instance, have often dismissed behavior analysis for being mechanistic in world view, for being environmentalistic, and, if you will, for being cogniphobic, that is, for being blind to cognition as a developmental process, or at least as a behavioral product (i.e., behavioral content). Behavior analysts, in turn, have often dismissed developmental psychology for being organismic in world view, for being maturationist and mentalistic, and for being cogniphilic, that is, for being self-absorbed in considering cognition to be the central process and content of development.

From a contextual perspective, the fundamental conflict is largely a matter of differences in world views—mechanism and organicism—and only superficially a matter of cogniphobia and cogniphilia. That is, although behavior analysis and developmental psychology have been taken to be incommensurable because of their respective positions on environmentalism, on mentalism, and on cognition as process and content, the incommensurability has actually been more a function of fundamental paradigmatic differences between mechanism and organicism. With a convergence of both behavior analysis and developmental psychology toward contextualism, however, they become commensurable in world
view. And, with that, environmentalism, mentalism, and the conceptual and empirical place of cognition in child development become cast as concerns orthogonal to the defining characteristics of the two world views.

In addition, cognition becomes a content domain or quality of development to be explained, as opposed to being an underlying process that does the explaining (Ryle, 1949; Schnaitter, 1985), because a contextual or ordinary-language analysis of the term “cognition” shows it to be behavior-in-context or behavioral content (Arrington & Deitz, 1986; Day, 1969b; Deitz & Arrington, 1984; Morris, 1985a, 1985b; Skinner, 1945; cf. Wittgenstein, 1953, 1958; see also Costall & Still, 1987). That is, cognition refers to a broad domain of development—a domain whose existence is commonly enough contacted that a socially shared and conventional language has developed for describing it. In other words, and to use the vulgar behaviorese of an environment-based locution: To speak (“tact”) the word “cognition” is to emit a verbal operant under the discriminative control of the occurrence of certain behavioral relations in their historical and current contexts—relations that, in turn, may come under finer discriminative control so as to be tacted as further and finer subclasses of ordinary language terms such as perceiving, remembering, and problem-solving. In any event, and contextualistically speaking, “cognitive” is an adjective, “cognitively” an adverb, and “cognizing” a verb—all describing particular characteristics of child development.

There is no such agent, process, or thing as cognition:

Cognizing does not begin and end in one’s head or at one’s skin; it is not superordinate to our relationships, for our thoughts are our relationships. Attributions, motivation, perception, and personality—what it is to be a person—are relationships, not things going on in any one locus, whether that be a stable “package” of schema or biological processes or a subjective phenomenological reality. (Blank, 1986, pp. 121-122)

Or, as befitting the ubiquitous nature of “cognition” in our ordinary language, Descartes’s well-known dictum—“Cogito, ergo sum”—is perhaps better rendered as “Sum, ergo cogito.”

In closing, I am not arguing that behavior analysis and developmental psychology will soon, or even necessarily, become one—that would be overly optimistic. Rather, my point is that as they evolve toward the common world view of contextualism, then neither can dismiss the other on the basis of paradigmatic incommensurability, and hence each must confront important issues, such as cognition, from a common and commensurable perspective. Moreover, by adhering to contextualism, both behavior analysis and developmental psychology may also become more effective in their respective conceptual and empirical practices. And finally, they may be able to work together successfully, along with a
contextually construed anthropology/sociology (e.g., Harris, 1980), evolutionary biology (e.g., Dawkins, 1986), and physiology (e.g., Gollin, 1981; Schneirla, 1966; Weiss, 1969), toward the common goal of understanding child development in all of its contexts. That would be a historic event.

REFERENCES


